DATA REPOSITORY ITEM: METAMORPHIC-AGE DATA AND TEXTURES

This data repository contains details of pressure (*P*) - temperature (*T*) and age methods and data (Tables DR1, DR2, DR3). Figures DR1 – DR5 illustrate representative textural relationships. Additional descriptive material is given by Berman et al. (2002a) for sample # 3 and by Berman et al. (2002b) for samples # 14 and 15.

Thermobarometric methods

Selected mineral compositions for pressure (*P*) – temperature (*T*) estimates were determined using a Cameca SX-50 electron microprobe located at Geological Survey of Canada (Ottawa), employing four spectrometers, a range of natural and synthetic standards, and matrix corrections after Pouchou and Pichoir (1985). Analytical conditions for all phases were 20 kV accelerating voltage, with a 10 nA beam current. A 10 µm beam spot was used for feldspars and a more focused beam (~3 µm) for all other minerals. Pressure-temperature estimates were obtained using the TWEEQU software (Berman 1991; http://gsc.nrcan.gc.ca/sw/twq_e.php) with its version 1.02 database.

U-Pb SHRIMP analytical methods

U-Pb analyses of monazite were performed *in situ* with selected targets cored (3 mm-diameter) from thin sections and mounted in epoxy together with pre-polished laboratory standard monazites (GSC monazite z3345; $^{207}Pb/^{206}Pb$ TIMS age = 1821.0 ± 0.6 Ma (2s); GSC monazite z2908, $^{207}Pb/^{206}Pb$ TIMS age = 1795 ± 2 Ma (2 s); Stern and Berman (2000). Details of these procedures are given by Rayner and Stern (2002), and analytical protocols for monazite are described in detail by Stern and Sanborn (1998) and Stern and Berman (2000). Analyses were conducted using an O^{2-} primary beam, with a spot sizes between 7 and 15 µm. Ten masses were sequentially measured over 7 scans with a single electron multiplier and a pulse counting system with deadtime of 24 ns. Moderate energy filtering was used to minimize a known isobar at mass 204. Off-line data processing was accomplished using customized in-house software (Stern, 1997). Pb/U ratios were calibrated with GSC monazite standard z3345. Since all the analyses in this study were concordant to slightly discordant, ages are based on weighted mean $^{207}Pb/^{206}Pb$ of individual analyses. Age estimates and error calculations were calculated using Isoplot/Ex version 2.2 (Ludwig, 2002).

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Table DR1. PRESSURE-TEMPERATURE AND U-Pb RESULTS

#	Domain	Collection #	Lithology	Age ± 2s (Ma)*	n	MSWD	Prob	*P-T*†	Assemblage§	Latitude	Longtitude
1	1a	BLB-96-007	metapelite	1881 ± 7	13	0.96	0.49	10.2-660	GBKPQ	63.46232	-94.25231
2	1a	BLB-96-012	metapelite	1883 ± 7	4	0.87	0.46	10.3-690	GBKPQ	63.28653	-95.25902
3	1a	LA-10-10	paragneiss	1928 ± 46	2	0.11	0.74	11.0-750	GBKPQ	62.34687	-99.77054
4	1a	LAAT-96-139	MacQuoid dyke					10.1-715	GCHPQ	63.36758	-95.13330
5	1a	TXS-98-018	MacQuoid dyke					10.8-715	GHBPQ	63.56223	-93.42717
6	1b	SMA-80-168	gabbro					12.0-735	GCHPQ	64.29666	-95.26945
7	1b	LUNAN-001	gabbro					11.7-790	GCHPQ	64.76666	-92.76666
8	1b	BLB-96-038	amphibolite					9.8-785	GHPQ	64.74333	-90.74873
9	1b	JD-64-470	amphibolite					8.9-790	GHBPQ	64.22722	-91.10000
10	1b	HVA-DB-00-S017	tonalite	1917 ± 3						64.11300	-91.73500
11	1c	TXU-92-185	metapelite	1894 ± 14#	3	0.76	0.47	4.2-630	GBSPQ	63.56338	-92.33043
12	1c	BLB-99-032	metapelite	1895 ± 12	8	1.4	0.22		GBSPQ	63.56065	-92.33513
13	1c	BLB-99-17	metapelite	1893 ± 7	1			5.4-590	GBPQ	63.32690	-92.57965
14	1c	TXD-87-047	metapelite	1884 ± 6	6	0.54	0.8	6.3-600	GBKPQ	63.02443	-90.96860
15	1c	TX-87-082	metapelite	1889 ± 7	7	0.61	0.72	5.5-575	GBKPQ	63.10687	-91.23992
16	1c	TXA-87-177	paragneiss	1910 ± 12	2			6.9-800	GBSPQ	63.93798	-90.86231
17	1c	TXT-87-061	paragneiss	1886 ± 73	2			5.9-805	GBSPQ	63.64862	-91.32794
18	1c	TXM-87-016	paragneiss					7.2-740	GBOPQ	63.67105	-90.70917

Note: # = sample number; n = number of analyses; MSWD = mean squares of weighted deviates; Prob = probability of fit

**In-situ* monazite ages, except for #10 (TIMS zircon); 2σ uncertainties of average, except for #12 (1 σ uncertainty of spot analysis).

