

## **Evidence for 1808–1770 Ma bimodal magmatism, sedimentation, high temperature deformation and metamorphism in the Aileron Province, central Australia**

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### **SUPPLEMENTARY PAPERS**

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**Appendix 1** Full compilation of LA-ICP-MS zircon and monazite U–Pb age data.

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Black = magmatic or detrital analyses, Green = metamorphic analyses, Red = excluded analyses

Spot name	Isotopic ratios <sup>1</sup>						Conc. (%) <sup>2</sup>	Age estimates <sup>1</sup>						
	<sup>207</sup> Pb/ <sup>206</sup> Pb	±1σ	<sup>206</sup> Pb/ <sup>238</sup> U	±1σ	<sup>207</sup> Pb/ <sup>235</sup> U	±1σ		<sup>207</sup> Pb/ <sup>206</sup> Pb	±1σ	<sup>206</sup> Pb/ <sup>238</sup> U	±1σ	<sup>207</sup> Pb/ <sup>235</sup> U	±1σ	
OG1 - Zircon: analyses used in magmatic age calculation.														
Z67_1	0.10921	0.00150	0.31294	0.00496	4.71152	0.08318	0.8977651	98	1786.2	24.85	1755.1	24.36	1769.3	14.79
Z68_2	0.11072	0.00153	0.30853	0.00370	4.70882	0.06829	0.8269120	96	1811.3	24.91	1733.5	18.21	1768.8	12.15
Z71_2	0.11051	0.00144	0.30913	0.00388	4.70879	0.06846	0.8633025	96	1807.8	23.49	1736.4	19.08	1768.8	12.18
Z72_1	0.11021	0.00152	0.32012	0.00410	4.86309	0.07459	0.8350313	99	1802.8	24.91	1790.3	20.04	1795.9	12.92
Z72_2	0.11086	0.00157	0.30504	0.00392	4.66147	0.07263	0.8247762	95	1813.5	25.43	1716.3	19.37	1760.4	13.03
Z73_1	0.11015	0.00154	0.32051	0.00396	4.86655	0.07347	0.8183984	99	1801.8	25.28	1792.2	19.31	1796.5	12.72
Z28_2	0.10939	0.00176	0.30925	0.00389	4.66269	0.07788	0.7530963	97	1789.2	28.99	1737.0	19.17	1760.6	13.96
Z44_1	0.11375	0.00144	0.33003	0.00477	5.17584	0.08229	0.9090730	99	1860.2	22.76	1838.5	23.12	1848.7	13.53
Z42_3	0.10951	0.00133	0.30454	0.00432	4.59798	0.07043	0.9260806	96	1791.3	21.99	1713.8	21.37	1748.9	12.78
Z44_2	0.11050	0.00134	0.32172	0.00458	4.90099	0.07539	0.9254597	99	1807.6	21.88	1798.1	22.32	1802.4	12.97
Z45_1	0.11061	0.00133	0.32181	0.00462	4.90754	0.07577	0.9298417	99	1809.4	21.71	1798.6	22.54	1803.6	13.02
Z51_2	0.10963	0.00122	0.31726	0.00466	4.79506	0.07243	0.9724027	99	1793.3	20.16	1776.3	22.79	1784.0	12.69
Z52_1	0.11007	0.00132	0.31664	0.00472	4.80425	0.07588	0.9437881	98	1800.6	21.70	1773.3	23.11	1785.6	13.27
Z52_2	0.11052	0.00125	0.33314	0.00480	5.07546	0.07593	0.9631113	103	1807.9	20.40	1853.6	23.23	1832.0	12.69
Z56_2	0.11273	0.00138	0.34630	0.00508	5.38145	0.08481	0.9308152	104	1843.8	22.02	1916.9	24.35	1881.9	13.49
Z57_2	0.11163	0.00129	0.31265	0.00478	4.81089	0.07607	0.9668998	96	1826.1	20.78	1753.7	23.49	1786.8	13.29
Z58_1	0.10895	0.00117	0.32601	0.00471	4.89662	0.07162	0.9877614	102	1781.9	19.55	1819.0	22.90	1801.7	12.33
Z58_2	0.10963	0.00117	0.31796	0.00470	4.80551	0.07174	0.9901557	99	1793.2	19.30	1779.8	23.00	1785.9	12.55
Z59_2	0.11353	0.00118	0.32911	0.00474	5.15122	0.07419	0.9999954	99	1856.7	18.63	1834.1	22.99	1844.6	12.25
Z59_1	0.10939	0.00113	0.32126	0.00468	4.84485	0.07041	0.9976192	100	1789.3	18.79	1795.9	22.81	1792.7	12.23
Z61_2	0.10938	0.00121	0.30342	0.00462	4.57473	0.07103	0.9806667	95	1789.1	20.06	1708.2	22.86	1744.7	12.94
Z65_1	0.11023	0.00133	0.32364	0.00471	4.91847	0.07647	0.9360470	100	1803.2	21.84	1807.5	22.91	1805.4	13.12
OG1 - zircon: excluded due to > 5% discordant.														
Z70_2	0.11149	0.00139	0.30371	0.00368	4.66771	0.06422	0.8806884	94	1823.8	22.49	1709.7	18.18	1761.5	11.50
Z27_2	0.10876	0.00152	0.29566	0.00350	4.43143	0.06447	0.8136951	94	1778.8	25.34	1669.8	17.39	1718.2	12.05
Z45_1	0.11050	0.00119	0.29331	0.00425	4.46834	0.06558	0.9872721	92	1807.7	19.42	1658.1	21.20	1725.1	12.18
Z48_1	0.11153	0.00118	0.29008	0.00420	4.46023	0.06508	0.9922959	90	1824.5	19.14	1641.9	20.98	1723.6	12.10
Z56_3	0.11462	0.00151	0.28505	0.00410	4.50417	0.07258	0.8926077	86	1873.9	23.56	1616.7	20.55	1731.7	13.39
Z57_1	0.11083	0.00131	0.29632	0.00455	4.52696	0.07231	0.9612995	92	1813.1	21.26	1673.0	22.62	1735.9	13.28
Z61_1	0.11017	0.00122	0.27625	0.00421	4.19493	0.06504	0.9829332	87	1802.1	19.94	1572.4	21.24	1673.0	12.71
OG1 - zircon: analyses excluded from calculations due to interpretation of inherited, metamorphic and modified grains.														
Z28_1	0.11409	0.00163	0.31563	0.00381	4.96316	0.07434	0.8059023	95	1865.6	25.51	1768.4	18.68	1813.1	12.66
Z29_1	0.14338	0.00246	0.35081	0.00434	6.93050	0.12075	0.7100602	85	2268.4	29.25	1938.5	20.73	2102.6	15.46
Z29_2	0.10621	0.00201	0.31136	0.00415	4.55596	0.08828	0.6878644	101	1735.3	34.15	1747.4	20.42	1741.3	16.13
Z29_3	0.10721	0.00189	0.30166	0.00388	4.45757	0.08057	0.7116047	97	1752.5	31.89	1699.5	19.23	1723.1	14.99
Z30_1	0.10566	0.00233	0.31300	0.00437	4.55685	0.10110	0.6292898	102	1725.8	39.83	1755.5	21.46	1741.4	18.47
Z30_2	0.10760	0.00174	0.31449	0.00380	4.66349	0.07675	0.7341916	100	1759.1	29.20	1762.7	18.66	1760.7	13.76
Z31_1	0.10933	0.00172	0.30935	0.00368	4.66103	0.07467	0.7425632	97	1788.2	28.43	1737.5	18.13	1760.3	13.39
Z32_1	0.10645	0.00235	0.30811	0.00420	4.51973	0.09904	0.6220787	100	1739.5	39.83	1731.4	20.71	1734.6	18.22
Z33_1	0.10812	0.00206	0.23836	0.00307	3.55214	0.06829	0.6699432	78	1767.9	34.50	1378.1	15.97	1538.9	15.23
Z34_1	0.10613	0.00193	0.27668	0.00352	4.04823	0.07480	0.6885389	91	1734.0	32.88	1574.6	17.80	1643.9	15.05
Z35_1	0.10625	0.00195	0.31408	0.00398	4.59953	0.08505	0.6853019	101	1736.1	33.29	1760.8	19.51	1749.2	15.42
Z35_2	0.10920	0.00214	0.32412	0.00428	4.87945	0.09677	0.6658372	101	1786.0	35.36	1809.8	20.83	1798.7	16.71
Z36_21	0.13472	0.00253	0.40570	0.00521	7.53428	0.14301	0.6765627	102	2160.4	32.36	2195.2	23.90	2177.1	17.01
Z36_2	0.10731	0.00201	0.31650	0.00403	4.68201	0.08845	0.6740092	101	1754.3	33.77	1772.6	19.75	1764.0	15.81
Z37_1	0.11275	0.00226	0.33626	0.00438	5.22606	0.10509	0.6477567	101	1844.1	35.77	1868.6	21.13	1856.9	17.14
Z37_2	0.10900	0.00252	0.33905	0.00461	5.09362	0.11657	0.5941238	106	1782.7	41.56	1882.1	22.21	1835.0	19.42
Z38_1	0.10976	0.00210	0.33103	0.00414	5.00857	0.09542	0.6564586	103	1795.5	34.51	1843.4	20.06	1820.8	16.13
Z39_1	0.10787	0.00213	0.31435	0.00397	4.67382	0.09133	0.6463021	100	1763.7	35.60	1762.1	19.45	1762.6	16.34
Z39_3	0.10999	0.00121	0.31607	0.00442	4.79332	0.06904	0.9709003	98	1799.3	19.92	1770.5	21.64	1783.7	12.10
Z40_2	0.10936	0.00120	0.32073	0.00450	4.83592	0.06991	0.9705384	100	1788.8	19.96	1793.3	21.95	1791.2	12.16
Z40_3	0.10849	0.00121	0.31939	0.00450	4.77729	0.06975	0.9650028	101	1774.1	20.30	1786.8	21.98	1780.9	12.26
Z41_2	0.11086	0.00131	0.31193	0.00443	4.76781	0.07227	0.9369307	97	1813.6	21.35	1750.2	21.79	1779.2	12.72
Z43_1	0.11313	0.00181	0.21271	0.00349	3.31783	0.06396	0.8511051	67	1850.2	28.64	1243.2	18.53	1485.3	15.04
Z43_2	0.10711	0.00142	0.31585	0.00490	4.66388	0.07985	0.9061240	101	1750.7	24.03	1769.5	24.00	1760.8	14.32
Z45_3	0.09937	0.00105	0.27321	0.00395	3.74282	0.05439	0.9949022	97	1612.4	19.47	1557.1	20.00	1580.6	11.65
Z46_1	0.11004	0.00115	0.31594	0.00457	4.79313	0.06956	0.9967155	98	1800.1	18.97	1769.9	22.37	1783.7	12.19
Z47_1	0.10950	0.00116	0.31308	0.00453	4.72606	0.06891	0.9923385	98	1791.0	19.21	1755.8	22.24	1771.9	12.22
Z48_2	0.11357	0.00120	0.18227	0.00264	2.85382	0.04150	0.9960181	58	1857.3	18.92	1079.4	14.37	1369.8	10.93
Z48_3	0.10948	0.00115	0.32831	0.00475	4.95537	0.07198	0.9960330	102	1790.8	19.05	1830.2	23.04	1811.7	12.27
Z49_1	0.10682	0.00112	0.30860	0.00446	4.54468	0.06590	0.9966825	99	1745.9	19.05	1733.8	21.97	1739.2	12.07
Z50_1	0.11004	0.00116	0.28692	0.00415	4.35287	0.								

