

Data Repository Table 1. Laser-Ablation ICP-MS analysis of U-Pb and Pb-Pb ages in zircon, and sample locations. Errors are reported at  $1\sigma$  level and include calibration errors (c. 1-2%,  $2\sigma$ , based on analysis of FC-1), but not interstandard errors (c. 1-2%,  $2\sigma$ ). Th/U is reported only for analyses that are at least 95% concordant. Ages assume that decay constants are  $^{235}\text{U} = 9.8485 \times 10^{-10} \text{ yr}^{-1}$  and  $^{238}\text{U} = 1.55125 \times 10^{-10} \text{ yr}^{-1}$ , and that  $^{238}\text{U}/^{235}\text{U} = 137.88$ . Data in reduced font and italics were not used in age regressions. Bold ages in  $^{206}\text{Pb}/^{238}\text{U}$  and  $^{207}\text{Pb}/^{206}\text{Pb}$  columns are results of standard (Concordia) and inverse isochron regressions. Bold values at bottom of Th/U column are average Th/U ratios for data used in age regressions. N.C. = not calculated. Note: GPS coordinate records for AR samples and LT01-102 were destroyed in Hurricane Katrina disaster.

## AS01-5 (Ulleri Augen Gneiss; 44R 768189 3139377)

$^{207}\text{Pb}/^{235}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	rho	Th/U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{235}\text{U}$ age (Ma)	$^{206}\text{Pb}/^{238}\text{U}$ age (Ma)	$^{207}\text{Pb}/^{206}\text{Pb}$ age (Ma)
$4.784 \pm 0.189$	$0.3234 \pm 0.0123$	0.848	0.28	$0.1073 \pm 0.0009$	$1782 \pm 33$	$1806 \pm 60$	$1754 \pm 16$
$4.107 \pm 0.182$	$0.2765 \pm 0.0119$	0.887		$0.1077 \pm 0.0009$	$1656 \pm 35$	$1573 \pm 60$	$1762 \pm 16$
$4.838 \pm 0.177$	$0.3247 \pm 0.0099$	0.657	0.39	$0.1080 \pm 0.0016$	$1792 \pm 30$	$1813 \pm 48$	$1767 \pm 26$
$2.989 \pm 0.095$	$0.1996 \pm 0.0050$	0.937		$0.1086 \pm 0.0014$	$1405 \pm 24$	$1173 \pm 27$	$1776 \pm 24$
$4.460 \pm 0.159$	$0.2976 \pm 0.0092$	0.805		$0.1087 \pm 0.0013$	$1724 \pm 29$	$1679 \pm 46$	$1777 \pm 22$
$4.271 \pm 0.150$	$0.2839 \pm 0.0084$	0.891		$0.1091 \pm 0.0015$	$1688 \pm 28$	$1611 \pm 42$	$1784 \pm 25$
$4.237 \pm 0.143$	$0.2816 \pm 0.0081$	0.823		$0.1091 \pm 0.0013$	$1681 \pm 27$	$1599 \pm 41$	$1785 \pm 22$
$3.485 \pm 0.106$	$0.2315 \pm 0.0056$	0.524		$0.1092 \pm 0.0014$	$1524 \pm 24$	$1342 \pm 29$	$1786 \pm 23$
$1.299 \pm 0.043$	$0.0862 \pm 0.0023$	0.823		$0.1092 \pm 0.0014$	$845 \pm 19$	$533 \pm 14$	$1787 \pm 23$
$1.885 \pm 0.059$	$0.1248 \pm 0.0030$	0.873		$0.1096 \pm 0.0015$	$1076 \pm 20$	$758 \pm 17$	$1792 \pm 24$
$4.540 \pm 0.151$	$0.2999 \pm 0.0084$	0.746	0.52	$0.1098 \pm 0.0013$	$1738 \pm 27$	$1691 \pm 42$	$1796 \pm 22$
$4.740 \pm 0.180$	$0.3130 \pm 0.0104$	0.807	0.32	$0.1098 \pm 0.0014$	$1774 \pm 31$	$1756 \pm 51$	$1796 \pm 23$
$4.581 \pm 0.150$	$0.3021 \pm 0.0081$	0.770	0.72	$0.1100 \pm 0.0014$	$1746 \pm 27$	$1702 \pm 40$	$1799 \pm 23$
$5.122 \pm 0.154$	$0.3288 \pm 0.0095$	0.767	0.17	$0.1130 \pm 0.0007$	$1840 \pm 25$	$1832 \pm 46$	$1848 \pm 11$
$2.412 \pm 0.088$	$0.1546 \pm 0.0049$	0.837		$0.1132 \pm 0.0015$	$1246 \pm 26$	$927 \pm 27$	$1851 \pm 24$
$4.115 \pm 0.115$	$0.2627 \pm 0.0053$	0.976		$0.1136 \pm 0.0015$	$1657 \pm 23$	$1504 \pm 27$	$1857 \pm 23$
$5.089 \pm 0.139$	$0.3232 \pm 0.0063$	0.986	0.22	$0.1142 \pm 0.0015$	$1834 \pm 23$	$1805 \pm 30$	$1867 \pm 23$
$3.715 \pm 0.104$	$0.2354 \pm 0.0048$	0.985		$0.1145 \pm 0.0015$	$1575 \pm 22$	$1363 \pm 25$	$1872 \pm 23$
$5.461 \pm 0.168$	$0.3457 \pm 0.0085$	0.946	1.12	$0.1145 \pm 0.0014$	$1894 \pm 26$	$1914 \pm 40$	$1872 \pm 22$
$3.955 \pm 0.136$	$0.2504 \pm 0.0072$	0.937		$0.1145 \pm 0.0015$	$1625 \pm 28$	$1441 \pm 37$	$1873 \pm 23$
$1.408 \pm 0.047$	$0.0891 \pm 0.0025$	0.725		$0.1145 \pm 0.0015$	$892 \pm 20$	$550 \pm 15$	$1873 \pm 23$
$2.523 \pm 0.082$	$0.1589 \pm 0.0042$	0.912		$0.1151 \pm 0.0015$	$1279 \pm 23$	$951 \pm 23$	$1882 \pm 23$
$4.626 \pm 0.129$	$0.2912 \pm 0.0060$	0.990		$0.1152 \pm 0.0015$	$1754 \pm 23$	$1647 \pm 30$	$1883 \pm 23$
$5.688 \pm 0.169$	$0.3567 \pm 0.0102$	0.821	0.16	$0.1156 \pm 0.0007$	$1930 \pm 25$	$1966 \pm 48$	$1890 \pm 11$
$4.774 \pm 0.141$	$0.2987 \pm 0.0085$	0.746		$0.1159 \pm 0.0007$	$1780 \pm 24$	$1685 \pm 42$	$1894 \pm 11$
$5.290 \pm 0.175$	$0.3288 \pm 0.0105$	0.880	0.19	$0.1167 \pm 0.0007$	$1867 \pm 28$	$1832 \pm 51$	$1906 \pm 11$
$2.579 \pm 0.088$	$0.1584 \pm 0.0044$	0.619		$0.1180 \pm 0.0016$	$1295 \pm 25$	$948 \pm 24$	$1927 \pm 25$