†*P* (kbar) - *T* (^{o}C) calculated with version 1.02 of TWQ software (Berman, 1991), with hornblende-plagioclase temperature from Holland & Blundy (1994); estimated uncertainties are ± 1 kbar, 50 ^{o}C.

§Assemblage used to calculate *P-T*: G=garnet; B=biotite; S=sillimanite; K=kyanite; Q = quartz; H=hornblende; O=orthopyroxene; C=clinopyroxene; P=plagioclase.

#This sample contains zircon with high Th/U (0.3-0.7), 2.7-2.3 Ga detrital cores, and low Th/U (<0.005) metamorphic rims (Fig. DR5)

TABLE DR2. THERMOBAROMETRIC DATA AND MINERAL COMPOSITIONS

Sample	#1: 96-BLB-007			#2: 96-BLB-012			#3: La-10-10				#4: LAAT-96-139				#5: TXS-98-018				#6: SMA-80-168			
P-T[*]	10.2 kbar - 660°C			10.3 kbar - 690°C			11.0 kbar - 750°C				10.1 kbar - 715°C				10.8 kbar - 715°C				12.2 kbar - 735°C			
	Grt[r]	Bt	Plg	Grt[r]	Bt	Plg	Grt[r]	Bt	Plg	Opx[f]	Grt	Cpx	Hbl	Plg	Grt	Bt	Hbl	Plg	Grt	Bt	Hbl	Plg
SiO_2	37.27	36.40	60.83	38.02	35.01	61.93	37.99	37.23	59.60	49.70	37.82	51.19	41.09	61.57	37.60	36.68	41.45	62.50	37.70	34.50	38.80	63.30
TiO_2	nd	1.43	nd	nd	1.40	nd	0.02	6.85	nd	0.10	nd	0.05	1.75	nd	nd	2.81	1.37	nd	nd	3.60	1.50	nd
Al_2O_3	21.41	20.17	24.27	21.25	20.34	23.28	21.37	13.90	24.80	3.20	20.83	1.09	10.65	22.85	21.40	16.21	12.26	23.90	20.80	14.60	12.40	22.50
FeO	31.12	17.15	0.00	33.55	18.78	0.09	30.02	17.53	0.10	28.80	28.76	14.70	22.74	0.56	28.00	19.84	20.62	0.20	26.00	27.10	25.20	0.10
MgO	3.68	11.37	nd	3.86	10.85	nd	6.88	10.79	nd	17.00	1.92	10.45	6.88	nd	2.90	10.49	7.61	nd	1.00	5.70	4.20	nd
MnO	1.80	0.07	nd	0.40	0.07	nd	1.12	0.10	nd	0.30	0.97	0.17	0.18	nd	1.00	0.10	0.00	nd	2.80	0.30	0.30	nd
CaO	4.49	0.00	5.22	3.43	0.02	4.71	1.73	0.00	6.60	0.10	9.33	22.05	11.41	4.82	8.90	0.73	11.95	5.10	12.00	0.00	11.80	3.90
Na_2O	nd	0.22	8.71	nd	0.27	8.90	nd	0.00	7.80	nd	nd	0.27	1.18	9.19	nd	0.31	1.37	8.70	nd	0.00	1.60	9.20
K_2O	nd	9.29	0.07	nd	8.74	0.10	nd	9.44	0.20	nd	nd	0.01	1.98	0.35	nd	9.04	1.37	0.30	nd	10.10	2.10	0.30
Total	99.77	96.10	99.10	100.50	95.47	99.01	99.13	95.83	99.10	99.20	99.63	99.98	97.86	99.34	99.80	96.21	98.01	100.70	100.30	95.90	97.90	99.30