**Appendix 1** Full compilation of LA-ICP-MS zircon and monazite U–Pb age data

Black = magmatic or detrital analyses, Green = metamorphic analyses, Red = excluded analyses

Isotopic ratios <sup>1</sup>									Age estimates <sup>1</sup>					
Spot name	<sup>207</sup> Pb/ <sup>206</sup> Pb	±1σ	<sup>206</sup> Pb/ <sup>238</sup> U	±1σ	<sup>207</sup> Pb/ <sup>235</sup> U	±1σ	<i>rho</i>	Conc. (%) <sup>2</sup>	<sup>207</sup> Pb/ <sup>206</sup> Pb	±1σ	<sup>206</sup> Pb/ <sup>238</sup> U	±1σ	<sup>207</sup> Pb/ <sup>235</sup> U	±1σ
Z67_2	0.10766	0.00169	0.30874	0.00511	4.58270	0.08912	0.8510876	99	1760.2	28.38	1734.5	25.15	1746.1	16.21
Z68_1	0.18192	0.00262	0.49790	0.00672	12.49224	0.20194	0.8349205	98	2670.5	23.63	2604.8	28.92	2642.1	15.20
Z69_1	0.10892	0.00139	0.32079	0.00402	4.81595	0.06864	0.8792450	101	1781.4	23.08	1793.6	19.64	1787.7	11.98
Z69_2	0.11415	0.00166	0.33339	0.00431	5.24699	0.08269	0.8203174	99	1866.5	25.97	1854.8	20.84	1860.3	13.44
Z70_1	0.10901	0.00137	0.30807	0.00388	4.62903	0.06596	0.8838767	97	1782.9	22.81	1731.2	19.13	1754.5	11.90
Z71_1	0.11347	0.00144	0.32242	0.00400	5.04394	0.07107	0.8804843	97	1855.7	22.70	1801.6	19.50	1826.7	11.94
OG2 - Zircon: analyses used in magmatic age calculation.														
1	0.10788	0.00187	0.32342	0.00402	4.80364	0.08520	0.7007935	102	1764.0	31.35	1806.4	19.60	1785.5	14.91
2	0.10888	0.00123	0.31339	0.00398	4.70289	0.06329	0.9436863	99	1780.6	20.48	1757.4	19.54	1767.8	11.27
4	0.10936	0.00135	0.31227	0.00413	4.70665	0.06898	0.9024196	98	1788.7	22.33	1751.8	20.31	1768.4	12.27
5	0.10720	0.00124	0.31156	0.00384	4.60373	0.06146	0.9232234	100	1752.3	20.95	1748.4	18.89	1749.9	11.14
6	0.11050	0.00130	0.33562	0.00428	5.11140	0.07062	0.9230136	103	1807.6	21.16	1865.6	20.67	1838.0	11.73
7	0.10868	0.00132	0.31186	0.00399	4.67151	0.06610	0.9042095	98	1777.4	22.00	1749.8	19.63	1762.2	11.83
8	0.10793	0.00128	0.31410	0.00396	4.67274	0.06449	0.9134957	100	1764.8	21.47	1760.8	19.44	1762.4	11.54
9	0.10941	0.00149	0.31459	0.00425	4.74485	0.07503	0.8543416	99	1789.6	24.65	1763.2	20.84	1775.2	13.26
11	0.10852	0.00127	0.31471	0.00385	4.70855	0.06283	0.9167909	99	1774.6	21.20	1763.9	18.90	1768.8	11.18
12	0.10723	0.00124	0.31195	0.00372	4.61156	0.05992	0.9177703	100	1752.9	20.94	1750.3	18.29	1751.4	10.84
13	0.10977	0.00150	0.31489	0.00420	4.76406	0.07439	0.8541873	98	1795.5	24.69	1764.7	20.58	1778.6	13.10
15	0.10863	0.00148	0.31540	0.00416	4.72281	0.07280	0.8556590	99	1776.6	24.63	1767.2	20.36	1771.3	12.92
16	0.11017	0.00132	0.33061	0.00395	5.02181	0.06667	0.8999346	102	1802.2	21.57	1841.3	19.15	1823.0	11.24
17	0.10974	0.00158	0.33957	0.00444	5.13871	0.08167	0.8227070	105	1795.1	25.95	1884.6	21.38	1842.5	13.51
19	0.10884	0.00132	0.31976	0.00385	4.79830	0.06479	0.8916943	100	1780.0	22.03	1788.6	18.79	1784.6	11.35
20	0.10722	0.00133	0.32270	0.00386	4.77057	0.06503	0.8774954	103	1752.7	22.46	1802.9	18.83	1779.7	11.44
21	0.10881	0.00137	0.31237	0.00358	4.68653	0.06267	0.8570485	98	1779.6	22.90	1752.4	17.58	1764.8	11.19
22	0.11015	0.00130	0.31415	0.00381	4.77013	0.06361	0.9094791	98	1801.8	21.38	1761.1	18.71	1779.7	11.19
23	0.10802	0.00124	0.32146	0.00378	4.78718	0.06103	0.9223617	102	1766.2	20.82	1796.9	18.42	1782.7	10.71
25	0.10936	0.00133	0.32025	0.00379	4.82808	0.06426	0.8891680	100	1788.7	22.02	1791.0	18.51	1789.8	11.19
26	0.10908	0.00139	0.31808	0.00374	4.78319	0.06532	0.8610070	100	1784.0	23.04	1780.4	18.27	1782.0	11.47
27	0.10859	0.00137	0.33563	0.00389	5.02490	0.06768	0.8605100	105	1775.8	22.89	1865.6	18.78	1823.5	11.41
28	0.10849	0.00148	0.31809	0.00397	4.75700	0.07081	0.8384536	100	1774.1	24.74	1780.4	19.40	1777.3	12.49
OG2 - zircon: metamorphic age.														
30	0.09734	0.00136	0.27839	0.00324	3.73609	0.05430	0.8007720	101	1573.7	25.92	1583.3	16.33	1579.1	11.64
OG2 - zircon: excluded due to > 5% discordant.														
3	0.10645	0.00148	0.27888	0.00339	4.09320	0.06112	0.8140704	91	1739.4	25.35	1585.7	17.10	1652.9	12.18
10	0.10894	0.00138	0.33970	0.00433	5.10206	0.07377	0.8815727	106	1781.7	23.04	1885.2	20.84	1836.4	12.28
14	0.10862	0.00154	0.19490	0.00232	2.91866	0.04318	0.8045944	65	1776.3	25.70	1147.9	12.53	1386.8	11.19
18	0.10774	0.00152	0.27707	0.00325	4.11555	0.06034	0.8000487	90	1761.5	25.49	1576.6	16.40	1657.4	11.98
24	0.10973	0.00140	0.29297	0.00346	4.43159	0.06068	0.8625156	92	1794.9	23.03	1656.3	17.25	1718.3	11.34
29	0.11453	0.00146	0.36620	0.00432	5.78251	0.07900	0.8634848	107	1872.5	22.77	2011.5	20.37	1943.8	11.83
OG3 - Zircon: analyses used in magmatic age calculation.														
Z08	0.11108	0.00155	0.30747	0.00359	4.70844	0.06833	0.8045579	95	1817.1	25.13	1728.2	17.70	1768.7	12.16
Z09	0.11130	0.00148	0.30914	0.00351	4.74363	0.06541	0.8234146	95	1820.7	24.01	1736.5	17.27	1775.0	11.56
Z10	0.11209	0.00200	0.31811	0.00407	4.91554	0.08992	0.6994103	97	1833.5	31.98	1780.5	19.89	1804.9	15.44
Z14	0.10981	0.00131	0.30256	0.00331	4.58047	0.05697	0.8795900	95	1796.2	21.63	1704.0	16.39	1745.7	10.37
Z15	0.10873	0.00134	0.30465	0.00332	4.56681	0.05780	0.8210374	96	1778.2	22.31	1714.3	16.42	1743.2	10.54
Z16	0.10910	0.00147	0.30366	0.00355	4.56759	0.06487	0.8631595	96	1784.4	24.37	1709.4	17.56	1743.4	11.83
Z17	0.10998	0.00141	0.30261	0.00340	4.58804	0.06121	0.8421713	95	1799.0	23.14	1704.2	16.85	1747.1	11.12
Z18	0.10793	0.00189	0.31694	0.00410	4.71651	0.08606	0.7089673	101	1764.8	31.69	1774.7	20.08	1770.2	15.29
Z20	0.10850	0.00154	0.30529	0.00357	4.56702	0.06756	0.7904946	97	1774.4	25.74	1717.5	17.65	1743.3	12.32
3	0.10906	0.00160	0.31557	0.00443	4.74330	0.07913	0.8414871	99	1783.7	26.51	1768.1	21.73	1774.9	13.99
9	0.11064	0.00135	0.32443	0.00380	4.94861	0.06546	0.8854618	100	1809.9	22.03	1811.3	18.51	1810.6	11.17
11	0.11068	0.00147	0.31767	0.00399	4.84820	0.07167	0.8496495	98	1810.7	24.00	1778.3	19.50	1793.3	12.44
15	0.10969	0.00131	0.31646	0.00359	4.78344	0.06093	0.8906043	99	1794.2	21.58	1772.4	17.59	1782.0	10.70
20	0.10963	0.00134	0.31190	0.00358	4.71124	0.06154	0.8787096	98	1793.3	22.10	1750.1	17.59	1769.2	10.94
21	0.10941	0.00131	0.31856	0.00368	4.80505	0.06195	0.8960107	100	1789.6	21.62	1782.7	18.00	1785.8	10.84
22	0.10924	0.00127	0.30430	0.00336	4.58276	0.05585	0.9060273	96	1786.7	21.02	1712.6	16.58	1746.1	10.16
23	0.10924	0.00126	0.32632	0.00371	4.91374	0.06126	0.9119382	102	1786.7	20.97	1820.5	18.05	1804.6	10.52
25	0.10800	0.00123	0.29994	0.00322	4.46568	0.05257	0.9119502	96	1765.9	20.64	1691.0	15.99	1724.6	9.77
28	0.11006	0.00141	0.32274	0.00355	4.89743	0.06397	0.8421073	100	1800.4	23.12	1803.1	17.29	1801.8	11.01
29	0.11073	0.00139	0.30574	0.00344	4.66714	0.06124	0.8574757	95	1811.5	22.64	1719.7	16.99	1761.4	10.97
31	0.11195	0.00141	0.32904	0.00384	5.07776	0.06836	0.8668673	100	1831.3	22.58	1833.7	18.62	1832.4	11.42
33	0.10908	0.00163	0.30074	0.00386	4.52126	0.07317	0.7930901	95	1784.0	27.11	1695.0	19.11	1734.9	13.46
34	0.11043	0.00148	0.32022	0.00385	4.87506	0.07021	0.8348208	99	1806.6	24.16	1790.8	18.79	1798.0	12.13
37	0.11091	0.00175	0.31525	0.00352	4.81905	0.07531	0.7144903	97	1814.4	28.41	1766.5	17.23	1788.2	13.14
OG3 - zircon: excluded due to > 5% discordant.														
Z02	0.11194	0.00157	0.29285	0.00347	4.51919	0.06660	0.8040270	90	1831.1	25.15	1655.7	17.31	1734.5	12.25
Z04	0.10180	0.0014												