$5.159 \pm 0.165$	$0.3148 \pm 0.0096$	0.935		$0.1189 \pm 0.0009$	$1846 \pm 27$	$1764 \pm 47$	$1939 \pm 13$
$5.710 \pm 0.186$	$0.3461 \pm 0.0095$	0.761	0.67	$0.1196 \pm 0.0014$	$1933 \pm 28$	$1916 \pm 45$	$1951 \pm 21$
$4.857 \pm 0.153$	$0.2942 \pm 0.0074$	0.850		$0.1197 \pm 0.0015$	$1795 \pm 26$	$1663 \pm 37$	$1952 \pm 23$
$3.526 \pm 0.123$	$0.2135 \pm 0.0071$	0.865		$0.1198 \pm 0.0010$	$1533 \pm 27$	$1247 \pm 38$	$1953 \pm 15$
$1.244 \pm 0.081$	$0.0740 \pm 0.0048$	0.846		$0.1220 \pm 0.0011$	$821 \pm 36$	$460 \pm 29$	$1985 \pm 16$
$0.092 \pm 0.004$	$0.0052 \pm 0.0002$	0.516		$0.1294 \pm 0.0021$	$90 \pm 3$	$33 \pm 1$	$2090 \pm 28$
<b>0.45</b>						<b><math>1780 \pm 12</math></b>	<b><math>1776 \pm 6</math></b>