Sample	#7: LUNAN-001			#8: BLB-96-038			#9: JD-64-470				#11 92-TXU-185			#13: BLB-99-17			#14: 87-TXD-047			
P-T[*]	11.7 kbar - 790°C			9.8 kbar - 785°C			8.0 kbar -740°C				4.0 kbar - 630°C			5.4 kbar - 590°C			6.3 kbar - 600°C			
	Grt	Opx	Plg	Grt	Hbl	Plg	Grt	Bt	Hbl	Plg	Grt	Bt	Plg	Grt	Bt	Plg	Grt	Bt	Ms	Plg
SiO_2	38.87	52.21	56.85	37.26	41.35	60.43	37.50	34.10	40.60	60.80	37.05	31.20	62.34	37.20	35.52	61.10	36.90	35.58	45.49	61.50
TiO_2	nd	0.04	nd	0.06	1.21	nd	nd	5.30	0.51	nd	nd	2.12	0.02	nd	1.73	nd	nd	1.78	0.64	nd
Al_2O_3	21.60	3.81	27.17	21.17	10.95	24.64	20.60	13.60	11.89	25.30	20.04	21.76	23.32	21.30	19.13	24.10	21.10	19.04	37.18	24.00
FeO	22.68	17.81	0.11	30.03	23.07	0.17	31.70	27.50	26.15	0.30	37.72	21.84	0.16	37.30	21.47	0.00	33.90	18.10	0.85	0.08
MgO	9.98	24.89	nd	2.57	6.28	nd	1.70	5.30	4.72	nd	2.64	9.55	nd	2.60	9.16	nd	3.60	11.30	0.64	nd
MnO	1.14	0.17	nd	1.48	0.40	nd	1.50	0.10	0.31	nd	1.26	0.07	nd	0.50	0.00	nd	1.30	0.10	0.00	nd
CaO	6.16	0.26	9.00	7.26	11.36	6.13	7.30	0.40	11.38	6.70	1.09	0.14	4.46	2.00	0.00	5.90	2.20	0.00	0.00	5.30
Na_2O	nd	nd	6.42	nd	1.35	8.10	nd	0.10	1.33	7.80	nd	0.25	9.28	nd	0.31	7.90	nd	0.10	0.00	8.40
K_2O	nd	nd	0.05	nd	1.18	0.41	nd	8.40	1.33	0.10	nd	9.20	0.10	nd	8.55	0.10	nd	9.52	10.55	0.10
Total	100.43	99.19	99.60	99.83	97.13	99.88	100.30	94.80	98.23	101.00	99.80	96.14	99.68	100.90	95.86	99.10	99.00	95.53	95.34	99.38

Sample	#15: 87-TX-082				#16: 87-TXA-177			#17: 87-TXT-061			#18: 87-TXM-016			
P-T[*]	5.5 kbar - 575°C				6.9 kbar - 800°C			5.6 kbar -790°C			7.2 kbar - 740°C			
	Grt	Bt	Ms	Plg	Grt	Bt	Plg	Grt	Bt	Plg	Grt	Opx	Bt	Plg
SiO_2	37.10	36.62	46.65	63.20	39.00	36.60	63.50	38.10	36.04	58.30	38.00	49.70	36.92	60.00
TiO_2	nd	1.95	0.41	nd	nd	4.00	nd	nd	4.93	nd	nd	0.10	4.41	nd
Al_2O_3	21.20	18.98	36.96	23.00	22.00	16.20	23.30	21.70	17.25	25.50	21.40	3.20	16.00	25.00
FeO	35.00	18.06	0.82	0.13	28.90	15.10	0.11	31.00	15.40	0.30	31.60	26.30	16.62	0.10
MgO	3.50	10.98	0.41	nd	8.80	13.60	nd	7.10	12.63	nd	6.80	19.50	13.23	nd
MnO	2.30	0.10	0.10	nd	0.70	0.00	nd	0.50	0.00	nd	1.00	0.30	0.00	nd
CaO	1.60	0.00	0.00	4.30	0.90	0.00	4.20	1.30	0.00	7.50	1.40	0.10	0.10	6.00
Na_2O	nd	0.31	1.12	9.20	nd	0.10	9.00	nd	0.00	7.10	nd	nd	0.00	7.90
K_2O	nd	9.03	9.29	0.10	nd	9.70	0.40	nd	9.65	0.40	nd	nd	9.13	0.20
Total	100.70	96.02	95.76	99.93	100.30	95.30	100.51	99.70	95.89	99.10	100.20	99.20	96.41	99.20

Note : mineral abbreviations from Kretz (1983); r = high-Ca rim; f = fictitious composition used to calculate minimum *P* (see Berman et al., 2002a for discussion).

[*] P-T determined using assemblages listed in Table DR1; estimated uncertainties are ± 1 kbar, 50 °C.