**Appendix 1** Full compilation of LA-ICP-MS zircon and monazite U–Pb age data

Black = magmatic or detrital analyses, Green = metamorphic analyses, Red = excluded analyses

Isotopic ratios <sup>1</sup>														Age estimates <sup>1</sup>					
Spot name	<sup>207</sup> Pb/ <sup>206</sup> Pb	±1σ	<sup>206</sup> Pb/ <sup>238</sup> U	±1σ	<sup>207</sup> Pb/ <sup>235</sup> U	±1σ	rho	Conc. (%) <sup>2</sup>	<sup>207</sup> Pb/ <sup>206</sup> Pb	±1σ	<sup>206</sup> Pb/ <sup>238</sup> U	±1σ	<sup>207</sup> Pb/ <sup>235</sup> U	±1σ					
10	0.11030	0.00148	0.30163	0.00393	4.58691	0.06994	0.8545011	94	1804.4	24.28	1699.4	19.46	1746.9	12.71					
12	0.11675	0.00135	0.31592	0.00359	5.08281	0.06341	0.9108848	93	1907.0	20.64	1769.8	17.56	1833.2	10.58					
13	0.10987	0.00157	0.28218	0.00352	4.27462	0.06580	0.8103788	89	1797.3	25.78	1602.3	17.72	1688.5	12.67					
14	0.10746	0.00159	0.25904	0.00319	3.83887	0.06028	0.7842491	85	1756.8	26.83	1484.9	16.32	1600.9	12.65					
17	0.10783	0.00130	0.29192	0.00332	4.33751	0.05563	0.8867591	94	1763.0	21.77	1651.1	16.55	1700.5	10.58					
18	0.11059	0.00136	0.27719	0.00313	4.22356	0.05491	0.8685484	87	1809.0	22.23	1577.2	15.81	1678.6	10.67					
26	0.11932	0.00136	0.31023	0.00339	5.10302	0.06107	0.9130935	90	1946.1	20.25	1741.8	16.66	1836.6	10.16					
27	0.10634	0.00143	0.28992	0.00306	4.25019	0.05621	0.7980645	94	1737.7	24.42	1641.1	15.30	1683.8	10.87					
32	0.14385	0.00186	0.23267	0.00256	4.61371	0.06088	0.8338256	59	2274.1	22.13	1348.5	13.36	1751.8	11.01					
35	0.14046	0.00176	0.38009	0.00439	7.35882	0.09818	0.8656917	93	2232.8	21.52	2076.7	20.49	2156.0	11.93					
38	0.11710	0.00174	0.28265	0.00322	4.56127	0.06877	0.7556029	84	1912.4	26.50	1604.7	16.16	1742.2	12.56					
39	0.13295	0.00226	0.25731	0.00332	4.71598	0.08397	0.7246515	69	2137.3	29.37	1476.1	17.04	1770.1	14.92					
40	0.11023	0.00173	0.29841	0.00333	4.53344	0.07060	0.7165624	93	1803.3	28.21	1683.4	16.55	1737.1	12.95					
OG3 - zircon: concordant analyses excluded from calculations based on interpretation of populations from probability density plot																			
Z03	0.10659	0.00143	0.30330	0.00349	4.45646	0.06233	0.8227083	98	1741.9	24.34	1707.6	17.26	1722.9	11.60					
36	0.10628	0.00129	0.30683	0.00342	4.49514	0.05750	0.8713721	99	1736.6	22.17	1725.1	16.89	1730.1	10.62					
Z01	0.11354	0.00170	0.32720	0.00413	5.12160	0.08244	0.7841595	98	1856.9	26.87	1824.8	20.06	1839.7	13.67					
6	0.14088	0.00157	0.42538	0.00473	8.26071	0.09876	0.9300801	102	2238.1	19.19	2284.8	21.39	2260.0	10.83					
16	0.11488	0.00140	0.33183	0.00379	5.25299	0.06815	0.8803681	98	1877.9	21.82	1847.2	18.32	1861.3	11.07					
19	0.11553	0.00176	0.32069	0.00360	5.10368	0.07741	0.7401222	95	1888.2	27.10	1793.1	17.59	1836.7	12.88					
24	0.11487	0.00130	0.31978	0.00347	5.06382	0.05977	0.9193337	95	1877.8	20.20	1788.7	16.95	1830.1	10.01					
5	0.17703	0.00201	0.48643	0.00545	11.87013	0.14351	0.9267220	97	2625.2	18.73	2555.2	23.65	2594.2	11.32					
Z11	0.09653	0.00111	0.26485	0.00290	3.52452	0.04250	0.9080486	97	1558.0	21.35	1514.6	14.76	1532.7	9.54					
Z07	0.11279	0.00168	0.32672	0.00398	5.08044	0.07926	0.7808266	99	1844.8	26.66	1822.5	19.35	1832.8	13.24					
MS1 - zircon: analyses used in probability density plot																			
001-2	0.19746	0.00235	0.52216	0.00591	14.21758	0.17830	0.9025229	97	2805.3	19.32	2708.3	25.04	2764.3	11.90					
001-3	0.15207	0.00187	0.43341	0.00519	9.08718	0.12103	0.8990928	98	2369.3	20.82	2321.1	23.33	2346.8	12.18					
001-5	0.12040	0.00154	0.33946	0.00412	5.63250	0.07824	0.8737375	96	1962.2	22.55	1884.1	19.82	1921.1	11.98					
001-6	0.10927	0.00159	0.29772	0.00380	4.48326	0.06952	0.8231135	94	1787.3	26.27	1680.0	18.88	1727.9	12.87					
001-8	0.12032	0.00177	0.33503	0.00452	5.55589	0.08968	0.8358200	95	1960.9	25.96	1862.7	21.84	1909.3	13.89					
001-9	0.09860	0.00145	0.26605	0.00382	3.61572	0.06158	0.8430536	95	1597.8	27.12	1520.7	19.47	1553.0	13.55					
001-11	0.15176	0.00183	0.42810	0.00550	8.95632	0.12577	0.9148924	97	2365.8	20.45	2297.2	24.81	2333.6	12.83					
001-12	0.14857	0.00167	0.43249	0.00505	8.86039	0.11057	0.9356875	99	2329.5	19.15	2316.9	22.74	2323.7	11.39					
001-15	0.14474	0.00174	0.41330	0.00459	8.24848	0.10288	0.8904105	98	2284.7	20.53	2230.0	20.95	2258.7	11.30					
001-16	0.11599	0.00153	0.35929	0.00491	5.74467	0.08976	0.8746184	104	1895.2	23.59	1978.8	23.31	1938.1	13.51					
001-17	0.11121	0.00140	0.30928	0.00384	4.74197	0.06651	0.8852200	95	1819.3	22.74	1737.2	18.92	1774.7	11.76					
001-18	0.12318	0.00141	0.36908	0.00438	6.26893	0.08013	0.9284358	101	2002.7	20.23	2025.1	20.64	2014.1	11.19					
001-19	0.15609	0.00203	0.46227	0.00621	9.94635	0.15086	0.8856977	101	2413.7	21.92	2449.6	27.36	2429.8	13.99					
001-20	0.11672	0.00131	0.33842	0.00394	5.44650	0.06772	0.9363555	99	1906.6	19.97	1879.1	19.00	1892.2	10.67					
001-21	0.18924	0.00227	0.53274	0.00660	13.89690	0.18928	0.9095820	101	2735.6	19.58	2753.0	27.76	2742.7	12.90					
001-22	0.18906	0.00226	0.53165	0.00598	13.86094	0.17359	0.8981386	101	2734.0	19.55	2748.4	25.16	2740.3	11.86					
001-25	0.14528	0.00176	0.44050	0.00545	8.82343	0.12010	0.9089605	103	2291.1	20.70	2352.9	24.37	2319.9	12.41					
001-28	0.14883	0.00213	0.42902	0.00572	8.80163	0.14054	0.8349907	99	2332.5	24.35	2301.3	25.80	2317.7	14.56					
001-29	0.11005	0.00143	0.30558	0.00409	4.63547	0.07038	0.8815418	95	1800.2	23.52	1718.9	20.21	1755.7	12.68					
001-30	0.11817	0.00152	0.34875	0.00436	5.68170	0.08077	0.8794284	100	1928.7	22.81	1928.6	20.86	1928.6	12.27					
001-31	0.16074	0.00234	0.44348	0.00613	9.82594	0.16032	0.8471744	96	2463.4	24.41	2366.2	27.39	2418.6	15.04					
001-32	0.11321	0.00133	0.33624	0.00381	5.24824	0.06581	0.9036441	101	1851.5	21.13	1868.6	18.39	1860.5	10.69					
001-34	0.14741	0.00179	0.41554	0.00501	8.44473	0.11337	0.8980748	97	2316.1	20.65	2240.2	22.81	2280.0	12.19					
001-35	0.11294	0.00148	0.34832	0.00445	5.42174	0.08022	0.8634509	104	1847.3	23.55	1926.6	21.28	1888.3	12.68					
001-36	0.15202	0.00262	0.43902	0.00674	9.19308	0.17635	0.8003154	99	2368.7	29.16	2346.2	30.18	2357.4	17.57					
001-37	0.15063	0.00201	0.42800	0.00560	8.88630	0.13256	0.8771073	98	2353.1	22.63	2296.7	25.29	2326.4	13.61					
001-38	0.16563	0.00213	0.44956	0.00586	10.26213	0.15150	0.8829474	95	2514.0	21.49	2393.3	26.07	2458.7	13.66					
001-40	0.11180	0.00160	0.33825	0.00396	5.21383	0.07558	0.8076205	103	1828.9	25.79	1878.3	19.05	1854.9	12.35					
001-41	0.18061	0.00246	0.51761	0.00710	12.88622	0.20040	0.8820303	101	2658.5	22.37	2689.0	30.16	2671.4	14.65					
001-42	0.12047	0.00200	0.37257	0.00551	6.18491	0.11472	0.7973297	104	1963.2	29.36	2041.5	25.90	2002.3	16.21					
001-44	0.11520	0.00229	0.33328	0.00492	5.29222	0.10715	0.7291243	98	1883.0	35.39	1854.3	23.79	1867.6	17.29					
001-45	0.19936	0.00292	0.54826	0.00766	15.06449	0.24577	0.8563825	100	2820.9	23.73	2817.9	31.90	2819.3	15.53					
001-47	0.13325	0.00199	0.40317	0.00557	7.40457	0.12266	0.8339958	102	2141.2	25.91	2183.6	25.59	2161.5	14.82					
001-48	0.14570	0.00193	0.44223	0.00598	8.88084	0.13688	0.8773382	103	2296.1	22.55	2360.6	26.75	2325.8	14.07					
001-49	0.14169	0.00219	0.44057	0.00624	8.60437	0.14813	0.8227080	105	2248.0	26.45	2353.2	27.92	2297.0	15.66					
001-50	0.14019	0.00181	0.41874	0.00555	8.09129	0.12160	0.8819272	101	2229.5	22.22	2254.8	25.2							