## LT01-44a (metatuff 45R 331759 3117425)

$^{207}\text{Pb}/^{235}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	rho	Th/U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{235}\text{U}$ age (Ma)	$^{206}\text{Pb}/^{238}\text{U}$ age (Ma)	$^{207}\text{Pb}/^{206}\text{Pb}$ age (Ma)
<b>Rims</b>							
$5.184 \pm 0.214$	$0.3340 \pm 0.0129$	0.902	0.30	$0.1126 \pm 0.0011$	$1850 \pm 34$	$1858 \pm 62$	$1841 \pm 17$
$4.863 \pm 0.212$	$0.3120 \pm 0.0128$	0.898	0.26	$0.1130 \pm 0.0012$	$1796 \pm 36$	$1751 \pm 63$	$1849 \pm 19$
$5.203 \pm 0.150$	$0.3335 \pm 0.0071$	0.789	0.22	$0.1131 \pm 0.0015$	$1853 \pm 24$	$1855 \pm 34$	$1850 \pm 23$
$4.780 \pm 0.144$	$0.3064 \pm 0.0070$	0.852		$0.1131 \pm 0.0015$	$1781 \pm 25$	$1723 \pm 35$	$1851 \pm 23$
$3.027 \pm 0.122$	$0.1939 \pm 0.0069$	0.964		$0.1132 \pm 0.0015$	$1414 \pm 30$	$1142 \pm 37$	$1852 \pm 23$
$5.101 \pm 0.132$	$0.3265 \pm 0.0056$	0.781	0.22	$0.1133 \pm 0.0015$	$1836 \pm 22$	$1821 \pm 27$	$1853 \pm 23$
$3.401 \pm 0.116$	$0.2174 \pm 0.0061$	0.942		$0.1135 \pm 0.0015$	$1505 \pm 27$	$1268 \pm 32$	$1856 \pm 24$
$5.033 \pm 0.152$	$0.3215 \pm 0.0074$	0.769	0.22	$0.1135 \pm 0.0015$	$1825 \pm 25$	$1797 \pm 36$	$1857 \pm 23$
$5.086 \pm 0.150$	$0.3248 \pm 0.0072$	0.799	0.12	$0.1136 \pm 0.0015$	$1834 \pm 25$	$1813 \pm 35$	$1857 \pm 24$
$5.266 \pm 0.153$	$0.3361 \pm 0.0072$	0.823	0.13	$0.1136 \pm 0.0015$	$1863 \pm 24$	$1868 \pm 35$	$1858 \pm 24$
$5.172 \pm 0.145$	$0.3299 \pm 0.0067$	0.763	0.12	$0.1137 \pm 0.0014$	$1848 \pm 24$	$1838 \pm 33$	$1859 \pm 23$
$5.298 \pm 0.149$	$0.3379 \pm 0.0068$	0.776	0.07	$0.1137 \pm 0.0015$	$1869 \pm 24$	$1877 \pm 33$	$1860 \pm 24$
$5.072 \pm 0.133$	$0.3227 \pm 0.0057$	0.820	0.13	$0.1140 \pm 0.0015$	$1831 \pm 22$	$1803 \pm 28$	$1864 \pm 23$
$5.526 \pm 0.231$	$0.3514 \pm 0.0140$	0.831	0.10	$0.1140 \pm 0.0010$	$1905 \pm 35$	$1941 \pm 66$	$1865 \pm 16$
$5.227 \pm 0.178$	$0.3321 \pm 0.0107$	0.845	0.41	$0.1142 \pm 0.0008$	$1857 \pm 29$	$1848 \pm 52$	$1867 \pm 13$
$5.399 \pm 0.206$	$0.3428 \pm 0.0125$	0.879	0.19	$0.1142 \pm 0.0008$	$1885 \pm 32$	$1900 \pm 60$	$1868 \pm 13$
$5.297 \pm 0.278$	$0.3363 \pm 0.0171$	0.880	0.23	$0.1142 \pm 0.0011$	$1868 \pm 44$	$1869 \pm 82$	$1868 \pm 18$
$5.286 \pm 0.181$	$0.3353 \pm 0.0109$	0.774	0.56	$0.1143 \pm 0.0009$	$1867 \pm 29$	$1864 \pm 52$	$1870 \pm 13$
$4.702 \pm 0.157$	$0.2981 \pm 0.0095$	0.713		$0.1144 \pm 0.0007$	$1768 \pm 28$	$1682 \pm 47$	$1870 \pm 12$
$5.406 \pm 0.204$	$0.3421 \pm 0.0123$	0.830	0.26	$0.1146 \pm 0.0009$	$1886 \pm 32$	$1897 \pm 59$	$1874 \pm 13$
$5.353 \pm 0.247$	$0.3385 \pm 0.0151$	0.841	0.17	$0.1147 \pm 0.0011$	$1877 \pm 39$	$1879 \pm 72$	$1875 \pm 17$
$5.431 \pm 0.208$	$0.3434 \pm 0.0121$	0.822	0.29	$0.1147 \pm 0.0012$	$1890 \pm 32$	$1903 \pm 58$	$1875 \pm 19$
$5.488 \pm 0.184$	$0.3470 \pm 0.0111$	0.763	0.61	$0.1147 \pm 0.0008$	$1899 \pm 28$	$1920 \pm 53$	$1876 \pm 12$
$5.288 \pm 0.220$	$0.3339 \pm 0.0133$	0.859	0.81	$0.1149 \pm 0.0010$	$1867 \pm 35$	$1857 \pm 64$	$1878 \pm 16$
$5.472 \pm 0.182$	$0.3455 \pm 0.0110$	0.715	0.22	$0.1149 \pm 0.0007$	$1896 \pm 28$	$1913 \pm 52$	$1878 \pm 12$