TABLE DR3. *IN SITU* SHRIMP U/PB GEOCHRONOLOGICAL DATA

Spot	Loc	Th/U	^{204}Pb/^{206}Pb	±^{204}Pb/^{206}Pb	f^{206}	^{208}Pb/^{206}Pb	±^{208}Pb/^{206}Pb	^{206}Pb/^{238}U	±^{206}Pb/^{238}U	^{207}Pb/^{235}U	±^{207}Pb/^{235}U	^{207}Pb/^{206}Pb	±^{207}Pb/^{206}Pb	Apparent Ages (Ma) ^{206}Pb/^{238}U	Apparent Ages (Ma) ±^{206}Pb/^{238}U	Apparent Ages (Ma) ^{207}Pb/^{206}Pb	Apparent Ages (Ma) ±^{207}Pb/^{206}Pb	Conc (%)
#1: BLB-96-007, Lab #z8171 - IP320 (1.3%)																		
21.1.1	I	5.92	8.955E-05	1.145E-05	1.37E-03	1.732	0.015	0.344	0.010	5.38	0.17	0.1136	0.0008	1904	48	1857	12	103
21.1.2	I	5.87	5.034E-05	2.288E-05	7.70E-04	1.692	0.011	0.329	0.005	5.23	0.11	0.1152	0.0013	1834	26	1883	21	97
21.1.3	I	5.84	4.334E-05	9.370E-06	6.60E-04	1.688	0.046	0.315	0.032	5.03	0.54	0.1157	0.0023	1766	160	1890	35	93
21.1.4	I	5.65	1.406E-05	8.820E-06	2.20E-04	1.658	0.016	0.316	0.006	5.09	0.12	0.1166	0.0012	1772	30	1905	18	93
4.1.1	I	4.13	1.393E-04	1.311E-05	2.14E-03	1.184	0.007	0.334	0.006	5.27	0.10	0.1145	0.0008	1858	28	1872	12	99
4.1.2	I	4.16	7.672E-05	2.503E-05	1.18E-03	1.217	0.006	0.323	0.005	5.06	0.10	0.1135	0.0011	1806	27	1857	18	97
4.2.1	I	4.22	7.554E-05	9.440E-06	1.16E-03	1.158	0.006	0.329	0.005	5.22	0.10	0.1151	0.0009	1833	26	1881	14	98
4.2.2	I	4.31	1.657E-04	2.752E-05	2.56E-03	1.206	0.007	0.334	0.007	5.31	0.12	0.1152	0.0008	1860	33	1883	13	99
4.2.3	I	4.27	1.041E-04	1.622E-05	1.60E-03	1.228	0.006	0.320	0.006	5.06	0.11	0.1147	0.0007	1790	30	1876	11	95
4.2.4	I	4.26	8.968E-05	1.942E-05	1.38E-03	1.237	0.005	0.319	0.006	5.07	0.10	0.1152	0.0006	1785	28	1883	10	95
4.3.1	I	4.28	8.191E-05	1.136E-05	1.26E-03	1.202	0.008	0.337	0.005	5.35	0.09	0.1152	0.0006	1871	26	1883	9	99
4.3.2	I	4.32	5.744E-05	9.380E-06	8.80E-04	1.197	0.007	0.333	0.005	5.34	0.09	0.1163	0.0007	1854	26	1899	10	98
4.3.3	I	4.22	5.841E-05	1.316E-05	9.00E-04	1.191	0.009	0.323	0.007	5.16	0.13	0.1156	0.0015	1806	33	1890	23	96
#2: BLB-96-012, Lab #z8513 - IP156 (1.0%)																		
4.1	I	8.01	3.203E-05	7.020E-06	4.90E-04	2.217	0.006	0.342	0.007	5.41	0.11	0.1147	0.0006	1896	32	1882	9	101
4.2	I	7.01	7.357E-04	1.036E-04	1.14E-02	1.968	0.010	0.345	0.007	5.38	0.14	0.1132	0.0017	1910	33	1858	27	103
5.1	I	7.42	3.313E-05	7.780E-06	5.10E-04	2.020	0.006	0.298	0.005	4.69	0.08	0.1143	0.0005	1680	24	1876	7	90
6.1	I	6.33	2.437E-05	7.680E-06	3.80E-04	1.745	0.006	0.289	0.004	4.60	0.06	0.1153	0.0004	1637	19	1891	6	87
6.2	I	6.14	1.929E-05	7.500E-06	3.00E-04	1.696	0.005	0.291	0.004	4.61	0.06	0.1147	0.0004	1649	19	1881	6	88
#3: 97LA-10-10, Lab #z6858 - IP238 (1.6%)																		
20.1	I	11.21	2.330E-04	6.472E-05	4.38E-03	3.101	0.050	0.336	0.006	5.43	0.17	0.1174	0.0027	1866	30	1916	41	97