**Appendix 1** Full compilation of LA-ICP-MS zircon and monazite U–Pb age data

Black = magmatic or detrital analyses, Green = metamorphic analyses, Red = excluded analyses

Isotopic ratios <sup>1</sup>														Age estimates <sup>1</sup>					
Spot name	<sup>207</sup> Pb/ <sup>206</sup> Pb	±1σ	<sup>206</sup> Pb/ <sup>238</sup> U	±1σ	<sup>207</sup> Pb/ <sup>235</sup> U	±1σ	<i>rho</i>	Conc. (%) <sup>2</sup>	<sup>207</sup> Pb/ <sup>206</sup> Pb	±1σ	<sup>206</sup> Pb/ <sup>238</sup> U	±1σ	<sup>207</sup> Pb/ <sup>235</sup> U	±1σ					
001-72	0.12364	0.00149	0.34784	0.00417	5.92949	0.07910	0.8986641	96	2009.4	21.26	1924.3	19.95	1965.6	11.59					
001-73	0.11066	0.00176	0.33334	0.00467	5.08395	0.08877	0.8023512	102	1810.3	28.70	1854.5	22.60	1833.4	14.82					
001-74	0.11008	0.00157	0.31294	0.00422	4.74767	0.07610	0.8412929	97	1800.6	25.74	1755.2	20.73	1775.7	13.44					
001-76	0.10383	0.00179	0.31653	0.00438	4.52908	0.08391	0.7468880	105	1693.7	31.49	1772.8	21.44	1736.3	15.41					
001-77	0.13438	0.00199	0.41836	0.00571	7.74846	0.12727	0.8309508	104	2156.0	25.66	2253.0	25.96	2202.2	14.77					
001-78	0.12076	0.00229	0.35065	0.00516	5.83630	0.11449	0.7501462	98	1967.4	33.42	1937.7	24.63	1951.8	17.01					
001-79	0.15862	0.00225	0.47207	0.00643	10.32001	0.16548	0.8494527	102	2441.0	23.79	2492.6	28.17	2463.9	14.84					
001-80	0.11264	0.00158	0.32660	0.00411	5.07060	0.07695	0.8292326	99	1842.4	25.18	1821.9	19.95	1831.2	12.87					
001-82	0.13398	0.00203	0.40017	0.00554	7.38882	0.12459	0.8210264	101	2150.8	26.17	2169.8	25.49	2159.6	15.08					
001-83	0.15859	0.00320	0.47010	0.00740	10.27434	0.21559	0.7501823	102	2440.7	33.82	2484.0	32.45	2459.8	19.42					
001-84	0.18367	0.00243	0.51045	0.00672	12.92118	0.19563	0.8695264	99	2686.3	21.73	2658.5	28.70	2673.9	14.27					
001-85	0.16872	0.00242	0.46232	0.00598	10.75128	0.16711	0.8321780	96	2545.0	23.86	2449.8	26.35	2501.9	14.44					
001-86	0.16034	0.00279	0.44075	0.00641	9.73910	0.18367	0.7711632	96	2459.2	29.15	2354.0	28.68	2410.4	17.37					
001-87	0.17926	0.00396	0.50130	0.00818	12.38164	0.27924	0.7235293	99	2646.0	36.16	2619.4	35.13	2633.8	21.19					
001-88	0.14560	0.00204	0.43787	0.00531	8.78698	0.13121	0.8121234	102	2294.9	23.90	2341.1	23.81	2316.1	13.61					
001-89	0.12595	0.00195	0.37463	0.00492	6.50309	0.10717	0.7969096	100	2042.1	27.06	2051.1	23.09	2046.3	14.50					
001-90	0.11562	0.00188	0.33678	0.00460	5.36670	0.09388	0.7808107	99	1889.6	28.97	1871.2	22.17	1879.6	14.97					
001-92	0.14250	0.00213	0.41392	0.00561	8.12811	0.13371	0.8238955	99	2257.8	25.56	2232.8	25.56	2245.4	14.87					
001-93	0.11549	0.00169	0.34824	0.00476	5.54228	0.09157	0.8273010	102	1887.5	26.11	1926.2	22.77	1907.2	14.21					
001-94	0.11303	0.00218	0.33577	0.00502	5.22966	0.10680	0.7320892	101	1848.6	34.52	1866.3	24.23	1857.5	17.41					
001-95	0.11097	0.00215	0.33708	0.00501	5.15458	0.10515	0.7285993	103	1815.4	34.85	1872.6	24.14	1845.2	17.35					
001-97	0.16747	0.00262	0.46308	0.00653	10.68646	0.18734	0.8043786	97	2532.5	26.03	2453.1	28.78	2496.2	16.28					
001-98	0.16377	0.00281	0.46512	0.00640	10.49320	0.19328	0.7470265	99	2495.0	28.60	2462.1	28.18	2479.3	17.08					
001-99	0.11253	0.00193	0.33706	0.00475	5.22678	0.09603	0.7670324	102	1840.6	30.76	1872.5	22.90	1857.0	15.66					
001-100	0.12054	0.00169	0.35850	0.00470	5.95535	0.09322	0.8375426	101	1964.2	24.82	1975.1	22.29	1969.3	13.61					
001-103	0.13146	0.00192	0.40318	0.00515	7.30537	0.11485	0.8124927	103	2117.6	25.34	2183.7	23.66	2149.5	14.04					
001-104	0.13695	0.00286	0.41430	0.00647	7.81653	0.17041	0.7163220	102	2189.0	35.80	2234.6	29.50	2210.1	19.63					
001-107	0.11011	0.00200	0.33164	0.00482	5.03161	0.09804	0.7459055	103	1801.2	32.61	1846.3	23.33	1824.7	16.50					
001-108	0.11224	0.00144	0.34926	0.00432	5.40293	0.07686	0.8694885	105	1836.0	23.05	1931.0	20.65	1885.3	12.19					
001-109	0.11759	0.00302	0.35241	0.00597	5.70981	0.14718	0.6572021	101	1919.9	45.40	1946.1	28.44	1932.9	22.27					
001-110	0.16013	0.00297	0.47010	0.00700	10.37187	0.20684	0.7466728	101	2457.0	31.01	2484.0	30.69	2468.5	18.47					
001-111	0.12251	0.00250	0.37717	0.00577	6.36634	0.13688	0.7115223	104	1993.1	35.84	2063.1	27.00	2027.6	18.87					
001-112	0.11793	0.00221	0.36283	0.00518	5.89634	0.11500	0.7320003	104	1925.1	33.15	1995.6	24.52	1960.7	16.93					
001-113	0.18497	0.00282	0.51204	0.00691	13.05033	0.21991	0.8008491	99	2698.0	24.94	2665.3	29.46	2683.3	15.89					
001-114	0.15694	0.00289	0.45526	0.00650	9.84710	0.18403	0.7639652	100	2423.0	30.94	2418.6	28.80	2420.6	17.23					
001-115	0.13478	0.00292	0.39347	0.00616	7.30264	0.16670	0.6858251	99	2161.2	37.26	2138.9	28.49	2149.1	20.39					
001-116	0.17509	0.00288	0.50095	0.00612	12.08999	0.20357	0.7255531	100	2606.9	27.16	2617.9	26.28	2611.4	15.79					
001-117	0.17668	0.00374	0.50351	0.00801	12.25309	0.27229	0.7158769	100	2622.0	34.77	2628.8	34.33	2624.0	20.86					
001-118	0.17415	0.00262	0.49478	0.00672	11.87227	0.19906	0.8100408	100	2597.9	24.90	2591.3	28.99	2594.4	15.70					
001-119	0.11235	0.00195	0.34050	0.00484	5.26995	0.09930	0.7543719	103	1837.7	31.15	1889.1	23.27	1864.0	16.08					
001-120	0.11222	0.00195	0.33364	0.00466	5.15905	0.09599	0.7506743	101	1835.6	31.12	1856.0	22.52	1845.9	15.83					
001-7	0.11246	0.00158	0.36082	0.00455	5.59328	0.08405	0.8391694	108	1839.6	25.24	1986.1	21.53	1915.1	12.94					
001-13	0.10952	0.00130	0.29380	0.00346	4.43712	0.05733	0.9114724	93	1791.4	21.41	1660.5	17.23	1719.3	10.71					
001-14	0.13267	0.00156	0.35333	0.00423	6.46426	0.08408	0.9204198	91	2133.7	20.45	1950.5	20.14	2041.0	11.44					
001-23	0.13863	0.00191	0.36447	0.00519	6.96387	0.11418	0.8684927	91	2210.2	23.76	2003.3	24.51	2106.8	14.56					
001-24	0.13505	0.00159	0.35941	0.00438	6.69249	0.08893	0.9171141	91	2164.7	20.35	1979.4	20.78	2071.6	11.74					
001-27	0.18371	0.00257	0.47308	0.00652	11.97921	0.19163	0.8615444	93	2686.6	22.90	2497.0	28.55	2602.8	14.99					
001-33	0.10969	0.00161	0.35106	0.00410	5.30967	0.07838	0.7911608	108	1794.2	26.51	1939.6	19.54	1870.4	12.61					
001-39	0.13853	0.00190	0.36577	0.00490	6.98360	0.10854	0.8619410	91	2209.0	23.54	2009.5	23.13	2109.3	13.80					
001-46	0.15803	0.00261	0.42009	0.00532	9.15138	0.15145	0.7652205	93	2434.7	27.69	2260.9	24.13	2353.3	15.15					
001-60	0.15265	0.00231	0.39897	0.00556	8.39398	0.14180	0.8249474	91	2375.9	25.57	2164.3	25.60	2274.5	15.33					
001-62	0.11200	0.00160	0.35506	0.00434	5.48202	0.08247	0.8125173	107	1832.2	25.73	1958.7	20.66	1897.8	12.92					
001-64	0.10890	0.00157	0.29007	0.00390	4.35387	0.06992	0.8372127	92	1781.0	26.08	1641.9	19.48	1703.6	13.26					
001-75	0.14312	0.00243	0.37859	0.00533	7.46704	0.13511	0.7780707	91	2265.3	28.97	2069.7	24.91	2169.0	16.20					
001-91	0.13147	0.00213	0.35225	0.00472	6.38193	0.10922	0.7829623	92	2117.7	28.07	1945.3	22.52	2029.8	15.02					
001-102	0.13673	0.00281	0.36832	0.00556	6.93712	0.15055	0.6955814	92	2186.2	35.28	2021.5	26.19	2103.4	19.26					
001-106	0.10822	0.00171	0.33783	0.00416	5.03916	0.08300	0.7476101	106	1769.6	28.68	1876.2	20.02	1825.9	13.96					
MS1 - zircon: excluded due to > 10% discordant.																			
001-1	0.26850	0.00343	0.43585	0.00551	16.12867	0.22914	0.												