5.334±0.178	0.3365±0.0107	0.752	0.32	0.1150±0.0008	1874±28	1870±51	1879±12
5.613±0.185	0.3540±0.0106	0.823	0.16	0.1150±0.0011	1918±28	1954±50	1880±16
5.286±0.180	0.3332±0.0108	0.772	0.33	0.1151±0.0008	1867±29	1854±52	1881±12
5.231±0.171	0.3296±0.0102	0.817	0.36	0.1151±0.0008	1858±28	1836±49	1882±12
5.103±0.128	0.3209±0.0051	0.781	0.10	0.1153±0.0015	1837±21	1794±25	1885±23
5.340±0.161	0.3358±0.0091	0.810	0.22	0.1153±0.0010	1875±25	1866±44	1885±15
5.137±0.170	0.3226±0.0101	0.826	0.71	0.1155±0.0008	1842±28	1802±49	1887±13
5.557±0.195	0.3490±0.0116	0.816	0.30	0.1155±0.0009	1910±30	1930±55	1888±14
5.630±0.233	0.3533±0.0139	0.787	0.12	0.1156±0.0011	1921±35	1950±66	1889±17
5.311±0.171	0.3332±0.0097	0.771	0.46	0.1156±0.0011	1871±27	1854±47	1889±16
5.585±0.187	0.3496±0.0111	0.776	0.10	0.1159±0.0008	1914±28	1932±53	1894±12
5.201±0.177	0.3251±0.0102	0.897	0.13	0.1160±0.0011	1853±29	1814±49	1896±16
5.341±0.213	0.3330±0.0126	0.783	0.17	0.1163±0.0010	1875±33	1853±61	1901±16
5.491±0.158	0.3423±0.0097	0.801	0.27	0.1164±0.0006	1899±24	1898±46	1901±10
5.621±0.219	0.3480±0.0125	0.842	0.32	0.1172±0.0012	1919±33	1925±60	1913±19
5.399±0.222	0.3332±0.0128	0.860	0.33	0.1175±0.0012	1885±35	1854±62	1919±19
5.157±0.175	0.3182±0.0102	0.740		0.1175±0.0009	1845±29	1781±50	1919±14
5.022±0.141	0.3092±0.0085	0.755		0.1178±0.0007	1823±23	1737±42	1923±11
5.801±0.193	0.3546±0.0112	0.702	0.30	0.1187±0.0008	1947±28	1956±53	1936±12
6.890±0.274	0.4187±0.0154	0.926		0.1193±0.0013	2097±35	2255±70	1946±20
6.129±0.245	0.3575±0.0137	0.855	0.41	0.1243±0.0010	1994±34	1970±65	2020±14
6.496±0.218	0.3755±0.0120	0.832	0.22	0.1255±0.0008	2045±29	2055±56	2035±11
6.412±0.215	0.3703±0.0118	0.785	0.23	0.1256±0.0008	2034±29	2031±55	2037±11
7.199±0.198	0.3972±0.0107	0.803	0.55	0.1314±0.0007	2136±24	2156±49	2117±9
6.246±0.180	0.3446±0.0097	0.807		0.1315±0.0007	2011±25	1909±47	2118±10
5.426±0.151	0.2979±0.0082	0.788		0.1321±0.0007	1889±24	1681±40	2126±9
6.926±0.245	0.3346±0.0111	0.951		0.1501±0.0013	2102±31	1861±53	2347±15
10.171±0.240	0.4783±0.0063	0.496	0.48	0.1542±0.0020	2450±22	2520±28	2393±22
11.152±0.253	0.4985±0.0062	0.667	0.13	0.1622±0.0021	2536±21	2607±27	2479±21
<b>0.27</b>						<b>1877±6</b>	<b>1885±4</b>
<b>Cores</b>							
4.904±0.263	0.3114±0.0156	0.885		0.1142±0.0015	1803±44	1748±76	1868±24
4.579±0.150	0.2865±0.0086	0.865		0.1159±0.0011	1745±27	1624±43	1894±17
5.060±0.183	0.3156±0.0101	0.775		0.1163±0.0013	1829±30	1768±49	1900±20
5.723±0.285	0.3495±0.0161	0.858	0.14	0.1187±0.0016	1935±42	1932±76	1937±24