21.1	I	11.10	2.263E-05	2.354E-05	4.30E-04	2.975	0.021	0.336	0.007	5.49	0.15	0.1185	0.0019	1866	33	1933	28	97
10.1	I	30.07	1.310E-05	2.005E-05	2.50E-04	8.708	0.113	0.472	0.010	10.88	0.30	0.1672	0.0025	2492	45	2529	26	99
18.1	Plg	25.65	1.000E-05	6.232E-05	1.90E-04	7.652	0.048	0.457	0.008	10.58	0.21	0.1680	0.0016	2426	33	2538	16	96
13.1	I	26.11	1.587E-05	1.281E-05	3.00E-04	7.296	0.037	0.488	0.008	11.30	0.22	0.1681	0.0013	2561	35	2538	13	101
#11: 92-TXU-185, Lab #z8170 - IP320 (1.3%)																		
9.1	Grt	7.87	1.449E-04	2.361E-05	2.22E-03	2.206	0.010	0.334	0.006	5.34	0.10	0.1158	0.0008	1860	27	1893	12	98
9.2.1	Grt	5.61	5.110E-05	1.179E-05	7.80E-04	1.597	0.005	0.321	0.005	5.08	0.09	0.1149	0.0004	1793	26	1878	7	96
9.2.2	Grt	5.73	3.023E-05	7.600E-06	4.60E-04	1.608	0.008	0.312	0.005	4.92	0.09	0.1144	0.0007	1750	25	1871	11	94
9.2.3	Grt	5.60	1.000E-05	4.740E-06	1.50E-04	1.584	0.007	0.312	0.005	4.93	0.10	0.1147	0.0009	1750	27	1875	14	93
9.3	Grt	7.61	7.176E-05	9.160E-06	1.10E-03	2.145	0.009	0.349	0.006	5.62	0.11	0.1166	0.0008	1931	28	1905	12	101
9.4	Grt	5.58	6.646E-05	1.241E-05	1.02E-03	1.563	0.009	0.333	0.005	5.30	0.10	0.1153	0.0008	1854	26	1884	12	98
20Z.1	det	0.68	2.954E-04	1.615E-04	5.12E-03	0.200	0.033	0.436	0.018	9.12	0.47	0.1518	0.0038	2332	83	2367	43	98.5
25Z.1	det	0.30	6.554E-05	6.488E-05	1.14E-03	0.090	0.004	0.447	0.027	9.12	0.61	0.1480	0.0035	2382	121	2323	41	103
37Z.3	det	0.27	1.020E-04	1.844E-04	1.77E-03	0.093	0.009	0.432	0.026	9.30	0.68	0.1562	0.0052	2314	119	2414	58	95.8
28Z.1	det	0.19	1.466E-04	6.371E-05	2.54E-03	0.055	0.003	0.437	0.015	10.39	0.38	0.1725	0.0021	2337	66	2582	20	90.5
1Z.1	det	0.14	1.141E-04	4.203E-05	1.98E-03	0.039	0.002	0.518	0.018	12.16	0.45	0.1704	0.0014	2689	78	2561	14	105
7Z.1	det	0.66	4.299E-04	2.507E-04	7.45E-03	0.177	0.011	0.496	0.028	12.45	0.82	0.1820	0.0052	2598	120	2671	48	97.3
#12: 99-BLB-032, Lab #z8169 - IP320 (1.3%)																		
1.1	Grt	3.98	8.188E-05	9.990E-06	1.26E-03	1.120	0.008	0.332	0.005	5.25	0.10	0.1148	0.0008	1847	26	1876	13	98
1.2	Grt	3.51	9.047E-05	1.100E-05	1.39E-03	0.975	0.006	0.347	0.006	5.55	0.09	0.1159	0.0005	1921	26	1894	8	101
3.1	Grt	4.96	1.255E-04	1.288E-05	1.92E-03	1.441	0.010	0.331	0.005	5.34	0.09	0.1171	0.0007	1843	25	1912	11	96
10.1	I	5.16	5.726E-05	6.610E-06	8.80E-04	1.463	0.010	0.334	0.006	5.33	0.11	0.1156	0.0008	1860	29	1890	12	98
10.2	I	4.95	5.985E-05	6.520E-06	9.20E-04	1.397	0.008	0.339	0.006	5.36	0.10	0.1149	0.0008	1881	29	1878	12	100
10.3	I	4.85	3.821E-05	9.900E-06	5.90E-04	1.350	0.014	0.325	0.006	5.23	0.11	0.1169	0.0012	1812	28	1909	18	95
12.1	I	2.04	3.987E-05	5.050E-06	6.10E-04	0.633	0.003	0.321	0.005	5.16	0.09	0.1164	0.0005	1797	26	1902	8	95