**Appendix 1** Full compilation of LA-ICP-MS zircon and monazite U–Pb age data

Black = magmatic or detrital analyses, Green = metamorphic analyses, Red = excluded analyses

Isotopic ratios <sup>1</sup>										Age estimates <sup>1</sup>					
Spot name	<sup>207</sup> Pb/ <sup>206</sup> Pb	±1σ	<sup>206</sup> Pb/ <sup>238</sup> U	±1σ	<sup>207</sup> Pb/ <sup>235</sup> U	±1σ	<i>rho</i>	Conc. (%) <sup>2</sup>	<sup>207</sup> Pb/ <sup>206</sup> Pb	±1σ	<sup>206</sup> Pb/ <sup>238</sup> U	±1σ	<sup>207</sup> Pb/ <sup>235</sup> U	±1σ	
16	0.12467	0.00168	0.36963	0.00452	6.35309	0.09191	0.8452661	100	2024.1	23.74	2027.7	21.29	2025.8	12.69	
17	0.12520	0.00208	0.36862	0.00483	6.36384	0.10991	0.7586654	100	2031.6	29.11	2022.9	22.77	2027.3	15.15	
20	0.11288	0.00160	0.31724	0.00390	4.93683	0.07431	0.8167282	96	1846.2	25.46	1776.2	19.06	1808.6	12.71	
22	0.11313	0.00141	0.33025	0.00404	5.15043	0.07118	0.8851646	99	1850.3	22.35	1839.6	19.59	1844.5	11.75	
23	0.11655	0.00150	0.33983	0.00424	5.46048	0.07793	0.8742392	99	1904.0	22.89	1885.8	20.39	1894.4	12.25	
25	0.15661	0.00197	0.44824	0.00548	9.67735	0.13419	0.8816704	99	2419.4	21.19	2387.4	24.39	2404.6	12.76	
1b	0.11225	0.00148	0.32963	0.00443	5.10302	0.07813	0.8777815	100	1836.2	23.68	1836.6	21.49	1836.6	13.00	
3b	0.12658	0.00201	0.35097	0.00500	6.12734	0.10645	0.8200235	95	2051.1	27.83	1939.2	23.84	1994.1	15.17	
5b	0.11397	0.00138	0.33582	0.00418	5.27803	0.07264	0.9044108	100	1863.7	21.68	1866.5	20.19	1865.3	11.75	
6b	0.11123	0.00135	0.31796	0.00399	4.87704	0.06737	0.9084273	98	1819.5	21.80	1779.8	19.53	1798.3	11.64	
8b	0.11287	0.00138	0.32171	0.00408	5.00677	0.07051	0.9005390	97	1846.1	21.97	1798.1	19.91	1820.5	11.92	
9b	0.11090	0.00132	0.31368	0.00385	4.79711	0.06469	0.9101572	97	1814.1	21.47	1758.8	18.89	1784.4	11.33	
10b	0.11272	0.00143	0.32516	0.00397	5.05340	0.07053	0.8747887	98	1843.7	22.73	1814.9	19.32	1828.3	11.83	
14b	0.11240	0.00172	0.32501	0.00434	5.03674	0.08380	0.8025988	99	1838.5	27.52	1814.1	21.12	1825.5	14.09	
16b	0.11329	0.00154	0.31581	0.00397	4.93279	0.07345	0.8442391	95	1852.8	24.37	1769.2	19.45	1807.9	12.57	
17b	0.11477	0.00157	0.33161	0.00422	5.24716	0.07955	0.8394000	98	1876.3	24.43	1846.2	20.43	1860.3	12.93	
18b	0.12071	0.00195	0.34305	0.00461	5.70874	0.09910	0.7741232	97	1966.7	28.56	1901.3	22.13	1932.7	15.00	
20b	0.11205	0.00179	0.33060	0.00434	5.10710	0.08756	0.7656944	100	1833.0	28.66	1841.3	21.03	1837.3	14.56	
21b	0.11269	0.00146	0.32230	0.00412	5.00633	0.07326	0.8735534	98	1843.2	23.34	1800.9	20.09	1820.4	12.39	
22b	0.13624	0.00160	0.38848	0.00468	7.29549	0.09591	0.9163635	97	2179.9	20.31	2115.8	21.74	2148.3	11.74	
24b	0.11272	0.00160	0.32149	0.00407	4.99549	0.07666	0.8249663	97	1843.7	25.52	1797.0	19.87	1818.6	12.98	
26b	0.11002	0.00171	0.30217	0.00391	4.58084	0.07602	0.7797272	95	1799.7	27.98	1702.1	19.35	1745.8	13.83	
27b	0.11194	0.00169	0.33302	0.00438	5.13637	0.08444	0.8000403	101	1831.2	27.08	1853.0	21.20	1842.1	13.97	
28b	0.11255	0.00144	0.32548	0.00391	5.04846	0.06957	0.8717448	99	1841.0	22.98	1816.4	19.03	1827.5	11.68	
31b	0.11682	0.00129	0.33989	0.00422	5.47170	0.07062	0.9619857	99	1908.1	19.64	1886.1	20.31	1896.2	11.08	
32b	0.11000	0.00124	0.33018	0.00409	5.00529	0.06538	0.9483243	102	1799.3	20.46	1839.2	19.83	1820.2	11.05	
34b	0.11159	0.00133	0.33817	0.00432	5.20060	0.07155	0.9285226	103	1825.4	21.40	1877.8	20.82	1852.7	11.72	
36b	0.10699	0.00118	0.31279	0.00378	4.61304	0.05825	0.9570403	100	1748.8	19.94	1754.4	18.56	1751.6	10.54	
37b	0.11249	0.00135	0.31830	0.00409	4.93450	0.06886	0.9207947	97	1840.0	21.59	1781.4	20.01	1808.2	11.78	
38b	0.10895	0.00120	0.31330	0.00382	4.70478	0.06001	0.9559136	99	1781.9	19.99	1756.9	18.76	1768.1	10.68	
39b	0.11061	0.00153	0.32413	0.00427	4.94055	0.07591	0.8574029	100	1809.5	24.96	1809.9	20.79	1809.2	12.97	
41b	0.10920	0.00141	0.33304	0.00439	5.01259	0.07491	0.8820445	104	1786.0	23.43	1853.1	21.22	1821.5	12.65	
42b	0.17173	0.00198	0.47347	0.00591	11.20608	0.14941	0.9362009	97	2574.5	19.11	2498.7	25.85	2540.4	12.43	
44b	0.13884	0.00181	0.38800	0.00510	7.42553	0.11011	0.8864192	96	2212.7	22.47	2113.5	23.70	2164.1	13.27	
45b	0.11163	0.00154	0.33216	0.00446	5.11089	0.08036	0.8539730	101	1826.1	24.75	1848.8	21.60	1837.9	13.35	
46b	0.13299	0.00188	0.37408	0.00511	6.85777	0.11010	0.8508480	96	2137.9	24.58	2048.6	23.99	2093.2	14.23	
47b	0.11252	0.00147	0.32644	0.00426	5.06311	0.07538	0.8765314	99	1840.4	23.47	1821.1	20.69	1829.9	12.62	
48b	0.11140	0.00198	0.31642	0.00424	4.85782	0.08845	0.7359453	97	1822.3	31.91	1772.2	20.76	1795.0	15.33	
49b	0.11641	0.00155	0.36780	0.00486	5.90302	0.09028	0.8639871	106	1901.8	23.77	2019.0	22.92	1961.7	13.28	
51b	0.11353	0.00174	0.34353	0.00478	5.37716	0.09241	0.8096498	103	1856.7	27.40	1903.6	22.93	1881.2	14.71	
52b	0.11025	0.00171	0.31673	0.00440	4.81534	0.08359	0.8002692	98	1803.6	27.94	1773.7	21.56	1787.6	14.60	
53b	0.13720	0.00187	0.40939	0.00531	7.74299	0.11899	0.8440254	101	2192.1	23.53	2212.1	24.30	2201.6	13.82	
54b	0.10995	0.00223	0.32888	0.00504	4.98439	0.10767	0.7094313	102	1798.5	36.52	1832.9	24.44	1816.7	18.27	
11b	0.11059	0.00136	0.29732	0.00363	4.53316	0.06233	0.8879457	93	1809.1	22.20	1678.0	18.05	1737.1	11.44	
13b	0.10987	0.00138	0.29410	0.00355	4.45438	0.06151	0.8741277	92	1797.2	22.66	1662.0	17.71	1722.5	11.45	
25b	0.13630	0.00187	0.37661	0.00474	7.07542	0.10566	0.8428070	94	2180.7	23.73	2060.4	22.18	2121.0	13.29	
4b	0.11070	0.00136	0.35467	0.00436	5.41409	0.07390	0.9006231	108	1811.0	22.10	1956.9	20.77	1887.1	11.70	
30b	0.15513	0.00243	0.41421	0.00553	8.85432	0.14980	0.7891289	93	2403.3	26.41	2234.1	25.20	2323.1	15.44	
MS2 - zircon: used for metamorphic age calculation.															
7	0.09542	0.00135	0.27117	0.00350	3.56677	0.05527	0.8329368	101	1536.4	26.30	1546.7	17.76	1542.2	12.29	
9	0.09788	0.00152	0.27929	0.00363	3.76881	0.06259	0.7826193	100	1584.2	28.71	1587.8	18.31	1586.1	13.33	
11	0.09748	0.00122	0.28312	0.00344	3.80501	0.05227	0.8844865	102	1576.5	23.26	1607.1	17.27	1593.8	11.05	
12	0.09691	0.00137	0.28188	0.00359	3.76593	0.05775	0.8305207	102	1565.4	26.25	1600.8	18.07	1585.5	12.30	
13	0.09750	0.00127	0.27877	0.00333	3.74732	0.05234	0.8552346	101	1576.8	24.24	1585.2	16.78	1581.5	11.19	
14	0.09626	0.00126	0.27054	0.00325	3.59031	0.05036	0.8564423	99	1552.8	24.34	1543.5	16.49	1547.4	11.14	
24	0.09614	0.00121	0.26762	0.00320	3.54698	0.04841	0.8761028	99	1550.5	23.52	1528.7	16.28	1537.8	10.81	
26	0.09520	0.00115	0.27598	0.00331	3.62217	0.04834	0.8986955	103	1532.0	22.67	1571.1	16.70	1554.4	10.62	
27	0.09716	0.00142	0.26195	0.00302	3.50879	0.05225	0.7742115	96	1570.3	27.20	1499.8	15.43	1529.2	11.77	
28	0.09684	0.00117	0.26895	0.00315	3.59073	0.04712	0.8925170	98	1564.1	22.56	1535.5	15.99	1547.5	10.42	
33	0.09770	0.00121	0.26859	0.00307	3.61788	0.04734	0.8735232	97	1580.6	22.96	1533.6	15.59	1553.5	10.41	
2b	0.09852	0.00119	0.26489												

**Appendix 1** Full compilation of LA-ICP-MS zircon and monazite U–Pb age data

Black = magmatic or detrital analyses, Green = metamorphic analyses, Red = excluded analyses