5.561±0.233	0.3082±0.0117	0.818		0.1309±0.0016	1910±35	1732±57	2110±21
5.536±0.201	0.3041±0.0098	0.717		0.1320±0.0014	1906±31	1711±48	2125±19
6.864±0.259	0.3706±0.0124	0.873	1.02	0.1343±0.0015	2094±33	2032±58	2155±20
7.317±0.313	0.3794±0.0146	0.748	0.48	0.1399±0.0018	2151±37	2073±68	2226±22
7.804±0.362	0.3944±0.0168	0.854	0.93	0.1435±0.0018	2209±41	2143±77	2270±22
10.198±0.478	0.4817±0.0207	0.874	1.01	0.1535±0.0020	2453±42	2535±89	2386±22
8.055±0.267	0.3798±0.0115	0.943		0.1538±0.0013	2237±29	2075±54	2389±15
12.350±0.518	0.5307±0.0203	0.861	0.35	0.1688±0.0019	2631±39	2744±85	2546±19
10.100±0.372	0.4327±0.0141	0.897		0.1693±0.0019	2444±33	2318±63	2551±19
12.762±0.471	0.5025±0.0164	0.676	0.44	0.1842±0.0021	2662±34	2625±70	2691±19
14.456±0.478	0.5285±0.0160	0.852	0.78	0.1983±0.0018	2780±31	2735±67	2813±14
17.985±0.793	0.6268±0.0257	0.886	0.70	0.2081±0.0025	2989±42	3137±101	2891±20
11.336±0.525	0.3542±0.0154	0.929		0.2321±0.0029	2551±42	1955±73	3066±20
18.793±0.642	0.5856±0.0184	0.775	0.55	0.2327±0.0021	3031±32	2972±74	3071±15
19.969±0.683	0.5827±0.0183	0.773	0.42	0.2485±0.0023	3090±33	2960±74	3175±14
23.644±0.890	0.6290±0.0211	0.847	0.88	0.2726±0.0030	3254±36	3146±83	3321±17

## LT01-102 ("Ulleri" gneiss)

$^{207}\text{Pb}/^{235}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	rho	Th/U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{235}\text{U}$ age (Ma)	$^{206}\text{Pb}/^{238}\text{U}$ age (Ma)	$^{207}\text{Pb}/^{206}\text{Pb}$ age (Ma)
5.098±0.134	0.3264±0.0077	0.639	0.49	0.1133±0.0010	1836±22	1821±37	1853±16
5.346±0.145	0.3419±0.0085	0.747	0.39	0.1134±0.0009	1876±23	1896±41	1855±15
5.135±0.110	0.3270±0.0060	0.814	0.26	0.1139±0.0009	1842±18	1824±29	1862±14
2.721±0.059	0.1731±0.0033	0.970		0.1140±0.0008	1334±16	1029±18	1864±12
5.198±0.118	0.3298±0.0067	0.746	0.70	0.1143±0.0008	1852±19	1837±32	1869±13
5.194±0.086	0.3291±0.0043	0.709	0.27	0.1145±0.0008	1852±14	1834±21	1871±13
5.237±0.149	0.3316±0.0090	0.779	0.42	0.1145±0.0007	1859±24	1846±43	1873±10
5.313±0.129	0.3364±0.0074	0.778	0.17	0.1146±0.0008	1871±21	1869±36	1873±13
5.476±0.106	0.3467±0.0056	0.801	0.16	0.1146±0.0008	1897±16	1919±27	1873±13
5.332±0.092	0.3373±0.0047	0.733	0.06	0.1147±0.0008	1874±15	1873±23	1875±12
5.383±0.115	0.3404±0.0063	0.865	0.17	0.1147±0.0008	1882±18	1888±30	1875±13
3.103±0.098	0.1962±0.0059	0.958		0.1147±0.0007	1433±24	1155±32	1875±11
5.410±0.158	0.3416±0.0095	0.662	0.37	0.1149±0.0007	1887±25	1894±45	1878±12
5.110±0.146	0.3223±0.0088	0.809	0.14	0.1150±0.0007	1838±24	1801±43	1880±10
5.204±0.151	0.3282±0.0091	0.780	0.16	0.1150±0.0007	1853±24	1830±44	1880±11
5.242±0.124	0.3306±0.0071	0.827	0.17	0.1150±0.0008	1859±20	1841±34	1880±12
5.290±0.157	0.3334±0.0094	0.769	0.20	0.1151±0.0007	1867±25	1855±45	1881±11