TABLE DR3 (continued)

Spot	Loc	Th/U	^{204}Pb/^{206}Pb	±^{204}Pb/^{206}Pb	f^{206}	^{208}Pb/^{206}Pb	±^{208}Pb/^{206}Pb	^{206}Pb/^{238}U	±^{206}Pb/^{238}U	^{207}Pb/^{235}U	±^{207}Pb/^{235}U	^{207}Pb/^{206}Pb	±^{207}Pb/^{206}Pb	Apparent Ages (Ma) ^{206}Pb/^{238}U	±^{206}Pb/^{238}U	^{207}Pb/^{206}Pb	±^{207}Pb/^{206}Pb	Conc (%)
#13: 99-BLB-017, Lab #z7238 - IP238 (1.60%)																		
12.1	Bt	4.98	1.897E-05	1.070E-05	2.90E-04	1.490	0.011	0.331	0.006	5.29	0.10	0.1158	0.0005	1845	28	1893	7	98
#14: 86-TXD-047, Lab #z7234 - IP238 (1.60%)																		
a-2.1	Ky	5.41	1.289E-05	1.040E-05	2.00E-04	1.643	0.016	0.333	0.006	5.31	0.10	0.1157	0.0005	1851	27	1891	8	98
a-4.1	Bt	4.38	1.244E-05	8.050E-06	1.90E-04	1.320	0.010	0.326	0.006	5.18	0.10	0.1153	0.0005	1817	28	1884	7	96
a-4.2	Bt	4.60	1.908E-05	7.630E-06	2.90E-04	1.395	0.015	0.324	0.006	5.12	0.10	0.1146	0.0007	1810	28	1874	11	97
a-4.3	Bt	4.06	3.720E-06	1.084E-05	6.00E-05	1.241	0.013	0.327	0.005	5.21	0.09	0.1156	0.0004	1824	26	1889	7	97
a-5.1	Bt	4.80	1.244E-05	4.680E-06	1.90E-04	1.482	0.010	0.324	0.005	5.13	0.09	0.1147	0.0005	1811	27	1875	9	97
a-5.2	Bt	4.61	3.720E-06	1.075E-05	6.00E-05	1.392	0.022	0.329	0.006	5.25	0.10	0.1156	0.0008	1836	27	1890	13	97
b-5.1	Bt	3.77	1.901E-05	5.710E-06	2.90E-04	1.168	0.009	0.328	0.006	5.20	0.10	0.1149	0.0007	1829	27	1879	10	97
c-5.1	Ky	4.49	2.037E-05	1.208E-05	3.10E-04	1.360	0.015	0.332	0.006	5.28	0.09	0.1152	0.0004	1849	27	1884	6	98
#15: 86-TX-082, Lab #z7235 - IP238 (1.60%)																		
a-1.1	Ky	4.76	1.845E-05	6.680E-06	2.80E-04	1.434	0.008	0.330	0.006	5.25	0.10	0.1156	0.0005	1836	27	1889	8	97
a-2.1	Grt	4.78	1.078E-04	6.834E-05	1.65E-03	1.434	0.032	0.335	0.009	5.44	0.18	0.1177	0.0020	1862	41	1922	31	97
a-2.2	Grt	2.81	2.049E-04	9.038E-05	3.14E-03	0.812	0.031	0.322	0.009	5.10	0.18	0.1148	0.0020	1799	44	1877	32	96
b-3.1	Bt	5.55	4.738E-05	1.021E-05	7.30E-04	1.691	0.010	0.330	0.006	5.26	0.09	0.1156	0.0004	1837	27	1889	6	97
b-2.1	Bt	5.17	2.274E-05	7.240E-06	3.50E-04	1.564	0.011	0.332	0.006	5.33	0.10	0.1164	0.0007	1848	27	1902	11	97
c-2.1	Ky	4.62	5.670E-06	1.244E-05	9.00E-05	1.387	0.010	0.328	0.006	5.22	0.09	0.1152	0.0004	1831	27	1883	7	97
c-1.1	Bt	5.03	1.068E-05	5.270E-06	1.60E-04	1.507	0.018	0.332	0.006	5.30	0.11	0.1158	0.0009	1847	30	1893	15	98
#16: 87-TX-177, Lab #z7236 - IP238 (1.60%)																		
8.1	Bt	4.69	1.553E-05	9.330E-06	2.40E-04	1.391	0.011	0.332	0.005	5.37	0.09	0.1172	0.0005	1848	27	1914	7	97
8.2	Bt	4.30	2.760E-05	8.160E-06	4.20E-04	1.246	0.009	0.328	0.005	5.26	0.10	0.1163	0.0008	1829	27	1901	12	96
#17: 87-TX-061, Lab #z7237 - IP238 (1.60%)																		
7.1	Grt	7.09	5.431E-05	1.502E-05	8.30E-04	2.104	0.013	0.331	0.006	5.25	0.10	0.1151	0.0005	1843	28	1881	7	98
7.2	Grt	7.97	3.569E-05	1.546E-05	5.50E-04	2.460	0.032	0.331	0.006	5.29	0.10	0.1158	0.0005	1844	30	1893	8	98

Note: All data are for monazite, except for analyses of zircon cores interpreted as detrital in origin (see Loc).

IP number refers to mount number with 1s external error on standard calibration indicated in bracket.

Spot: 4.2.3 = 3rd analysis of 2nd spot on grain #4; a-5.2 = single analysis of 2nd spot on grain #5 of thin section a.

Loc = textural location: I = interstitial; others are inclusions in kyanite, biotite, staurolite, garnet; det = detrital zircon cores.

f^{206} refers to mole fraction of total ^{206}Pb that is due to common Pb; data have been corrected for common Pb according to procedures outlined in Stern and Sanborn (1998).

Uncertainties reported at one sigma and are calculated by numerical propagation of all known sources of error (Stern and Berman, 2000).

Conc. = concordance = 100 x (^{206}Pb/^{238}U age)/(^{207}Pb/^{206}Pb age).