Isotopic ratios <sup>1</sup>														Age estimates <sup>1</sup>					
Spot name	<sup>207</sup> Pb/ <sup>206</sup> Pb	±1σ	<sup>206</sup> Pb/ <sup>238</sup> U	±1σ	<sup>207</sup> Pb/ <sup>235</sup> U	±1σ	rho	Conc. (%) <sup>2</sup>	<sup>207</sup> Pb/ <sup>206</sup> Pb	±1σ	<sup>206</sup> Pb/ <sup>238</sup> U	±1σ	<sup>207</sup> Pb/ <sup>235</sup> U	±1σ					
18	0.10730	0.00136	0.31939	0.00379	4.72473	0.06461	0.8677511	102	1754.0	23.03	1786.8	18.53	1771.6	11.46					
19	0.10743	0.00178	0.31752	0.00410	4.70334	0.08127	0.7472895	101	1756.3	29.96	1777.6	20.08	1767.8	14.47					
21	0.11169	0.00137	0.31751	0.00378	4.88905	0.06497	0.8958721	97	1827.1	22.07	1777.6	18.49	1800.4	11.20					
12b	0.10759	0.00147	0.30458	0.00384	4.51845	0.06744	0.8446986	97	1759.1	24.64	1714.0	18.97	1734.4	12.41					
43b	0.10722	0.00131	0.30869	0.00402	4.56240	0.06523	0.9108555	99	1752.7	22.06	1734.3	19.80	1742.4	11.91					
MF1 - Zircon: analyses used in magmatic age calculation.																			
Z01	0.11002	0.00143	4.82905	0.06740	0.31829	0.00377	0.8486335	99	1799.6	23.40	1781.4	18.45	1790.0	11.74					
Z02	0.10774	0.00164	4.38837	0.06890	0.29537	0.00354	0.7633451	95	1761.5	27.45	1668.3	17.61	1710.2	12.98					
Z03	0.10833	0.00166	4.65367	0.07323	0.31152	0.00368	0.7507035	99	1771.4	27.70	1748.2	18.11	1759.0	13.15					
Z04	0.11002	0.00157	4.68336	0.07115	0.30872	0.00376	0.8016886	96	1799.7	25.80	1734.4	18.51	1764.3	12.71					
Z05	0.10688	0.00165	4.61159	0.07377	0.31283	0.00374	0.7473673	100	1746.9	27.98	1754.6	18.34	1751.4	13.35					
Z06	0.10964	0.00165	4.68638	0.07340	0.30995	0.00369	0.7601095	97	1793.4	27.22	1740.4	18.15	1764.8	13.11					
Z07	0.10880	0.00178	4.70832	0.07908	0.31378	0.00381	0.7229346	99	1779.4	29.67	1759.3	18.69	1768.7	14.07					
Z09	0.10977	0.00162	4.75347	0.07308	0.31407	0.00371	0.7683510	98	1795.6	26.68	1760.7	18.20	1776.7	12.90					
Z10	0.11123	0.00204	5.02256	0.09669	0.32773	0.00449	0.7116619	100	1819.5	32.96	1827.4	21.78	1823.1	16.30					
Z11	0.10844	0.00166	4.67529	0.07503	0.31270	0.00391	0.7791525	99	1773.4	27.77	1754.0	19.18	1762.8	13.42					
Z12	0.10919	0.00149	4.76779	0.06902	0.31672	0.00380	0.8288010	99	1785.8	24.78	1773.7	18.59	1779.2	12.15					
Z13	0.10830	0.00158	4.60063	0.07038	0.30812	0.00376	0.7976934	98	1770.9	26.50	1731.4	18.53	1749.4	12.76					
Z14	0.11027	0.00174	4.76694	0.07547	0.31362	0.00368	0.7411556	97	1803.9	28.34	1758.5	18.05	1779.1	13.29					
Z15	0.11046	0.00147	4.81620	0.06585	0.31632	0.00356	0.8231369	98	1807.0	23.95	1771.7	17.44	1787.7	11.50					
Z16	0.10708	0.00140	4.51105	0.06102	0.30561	0.00345	0.8345589	98	1750.4	23.60	1719.1	17.05	1733.0	11.24					
Z17	0.10721	0.00164	4.55027	0.07198	0.30784	0.00375	0.7700724	99	1752.6	27.69	1730.1	18.48	1740.2	13.17					
Z19	0.10681	0.00129	4.72876	0.06226	0.32117	0.00377	0.8915476	103	1745.7	21.92	1795.5	18.41	1772.4	11.03					
Z18	0.10913	0.00145	4.60461	0.06336	0.30610	0.00347	0.8238418	96	1784.9	24.09	1721.5	17.14	1750.1	11.48					
Z20	0.10773	0.00142	4.67458	0.06502	0.31474	0.00368	0.8406041	100	1761.4	23.78	1764.0	18.04	1762.7	11.63					
Z21	0.10863	0.00131	4.64436	0.06096	0.31013	0.00364	0.8942079	98	1776.5	21.82	1741.4	17.89	1757.3	10.97					
Z22	0.10830	0.00137	4.55649	0.06197	0.30520	0.00362	0.8721134	97	1770.9	22.88	1717.0	17.87	1741.3	11.32					
Z23	0.11021	0.00186	4.94651	0.08597	0.32576	0.00412	0.7276984	101	1802.9	30.40	1817.8	20.02	1810.2	14.68					
Z25	0.10622	0.00137	4.59171	0.06157	0.30414	0.00354	0.8680306	#REF!	1733.4	23.22	1703.1	17.60	1747.8	11.18					
Z26	0.10951	0.00137	4.42239	0.06054	0.30237	0.00356	0.8600544	98	1773.8	30.93	1774.7	18.32	1716.5	11.34					
Z27	0.10610	0.00135	4.73852	0.08058	0.31694	0.00374	0.6939210	100	1771.9	26.85	1810.5	18.87	1774.1	14.26					
Z28	0.10847	0.00185	4.84353	0.07437	0.32425	0.00388	0.7793202	102	1772.6	29.37	1733.4	17.86	1792.5	12.92					
Z29	0.10836	0.00161	4.61160	0.07519	0.30851	0.00363	0.7216538	98	1776.4	24.84	1700.4	17.43	1751.4	13.61					
Z30	0.10840	0.00176	4.52004	0.06463	0.30183	0.00352	0.8156210	96	1735.4	23.43	1600.9	16.55	1734.7	11.89					
1	0.10825	0.00127	4.45736	0.05837	0.29872	0.00356	0.9100677	95	1770.1	21.37	1685.0	17.65	1723.1	10.86					
2	0.10844	0.00126	4.61105	0.06034	0.30846	0.00372	0.9215918	98	1773.2	21.09	1733.1	18.31	1751.3	10.92					
4	0.10776	0.00132	4.46132	0.06503	0.30022	0.00400	0.9140501	96	1761.9	22.20	1692.4	19.85	1723.8	12.09					
5	0.10783	0.00119	4.75568	0.06041	0.31992	0.00387	0.9522991	101	1763.0	19.96	1789.3	18.91	1777.1	10.66					
6	0.10840	0.00142	4.75189	0.07224	0.31788	0.00428	0.8856644	100	1772.7	23.72	1779.4	20.94	1776.4	12.75					
7	0.11065	0.00123	4.76262	0.06125	0.31223	0.00382	0.9513243	97	1810.0	20.01	1751.7	18.78	1778.3	10.79					
9	0.10830	0.00118	4.56486	0.05869	0.30575	0.00377	0.9590433	97	1770.9	19.80	1719.7	18.63	1742.9	10.71					
11	0.10947	0.00124	4.75477	0.06369	0.31511	0.00397	0.9405602	99	1790.5	20.50	1765.8	19.47	1776.9	11.24					
12	0.10797	0.00123	4.57776	0.06100	0.30755	0.00385	0.9394381	98	1765.5	20.56	1728.6	18.96	1745.2	11.10					
15	0.10939	0.00125	4.71844	0.06302	0.31287	0.00390	0.9332988	98	1789.3	20.75	1754.8	19.16	1770.5	11.19					
16	0.10762	0.00124	4.92316	0.06631	0.33186	0.00416	0.9306863	105	1759.5	20.92	1847.4	20.12	1806.2	11.37					
17	0.10783	0.00122	4.67091	0.06271	0.31425	0.00397	0.9409790	100	1763.1	20.53	1761.6	19.46	1762.0	11.23					
18	0.10806	0.00156	4.73355	0.07677	0.31784	0.00425	0.8244718	101	1766.9	26.25	1779.2	20.80	1773.2	13.59					
21	0.10868	0.00117	4.58187	0.05583	0.30578	0.00359	0.9635195	97	1777.4	19.62	1719.9	17.70	1746.0	10.16					
23	0.10849	0.00132	4.63222	0.06471	0.30967	0.00395	0.9130945	98	1774.2	22.09	1739.1	19.43	1755.1	11.67					
24	0.10582	0.00121	4.38235	0.05342	0.30036	0.00338	0.9231617	98	1728.6	20.79	1693.1	16.75	1709.0	10.08					
27	0.10849	0.00128	4.60464	0.05692	0.30782	0.00342	0.8987938	98	1774.2	21.41	1730.0	16.86	1750.1	10.31					
28	0.10853	0.00118	4.60808	0.05554	0.30796	0.00355	0.9564190	98	1774.8	19.75	1730.7	17.49	1750.7	10.06					
29	0.10834	0.00118	4.61671	0.05657	0.30910	0.00362	0.9557757	98	1771.6	19.75	1736.3	17.84	1752.3	10.23					
32	0.10863	0.00127	4.52304	0.05723	0.30199	0.00349	0.9133549	96	1776.6	21.23	1701.2	17.27	1735.2	10.52					
33	0.10863	0.00144	4.49870	0.06541	0.30037	0.00376	0.8609426	95	1776.5	24.07	1693.2	18.63	1730.7	12.08					
35	0.10869	0.00123	4.55163	0.05620	0.30374	0.00349	0.9305808	96	1777.5	20.58	1709.8	17.26	1740.5	10.28					
36	0.10940	0.00124	4.54677	0.05594	0.30144	0.00345	0.9302480	95	1789.5	20.53	1698.5	17.09	1739.6	10.24					
42	0.10682	0.00124	4.61226	0.05860	0.31319	0.00368	0.9248176	101	1745.8	20.96	1756.4	18.05	1751.5	10.60					
43	0.10737	0.00117	4.47523	0.05359	0.30230	0.00346	0.9558056	97	1755.2	19.71	1702.7	17.12	1726.4	9.94					
44	0.10797	0.00135	4.86922	0.06756	0.32713	0.00405	0.8922867	103	1765.5	22.55	1824.5	19.69	1796.9	11.69					
45	0.10744	0.00118	4.64251																

**Appendix 1** Full compilation of LA-ICP-MS zircon and monazite U–Pb age data

Black = magmatic or detrital analyses, Green = metamorphic analyses, Red = excluded analyses