5.154±0.116	0.3245±0.0066	0.796	0.77	0.1152±0.0008	1845±19	1812±32	1883±13
3.944±0.063	0.2483±0.0031	0.731		0.1152±0.0008	1623±13	1430±16	1883±12
5.232±0.132	0.3293±0.0076	0.803	0.07	0.1152±0.0009	1858±21	1835±37	1884±13
5.643±0.126	0.3539±0.0071	0.963	0.04	0.1156±0.0008	1923±19	1953±34	1890±12
5.798±0.146	0.3569±0.0080	0.620	0.45	0.1178±0.0010	1946±22	1967±38	1923±15
7.521±0.176	0.4249±0.0089	0.543		0.1284±0.0010	2175±21	2283±40	2076±13
8.825±0.139	0.4276±0.0052	0.794	0.33	0.1497±0.0010	2320±14	2295±24	2342±11
8.599±0.139	0.4153±0.0052	0.839	0.39	0.1502±0.0010	2296±15	2239±24	2348±12
10.578±0.312	0.4715±0.0133	0.827	0.40	0.1627±0.0009	2487±27	2490±58	2484±10
10.252±0.301	0.4560±0.0128	0.872	0.55	0.1630±0.0009	2458±27	2422±56	2487±10
<b>0.28</b>						<b>1878±6</b>	<b>1876±3</b>

## AR01-4c (metapelite)

$^{207}\text{Pb}/^{235}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	rho	Th/U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{235}\text{U}$ age (Ma)	$^{206}\text{Pb}/^{238}\text{U}$ age (Ma)	$^{207}\text{Pb}/^{206}\text{Pb}$ age (Ma)
3.637±0.047	0.2404±0.0023	0.941		0.1097±0.0006	1558±10	1389±12	1795±11
3.833±0.044	0.2534±0.0020	0.905		0.1097±0.0006	1600±9	1456±10	1794±11
3.500±0.055	0.2323±0.0030	0.945		0.1093±0.0006	1527±12	1346±16	1788±11
4.240±0.058	0.2785±0.0030	0.859		0.1104±0.0006	1682±11	1584±15	1806±11
4.604±0.075	0.3041±0.0048	0.786		0.1098±0.0004	1750±14	1712±24	1796±6
4.793±0.082	0.3157±0.0052	0.724	0.11	0.1101±0.0004	1784±14	1769±25	1801±7
4.742±0.073	0.3132±0.0046	0.986	0.07	0.1098±0.0004	1775±13	1756±23	1797±6
4.474±0.076	0.2948±0.0048	0.836		0.1101±0.0004	1726±14	1665±24	1801±7
4.578±0.074	0.3022±0.0047	0.768		0.1099±0.0004	1745±13	1702±23	1797±7
4.565±0.080	0.3015±0.0051	0.775		0.1098±0.0004	1743±14	1699±25	1796±7
4.485±0.074	0.2958±0.0047	0.791		0.1100±0.0004	1728±14	1670±23	1799±6
4.527±0.072	0.3004±0.0046	0.804		0.1093±0.0004	1736±13	1694±23	1787±7
4.088±0.086	0.2705±0.0053	0.787		0.1096±0.0006	1652±17	1543±27	1793±9
4.480±0.094	0.2983±0.0059	0.832		0.1089±0.0006	1727±17	1683±29	1782±9
4.767±0.096	0.3158±0.0059	0.743	0.13	0.1095±0.0006	1779±17	1769±29	1791±9
4.757±0.097	0.3158±0.0061	0.799	0.13	0.1093±0.0006	1777±17	1769±30	1787±9
4.593±0.091	0.3028±0.0056	0.784		0.1100±0.0005	1748±16	1705±28	1800±9
3.030±0.062	0.1999±0.0039	0.966		0.1100±0.0005	1415±16	1175±21	1799±9
4.671±0.088	0.3112±0.0055	0.791	0.17	0.1089±0.0005	1762±16	1747±27	1780±9
4.405±0.084	0.2930±0.0052	0.812		0.1091±0.0005	1713±16	1656±26	1784±9
4.484±0.085	0.2977±0.0052	0.706		0.1093±0.0005	1728±16	1680±26	1787±9
5.268±0.118	0.3331±0.0071	0.557	0.19	0.1147±0.0007	1864±19	1854±34	1875±11