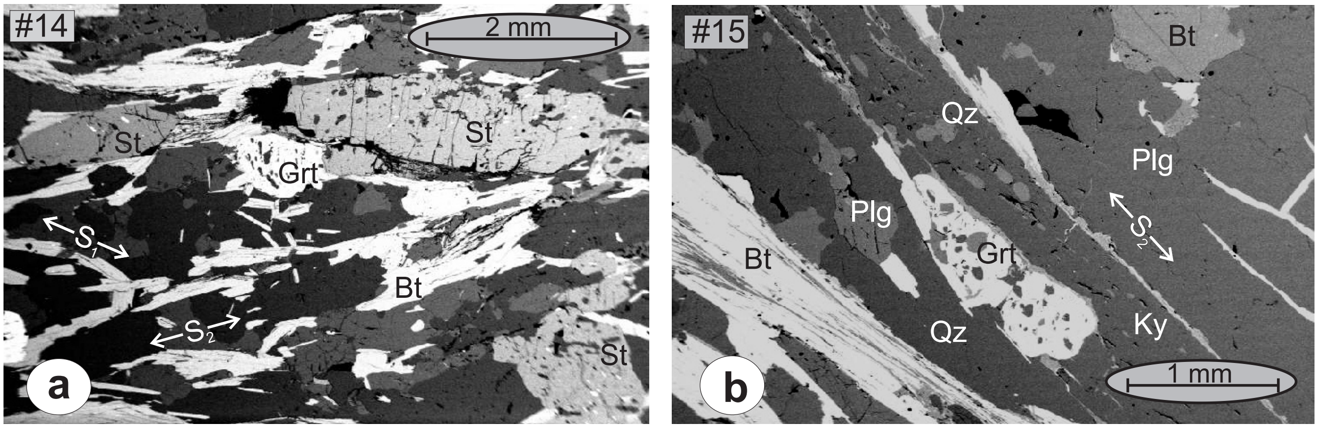

Figure DR1. SEM images of porphyroblast-fabric relationships in samples 14 and 15:
(a) S2 is axial planar to folded S1 fabric that is included in syn-S2 staurolite and garnet
(b) S2-parallel kyanite and elongate garnet, indicating syn-S2 growth

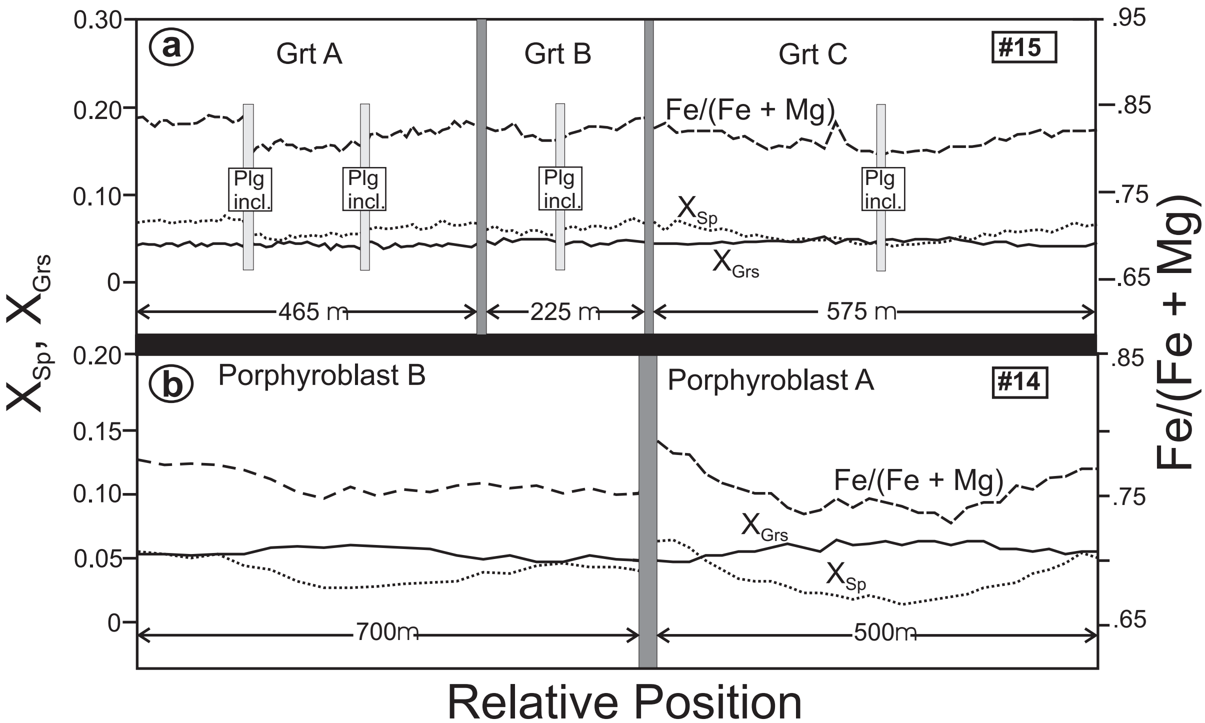

Figure DR2. Electron microprobe composition profiles across garnet porphyroblasts in samples #15 (grains A-C) and #14 (grains A and B). The occurrence of more calcic (X_{An} = 0.35-0.38) plagioclase inclusions in garnet than matrix plagioclase (X_{An} = 0.24-0.27) suggests increasing P during garnet growth on a clockwise P-T path. Mn and Fe enrichment of garnet rims is caused by retrograde reequilibration.