Isotopic ratios <sup>1</sup>									Age estimates <sup>1</sup>					
Spot name	<sup>207</sup> Pb/ <sup>206</sup> Pb	±1σ	<sup>206</sup> Pb/ <sup>238</sup> U	±1σ	<sup>207</sup> Pb/ <sup>235</sup> U	±1σ	rho	Conc. (%) <sup>2</sup>	<sup>207</sup> Pb/ <sup>206</sup> Pb	±1σ	<sup>206</sup> Pb/ <sup>238</sup> U	±1σ	<sup>207</sup> Pb/ <sup>235</sup> U	±1σ
66	0.10745	0.00122	4.65987	0.05725	0.31452	0.00359	0.9290616	100	1756.7	20.54	1762.9	17.60	1760.1	10.27
67	0.10944	0.00135	4.54493	0.06068	0.30121	0.00356	0.8852425	95	1790.1	22.36	1697.3	17.65	1739.2	11.11
68	0.10810	0.00124	4.48215	0.05593	0.30074	0.00346	0.9219906	96	1767.5	20.92	1695.0	17.12	1727.7	10.36
MF1 - zircon: excluded due to > 5% discordant.														
Z08	0.11160	0.00184	4.46167	0.07459	0.28998	0.00343	0.7075268	90	1825.7	29.58	1641.4	17.12	1723.9	13.87
Z24	0.10862	0.00149	4.12752	0.05666	0.28189	0.00329	0.8502152	92	1791.3	22.63	1711.8	17.50	1659.8	11.22
3	0.10861	0.00130	5.15155	0.06859	0.34408	0.00416	0.9080526	107	1776.1	21.71	1906.3	19.95	1844.7	11.32
10	0.10778	0.00122	5.02552	0.06518	0.33821	0.00412	0.9392418	107	1762.2	20.43	1878.0	19.85	1823.6	10.98
19	0.10828	0.00125	5.20977	0.07090	0.34905	0.00442	0.9304798	109	1770.6	21.03	1930.0	21.11	1854.2	11.59
20	0.10737	0.00122	4.93730	0.06708	0.33359	0.00426	0.9399246	106	1755.2	20.62	1855.7	20.60	1808.7	11.47
25	0.10650	0.00120	4.21667	0.05098	0.28715	0.00323	0.9303867	94	1740.4	20.54	1627.3	16.17	1677.3	9.92
26	0.10827	0.00117	4.42149	0.05276	0.29618	0.00340	0.9620265	94	1770.5	19.57	1672.3	16.89	1716.4	9.88
30	0.10996	0.00120	4.54625	0.05495	0.29988	0.00346	0.9545841	94	1798.6	19.67	1690.7	17.17	1739.5	10.06
37	0.10858	0.00139	4.41191	0.05878	0.29470	0.00337	0.8583152	94	1775.6	23.16	1665.0	16.79	1714.6	11.03
38	0.10920	0.00126	4.46950	0.05520	0.29686	0.00337	0.9191747	94	1786.1	20.88	1675.7	16.76	1725.3	10.25
39	0.10953	0.00126	4.37877	0.05427	0.28997	0.00331	0.9210161	92	1791.6	20.82	1641.4	16.55	1708.3	10.25
47	0.10828	0.00125	4.94040	0.05863	0.33091	0.00358	0.9116232	105	1770.6	20.89	1842.8	17.35	1809.2	10.02
53	0.11062	0.00135	4.45206	0.05492	0.29193	0.00315	0.8747064	91	1809.6	21.94	1651.2	15.72	1722.1	10.23
MF1 - zircon: analyses excluded from calculations due to ambiguous spot location														
13	0.10655	0.00119	4.62679	0.06083	0.31499	0.00391	0.9461621	89	1617.3	20.28	1442.8	14.46	1770.5	11.19
14	0.10743	0.00120	4.94369	0.06529	0.33384	0.00418	0.9441521	101	1741.4	20.34	1765.2	19.17	1806.2	11.37
22	0.09963	0.00109	3.44587	0.04080	0.25083	0.00281	0.9470242	99	1788.8	20.05	1769.7	17.95	1709.0	10.08
31	0.10936	0.00121	4.76315	0.05843	0.31591	0.00367	0.9412798	91	1779.7	20.18	1619.1	16.45	1730.7	12.08
34	0.10882	0.00121	4.28368	0.05228	0.28552	0.00328	0.9703401	100	1735.9	19.26	1741.0	17.02	1739.6	10.24
41	0.10624	0.00112	4.54165	0.05223	0.31006	0.00346	0.8761989	101	1757.0	22.17	1779.8	17.20	1726.4	9.94
52	0.10747	0.00132	4.71160	0.05953	0.31796	0.00352	0.9113066	106	1730.5	21.05	1837.3	17.81	1782.8	12.00
64	0.10593	0.00122	4.81668	0.05882	0.32978	0.00367	0.9480745	106	1756.2	20.24	1857.0	20.18	1760.1	10.27
MF2 - Zircon: analyses used in magmatic age calculation.														
Z03_1	0.10923	0.00130	0.31708	0.00431	4.77395	0.07013	0.9252998	99	1786.5	21.60	1775.5	21.09	1780.3	12.33
Z05_1	0.10834	0.00134	0.30889	0.00417	4.61307	0.06860	0.9078166	98	1771.6	22.39	1735.2	20.54	1751.6	12.41
Z06_2	0.10744	0.00132	0.29601	0.00388	4.38385	0.06322	0.9089218	95	1756.5	22.21	1671.5	19.28	1709.3	11.92
Z08_1	0.10944	0.00129	0.31506	0.00416	4.75292	0.06752	0.9294545	99	1790.0	21.31	1765.5	20.39	1776.6	11.92
Z12_1	0.10873	0.00126	0.32433	0.00412	4.86198	0.06629	0.9316982	102	1778.2	21.02	1810.8	20.07	1795.7	11.48
Z14_1	0.10710	0.00136	0.29899	0.00398	4.41494	0.06569	0.8946475	96	1750.6	23.01	1686.3	19.74	1715.1	12.32
Z14_2	0.10682	0.00154	0.29290	0.00369	4.31366	0.06675	0.8141448	95	1745.8	26.07	1656.0	18.41	1696.0	12.76
Z16_1	0.10941	0.00121	0.30404	0.00390	4.58549	0.06133	0.9590620	96	1789.5	19.97	1711.3	19.27	1746.6	11.15
Z17_1	0.11075	0.00131	0.30434	0.00403	4.64617	0.06643	0.9261405	95	1811.8	21.26	1712.8	19.94	1757.6	11.95
Z18_1	0.10981	0.00121	0.31421	0.00397	4.75643	0.06274	0.9578712	98	1796.2	19.91	1761.4	19.47	1777.2	11.07
Z21_1	0.11017	0.00127	0.32591	0.00405	4.95003	0.06630	0.9277942	101	1802.2	20.84	1818.5	19.71	1810.8	11.31
Z22_1	0.11004	0.00134	0.31778	0.00398	4.82115	0.06703	0.9008198	99	1800.1	22.02	1778.9	19.49	1788.6	11.69
Z24_1	0.10732	0.00141	0.29359	0.00404	4.34347	0.06820	0.8763802	95	1754.5	23.86	1659.5	20.12	1701.7	12.96
Z25_2	0.10790	0.00121	0.30385	0.00406	4.52090	0.06339	0.9529518	97	1764.2	20.23	1710.4	20.09	1734.8	11.66
Z29_1	0.10801	0.00127	0.30997	0.00421	4.61713	0.06712	0.9342919	99	1766.1	21.37	1740.6	20.72	1752.4	12.13
Z30_1	0.11063	0.00137	0.30981	0.00439	4.72614	0.07330	0.9136328	96	1809.9	22.26	1739.8	21.59	1771.9	13.00
Z31_2	0.11036	0.00141	0.30549	0.00437	4.64839	0.07413	0.8970011	95	1805.3	23.10	1718.5	21.57	1758.0	13.33
1	0.11060	0.00148	0.31730	0.00415	4.83712	0.07347	0.8611025	98	1809.3	24.13	1776.5	20.31	1791.4	12.78
2	0.11007	0.00144	0.32299	0.00410	4.89952	0.07151	0.8697242	100	1800.5	23.63	1804.3	19.99	1802.2	12.31
4	0.10952	0.00132	0.33118	0.00402	4.99978	0.06713	0.9040578	103	1791.5	21.77	1844.1	19.46	1819.3	11.36
6	0.11151	0.00147	0.31982	0.00412	4.91807	0.07304	0.8674122	98	1824.2	23.72	1788.9	20.12	1805.4	12.53
7	0.10496	0.00132	0.31399	0.00378	4.54347	0.06236	0.8771170	103	1713.7	22.95	1760.3	18.53	1739.0	11.42
10	0.11114	0.00136	0.31408	0.00391	4.81218	0.06681	0.8966787	97	1818.1	22.07	1760.8	19.19	1787.0	11.67
11	0.10586	0.00133	0.30257	0.00369	4.41593	0.06128	0.8788281	99	1729.3	22.90	1704.0	18.26	1715.3	11.49
12	0.10945	0.00158	0.30185	0.00387	4.55567	0.07136	0.8184972	95	1790.3	26.07	1700.5	19.15	1741.2	13.04
13	0.11055	0.00182	0.32435	0.00428	4.94197	0.08601	0.7581952	100	1808.5	29.65	1810.9	20.81	1809.5	14.70
15	0.11041	0.00178	0.33683	0.00437	5.12673	0.08720	0.7627718	104	1806.1	29.01	1871.4	21.08	1840.5	14.45
16	0.11038	0.00179	0.31495	0.00408	4.79311	0.08170	0.7600005	98	1805.7	29.22	1765.0	20.02	1783.7	14.32
17	0.11194	0.00178	0.31819	0.00410	4.90991	0.08230	0.7687250	97	1831.1	28.56	1780.9	20.07	1804.0	14.14
18	0.10930	0.00143	0.33752	0.00409	5.08630	0.07233	0.8521328	105	1787.8	23.76	1874.7	19.71	1833.8	12.07
19	0.10850	0.00171	0.31561	0.00403	4.72059	0.07802	0.7725821	100	1774.3	28.47	1768.2	19.75	1770.9	13.85
22	0.10844	0.00135	0.30789	0.00364	4.60220	0.06206	0.8767172	98	1773.3	22.62	1730.3	17.92	1749.7	11.25
24	0.10667	0.00137	0.31936	0.00368	4.69543	0.06336	0.8539403	102	1743.3	23.21	1786.6	18.00	1766.4	11.30
26	0.11065	0.00130	0.31803	0.00373	4.85049	0.06236	0.9122634	98	1810.1	21.14	1780.1	18.25	1793.7	10.82
27	0.10852	0.00140	0.30808	0.00381	4.60767	0.06567	0.8677124	98	1774.7	23.47	1731.2	18.76	1750.7	11.89
30	0.10927	0.00129	0.31301	0.00370	4.71438	0.06152	0.9058406	98	1787.2	21.47	1755.5	18.19	1769.8	10.93
31	0.10829	0.00153	0.31325	0.00387	4.67322	0.07068	0.8168448							



**Appendix 1** Full compilation of LA-ICP-MS zircon and monazite U–Pb age data

Black = magmatic or detrital analyses, Green = metamorphic analyses, Red = excluded analyses