$8.010 \pm 0.144$	$0.3731 \pm 0.0065$	0.888		$0.1557 \pm 0.0006$	$2232 \pm 16$	$2044 \pm 30$	$2410 \pm 7$
$3.020 \pm 0.055$	$0.1931 \pm 0.0034$	0.874		$0.1134 \pm 0.0004$	$1413 \pm 14$	$1138 \pm 18$	$1855 \pm 7$
$4.549 \pm 0.102$	$0.2354 \pm 0.0050$	0.884		$0.1401 \pm 0.0007$	$1740 \pm 19$	$1363 \pm 26$	$2229 \pm 9$
			0.12			<b><math>1795 \pm 8</math></b>	<b><math>1794 \pm 5</math></b>
<b>AR01-10c (metagranite)</b>							
$^{207}\text{Pb}/^{235}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	rho	Th/U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{235}\text{U}$ age (Ma)	$^{206}\text{Pb}/^{238}\text{U}$ age (Ma)	$^{207}\text{Pb}/^{206}\text{Pb}$ age (Ma)
$0.034 \pm 0.002$	$0.0025 \pm 0.0001$	0.762		$0.0987 \pm 0.0021$	$33 \pm 2$	$16 \pm 1$	$1599 \pm 40$
$0.054 \pm 0.003$	$0.0039 \pm 0.0002$	0.927		$0.1013 \pm 0.0017$	$54 \pm 3$	$25 \pm 1$	$1647 \pm 30$
$1.957 \pm 0.108$	$0.1302 \pm 0.0067$	0.919		$0.1090 \pm 0.0018$	$1101 \pm 36$	$789 \pm 38$	$1783 \pm 29$
$1.797 \pm 0.060$	$0.1173 \pm 0.0034$	0.864		$0.1111 \pm 0.0012$	$1044 \pm 22$	$715 \pm 20$	$1817 \pm 20$
$3.011 \pm 0.132$	$0.1954 \pm 0.0079$	0.823		$0.1117 \pm 0.0014$	$1410 \pm 33$	$1151 \pm 42$	$1827 \pm 22$
$3.746 \pm 0.109$	$0.2418 \pm 0.0060$	0.735		$0.1124 \pm 0.0012$	$1581 \pm 23$	$1396 \pm 31$	$1838 \pm 19$
$3.099 \pm 0.088$	$0.1997 \pm 0.0048$	0.959		$0.1125 \pm 0.0011$	$1432 \pm 22$	$1174 \pm 26$	$1841 \pm 18$
$4.008 \pm 0.165$	$0.2567 \pm 0.0097$	0.682		$0.1132 \pm 0.0013$	$1636 \pm 33$	$1473 \pm 49$	$1852 \pm 21$
$1.584 \pm 0.065$	$0.0951 \pm 0.0036$	0.675		$0.1207 \pm 0.0014$	$964 \pm 25$	$586 \pm 21$	$1967 \pm 20$
$2.857 \pm 0.120$	$0.1672 \pm 0.0064$	0.878		$0.1239 \pm 0.0015$	$1371 \pm 31$	$997 \pm 35$	$2013 \pm 22$
$1.358 \pm 0.055$	$0.0792 \pm 0.0029$	0.655		$0.1243 \pm 0.0015$	$871 \pm 23$	$491 \pm 17$	$2019 \pm 22$
$4.068 \pm 0.136$	$0.2258 \pm 0.0066$	0.868		$0.1306 \pm 0.0015$	$1648 \pm 27$	$1313 \pm 35$	$2107 \pm 20$
$2.756 \pm 0.131$	$0.1530 \pm 0.0066$	0.701		$0.1307 \pm 0.0021$	$1344 \pm 35$	$918 \pm 37$	$2107 \pm 28$
$1.959 \pm 0.077$	$0.1004 \pm 0.0036$	0.483		$0.1415 \pm 0.0015$	$1101 \pm 26$	$617 \pm 21$	$2245 \pm 19$
			N.C.			<b><math>1832 \pm 12</math></b>	<b><math>1831 \pm 8</math></b>
<b>AR01-15 (metagranite)</b>							
$^{207}\text{Pb}/^{235}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	rho	Th/U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{235}\text{U}$ age (Ma)	$^{206}\text{Pb}/^{238}\text{U}$ age (Ma)	$^{207}\text{Pb}/^{206}\text{Pb}$ age (Ma)
$4.424 \pm 0.079$	$0.2931 \pm 0.0043$	0.782		$0.1095 \pm 0.0007$	$1717 \pm 15$	$1657 \pm 22$	$1791 \pm 12$
$4.237 \pm 0.079$	$0.2794 \pm 0.0044$	0.867		$0.1100 \pm 0.0007$	$1681 \pm 15$	$1588 \pm 22$	$1799 \pm 12$
$4.366 \pm 0.082$	$0.2909 \pm 0.0046$	0.855		$0.1089 \pm 0.0007$	$1706 \pm 15$	$1646 \pm 23$	$1780 \pm 12$
$4.237 \pm 0.098$	$0.2807 \pm 0.0058$	0.858		$0.1095 \pm 0.0008$	$1681 \pm 19$	$1595 \pm 29$	$1791 \pm 13$
$4.538 \pm 0.107$	$0.2985 \pm 0.0062$	0.796		$0.1103 \pm 0.0008$	$1738 \pm 19$	$1684 \pm 31$	$1804 \pm 14$
$4.533 \pm 0.144$	$0.3025 \pm 0.0090$	0.913	0.13	$0.1087 \pm 0.0008$	$1737 \pm 26$	$1704 \pm 44$	$1778 \pm 14$
$3.970 \pm 0.131$	$0.2656 \pm 0.0082$	0.852		$0.1084 \pm 0.0009$	$1628 \pm 27$	$1519 \pm 42$	$1773 \pm 15$
$4.092 \pm 0.071$	$0.2719 \pm 0.0044$	0.792		$0.1092 \pm 0.0005$	$1653 \pm 14$	$1550 \pm 22$	$1785 \pm 8$
$4.441 \pm 0.074$	$0.2920 \pm 0.0045$	0.722		$0.1103 \pm 0.0005$	$1720 \pm 14$	$1651 \pm 23$	$1805 \pm 8$
$4.564 \pm 0.080$	$0.2999 \pm 0.0049$	0.758		$0.1104 \pm 0.0005$	$1743 \pm 14$	$1691 \pm 24$	$1805 \pm 8$
$4.315 \pm 0.073$	$0.2865 \pm 0.0045$	0.801		$0.1092 \pm 0.0005$	$1696 \pm 14$	$1624 \pm 23$	$1787 \pm 8$
$2.131 \pm 0.044$	$0.1404 \pm 0.0027$	0.970		$0.1101 \pm 0.0006$	$1159 \pm 14$	$847 \pm 15$	$1801 \pm 10$