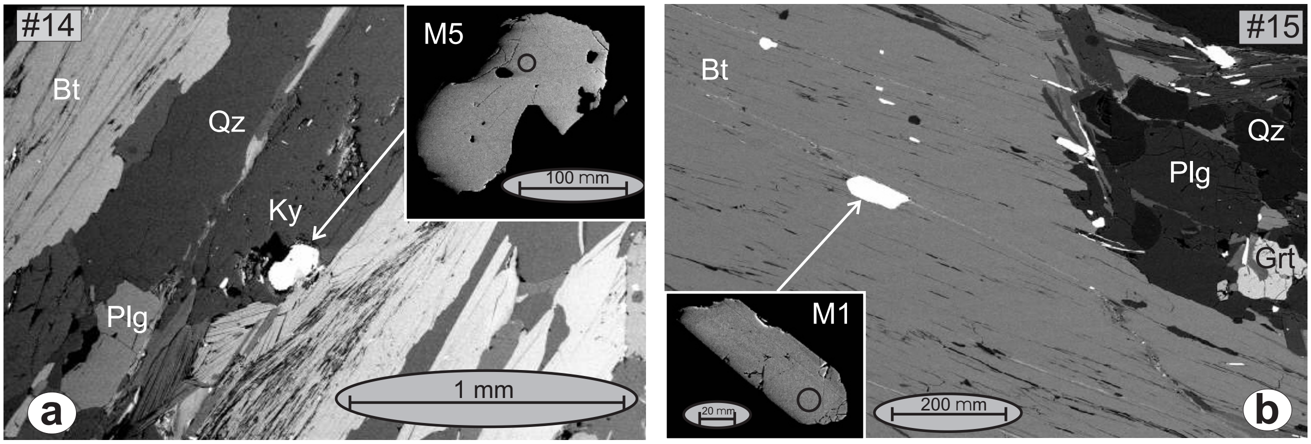

Figure DR3. SEM images of elongate monazite inclusions in S2-parallel (a) kyanite and (b) biotite, supporting syn-S2 growth of monazite. Insets show location of SHRIMP analyses #c-5.1 (a) and #c-1.1 (b) of Table DR3.

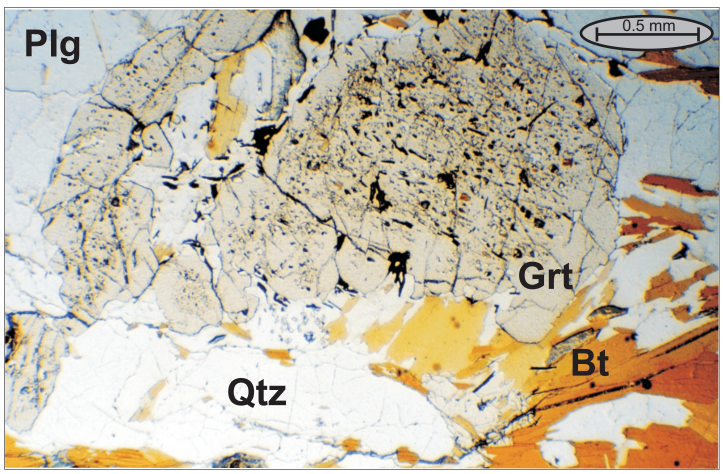

Figure DR4. Photomicrograph showing metapelite sample #11 with peak assemblage garnet-staurolite-sillimanite-biotite-plagioclase-quartz.

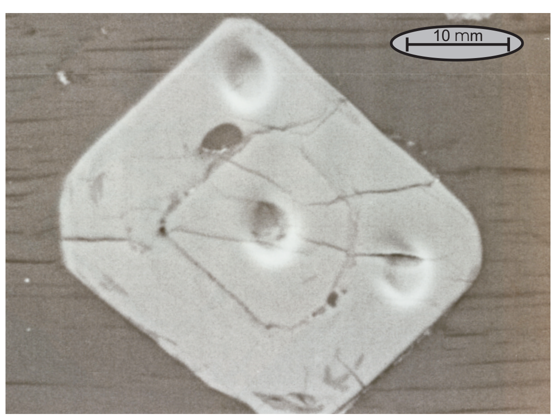

Figure DR5. Secondary electron image of zircon inclusion in biotite of sample #11. Cathode luminescent imaging shows no zoning within this zircon grain. SHRIMP pits show position of analyses giving ~1.9 Ga metamorphic age of two rims with Th/U < 0.003, and ~2.3 Ga age of core with Th/U = 0.68. The high Th/U of the zircon core supports its interpretation as a detrital grain of igneous origin. High Th/U zircon cores for this sample range in age between 2.7 to 2.3 Ga.