Isotopic ratios <sup>1</sup>														Age estimates <sup>1</sup>					
Spot name	<sup>207</sup> Pb/ <sup>206</sup> Pb	±1σ	<sup>206</sup> Pb/ <sup>238</sup> U	±1σ	<sup>207</sup> Pb/ <sup>235</sup> U	±1σ	rho	Conc. (%) <sup>2</sup>	<sup>207</sup> Pb/ <sup>206</sup> Pb	±1σ	<sup>206</sup> Pb/ <sup>238</sup> U	±1σ	<sup>207</sup> Pb/ <sup>235</sup> U	±1σ					
Z11_1	0.10831	0.00129	0.26312	0.00352	3.92909	0.05686	0.9244298	85	1771.1	21.61	1505.8	17.97	1619.7	11.71					
Z11_2	0.10736	0.00127	0.28289	0.00372	4.18702	0.05957	0.9242783	92	1755.0	21.51	1605.9	18.72	1671.5	11.66					
Z13_1	0.10897	0.00122	0.29355	0.00378	4.41056	0.05980	0.9497346	93	1782.2	20.31	1659.3	18.86	1714.3	11.22					
Z15_1	0.10712	0.00125	0.28482	0.00369	4.20534	0.05866	0.9287845	92	1751.0	21.06	1615.6	18.54	1675.1	11.44					
Z19_1	0.10672	0.00122	0.27492	0.00342	4.04512	0.05389	0.9337766	90	1744.1	20.88	1565.7	17.28	1643.3	10.85					
Z20_1	0.10654	0.00124	0.26858	0.00349	3.94459	0.05508	0.9305928	88	1741.1	21.19	1533.6	17.72	1622.9	11.31					
Z20_2	0.10996	0.00125	0.29758	0.00382	4.51074	0.06174	0.9378660	93	1798.7	20.63	1679.3	19.00	1733.0	11.38					
Z23_1	0.11011	0.00142	0.27822	0.00345	4.22361	0.06023	0.8695643	88	1801.2	23.25	1582.4	17.38	1678.6	11.71					
Z24_2	0.11192	0.00165	0.23433	0.00298	3.61591	0.05745	0.8004163	74	1830.7	26.52	1357.2	15.58	1553.0	12.64					
Z25_1	0.10963	0.00137	0.21626	0.00306	3.26925	0.05079	0.9107835	70	1793.2	22.62	1262.1	16.23	1473.8	12.08					
Z26_1	0.10836	0.00121	0.26369	0.00349	3.94037	0.05478	0.9520215	85	1771.9	20.33	1508.7	17.82	1622.0	11.26					
Z27_1	0.10831	0.00121	0.27292	0.00362	4.07698	0.05675	0.9528969	88	1771.2	20.32	1555.6	18.34	1649.7	11.35					
Z27_2	0.10931	0.00122	0.29351	0.00394	4.42487	0.06214	0.9558783	93	1788.0	20.16	1659.1	19.66	1717.0	11.63					
Z28_1	0.10713	0.00126	0.27802	0.00369	4.10782	0.05881	0.9270658	90	1751.1	21.37	1581.4	18.59	1655.9	11.69					
Z31_1	0.10800	0.00127	0.28436	0.00392	4.23478	0.06258	0.9328522	91	1765.8	21.33	1613.3	19.69	1680.8	12.14					
3	0.11236	0.00145	0.23512	0.00304	3.64251	0.05365	0.8778393	74	1838.0	23.18	1361.3	15.88	1558.9	11.73					
5	0.10624	0.00150	0.28262	0.00371	4.13829	0.06501	0.8356257	92	1735.8	25.69	1604.6	18.65	1661.9	12.85					
8	0.10279	0.00154	0.27536	0.00325	3.90140	0.05952	0.7736420	94	1675.0	27.40	1568.0	16.45	1614.0	12.33					
9	0.10184	0.00137	0.26158	0.00314	3.67239	0.05299	0.8319170	90	1658.0	24.80	1497.9	16.06	1565.4	11.52					
14	0.11277	0.00158	0.29697	0.00375	4.61714	0.07027	0.8297013	91	1844.5	25.20	1676.3	18.64	1752.4	12.70					
21	0.11939	0.00172	0.32195	0.00418	5.29882	0.08358	0.8231228	92	1947.1	25.57	1799.2	20.40	1868.7	13.47					
23	0.10964	0.00143	0.25139	0.00295	3.79896	0.05256	0.8481709	81	1793.5	23.56	1445.6	15.20	1592.5	11.12					
25	0.10875	0.00131	0.27159	0.00332	4.07109	0.05526	0.9005838	87	1778.6	21.88	1548.9	16.84	1648.5	11.07					
29	0.10592	0.00158	0.27233	0.00320	3.97687	0.06015	0.7768913	90	1730.3	27.05	1552.6	16.20	1629.5	12.27					
MF2 - zircon: analyses excluded from calculations due to being interpreted as inherited.																			
20	0.11338	0.00160	0.33885	0.00414	5.29619	0.07930	0.8159870	101	1854.3	25.28	1881.2	19.93	1868.2	12.79					
28	0.12039	0.00187	0.36229	0.00477	6.01256	0.10041	0.7883961	102	1962.0	27.51	1993.0	22.59	1977.7	14.54					
Z13_2	0.11338	0.00146	0.34009	0.00467	5.31617	0.08212	0.8889410	102	1854.3	23.17	1887.1	22.47	1871.5	13.20					
DT1 - monazite: analyses used in weighted average age calculation.																			
BO10_01A	0.09736	0.00112	0.27412	0.00408	3.67796	0.05750	0.9520475	100	1574.1	21.38	1561.7	20.62	1566.6	12.48					
BO10_01B	0.09747	0.00113	0.27433	0.00409	3.68474	0.05803	0.9466824	100	1576.2	21.59	1562.7	20.70	1568.1	12.58					
BO10_01C	0.09693	0.00118	0.28070	0.00415	3.74989	0.05997	0.9244643	99	1565.9	22.73	1594.9	20.87	1582.1	12.82					
BO10_02A	0.09871	0.00116	0.29074	0.00430	3.95506	0.06231	0.9387696	99	1599.9	21.80	1645.2	21.46	1625.0	12.77					
BO10_02B	0.09742	0.00114	0.28402	0.00421	3.81325	0.06027	0.9378368	99	1575.4	21.81	1611.6	21.16	1595.5	12.71					
BO10_02C	0.09727	0.00123	0.28574	0.00424	3.83017	0.06255	0.9086268	99	1572.4	23.58	1620.2	21.25	1599.1	13.15					
BO10_03A	0.09767	0.00117	0.27741	0.00414	3.73404	0.05978	0.9321832	100	1580.2	22.32	1578.3	20.89	1578.7	12.82					
BO10_03B	0.09719	0.00122	0.28246	0.00423	3.78285	0.06214	0.9116566	99	1570.8	23.42	1603.8	21.28	1589.1	13.19					
BO10_03C	0.09783	0.00129	0.27994	0.00429	3.77435	0.06458	0.8956462	100	1583.2	24.51	1591.0	21.59	1587.3	13.74					
BO10_04A	0.09779	0.00125	0.28386	0.00427	3.82541	0.06347	0.9066364	99	1582.4	23.81	1610.8	21.45	1598.1	13.36					
BO10_04B	0.09948	0.00139	0.27710	0.00412	3.79876	0.06507	0.8680040	101	1614.3	25.83	1576.8	20.81	1592.5	13.77					
BO10_5A	0.09902	0.00143	0.27213	0.00415	3.71355	0.06654	0.8510952	101	1605.7	26.67	1551.6	21.04	1574.3	14.33					
BO10_5B	0.09765	0.00147	0.27597	0.00422	3.71366	0.06812	0.8336391	100	1579.7	27.88	1571.0	21.33	1574.3	14.67					
BO10_6A	0.09789	0.00155	0.28236	0.00435	3.80902	0.07212	0.8136612	99	1584.2	29.24	1603.2	21.87	1594.7	15.23					
BO10_6B	0.09771	0.00150	0.27820	0.00436	3.74589	0.07049	0.8328310	100	1581.0	28.47	1582.3	21.97	1581.2	15.08					
BO10_7A	0.09614	0.00147	0.28285	0.00439	3.74729	0.07004	0.8303850	98	1550.5	28.47	1605.7	22.08	1581.5	14.98					
BO10_7B	0.09865	0.00154	0.27704	0.00428	3.76646	0.07092	0.8204761	101	1598.8	28.85	1576.5	21.59	1585.6	15.11					
BO10_8A	0.09802	0.00167	0.29224	0.00459	3.94764	0.07874	0.7874358	98	1586.8	31.45	1652.7	22.87	1623.5	16.16					
BO10_8B	0.09816	0.00180	0.28641	0.00445	3.87459	0.08061	0.7468075	99	1589.4	33.86	1623.5	22.29	1608.4	16.79					
BO10_9A	0.09777	0.00162	0.27977	0.00442	3.76903	0.07442	0.8001309	100	1582.1	30.63	1590.2	22.26	1586.2	15.84					
BO10_9B	0.09765	0.00167	0.27320	0.00425	3.67655	0.07342	0.7789944	101	1579.8	31.75	1557.0	21.51	1566.3	15.94					
BO10_9C	0.09688	0.00172	0.27726	0.00433	3.70192	0.07568	0.7639177	100	1565.0	32.93	1577.6	21.86	1571.8	16.34					
BO10_10A	0.09906	0.00174	0.27412	0.00429	3.74263	0.07615	0.7691722	101	1606.6	32.36	1561.7	21.71	1580.5	16.30					
BO10_10B	0.09734	0.00165	0.27273	0.00427	3.65834	0.07294	0.7852596	100	1573.7	31.38	1554.7	21.64	1562.3	15.90					
DT1 - monazite: analysis excluded from calculations due to analytical error.																			
BO10_04C	0.10362	0.55142	-0.07035	0.13622	16.84387	error	error	-622	1690.0	2945.11	-470.3	944.61	2926.0	error					
OG3 - monazite: analyses used in weighted average age calculation.																			
M101	0.09649	0.00100	0.26937	0.00394	3.58148	0.05244	0.9989571	99	1557.3	19.34	1537.6	20.00	1545.4	11.62					
M102	0.09633	0.00101	0.27330	0.00401	3.62762	0.05341	0.9965611	100	1554.2	19.48	1557.5	20.29	1555.6	11.72					
M203	0.09873	0.00103	0.28953	0.00424	3.93894	0.05793	0.9957450	102	1600.2	19.42	1639.2	21.18	1621.7	11.91					
M204	0.09530	0.00103	0.27309	0.00403	3.58668	0.05372	0.9852714	101	1534.0	20.12	1556.5	20.39	1546.6	11.89					
M305	0.09482	0.00100	0.27402	0.00401	3.58041	0.05289	0.9906524	102	1524.5	19.79	1561.2	20.30	1545.2	11.72					
M406	0.09719	0.00103	0.27592	0.00404	3.69538	0.05464	0.9902540	100	1570.9	19.74	1570.8	20.40	1570.4	11.82					
M507	0.09614	0.00102	0.27923	0.00409	3.69924	0.05478	0.9891262	102	1550.4	19.86	1587.5	20.59	1571.2	11.84					
M508	0.09638	0.00103	0.26902	0.00393	3.57295	0.05289	0.9868732	99	1555.2	19.91	1535								