4.315±0.076	0.2850±0.0047	0.850		0.1098±0.0005	1696±14	1617±24	1796±8
4.467±0.078	0.2958±0.0048	0.778		0.1095±0.0005	1725±14	1671±24	1792±8
4.855±0.082	0.3077±0.0048	0.561		0.1144±0.0005	1794±14	1730±24	1871±8
2.846±0.054	0.1675±0.0030	0.617		0.1232±0.0006	1368±14	999±17	2003±8
<b>0.13</b>						<b>1791±6</b>	<b>1793±3</b>
<b>AR01-40b (metagranite)</b>							
$^{207}\text{Pb}/^{235}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	rho	Th/U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{235}\text{U}$ age (Ma)	$^{206}\text{Pb}/^{238}\text{U}$ age (Ma)	$^{207}\text{Pb}/^{206}\text{Pb}$ age (Ma)
4.253±0.133	0.2837±0.0079	0.815		0.1087±0.0010	1684±25	1610±39	1778±17
3.919±0.127	0.2592±0.0075	0.868		0.1097±0.0011	1618±26	1486±38	1794±18
4.367±0.150	0.2906±0.0090	0.767		0.1090±0.0011	1706±28	1644±45	1783±19
2.845±0.096	0.1880±0.0057	0.919		0.1097±0.0011	1367±25	1111±31	1795±18
4.361±0.149	0.2890±0.0089	0.814		0.1095±0.0011	1705±28	1637±44	1790±19
2.041±0.066	0.1342±0.0039	0.904		0.1103±0.0011	1129±22	812±22	1805±18
1.719±0.052	0.1157±0.0031	0.988		0.1078±0.0010	1016±19	706±18	1762±17
3.706±0.159	0.2466±0.0098	0.817		0.1090±0.0013	1573±34	1421±51	1782±21
4.517±0.163	0.2966±0.0097	0.832		0.1104±0.0012	1734±30	1675±48	1807±19
0.857±0.041	0.0573±0.0026	0.969		0.1085±0.0011	629±22	359±16	1774±19
1.916±0.050	0.1274±0.0029	0.957		0.1091±0.0010	1087±17	773±16	1784±16
0.848±0.022	0.0566±0.0013	0.683		0.1087±0.0010	623±12	355±8	1778±17
3.116±0.077	0.2084±0.0044	0.888		0.1084±0.0009	1437±19	1220±23	1773±16
3.596±0.089	0.2395±0.0050	0.851		0.1089±0.0009	1549±20	1384±26	1781±16
2.619±0.069	0.1741±0.0039	0.715		0.1091±0.0010	1306±19	1035±22	1785±17
4.419±0.109	0.2951±0.0061	0.703		0.1086±0.0010	1716±20	1667±30	1776±16
2.307±0.058	0.1528±0.0033	0.874		0.1095±0.0010	1214±18	916±18	1791±16
0.884±0.026	0.0591±0.0016	0.980		0.1084±0.0010	643±14	370±9	1773±16
3.011±0.074	0.2023±0.0041	0.981		0.1080±0.0010	1410±18	1187±22	1766±16
3.633±0.091	0.2431±0.0051	0.844		0.1084±0.0010	1557±20	1403±27	1772±16
2.403±0.061	0.1219±0.0026	0.796		0.1430±0.0013	1244±18	741±15	2264±15
<b>N.C.</b>						<b>1777±13</b>	<b>1784±10</b>

Data Repository Table 2.XRF whole rock analyses of orthogneisses and possible metavolcanic rocks from Nepal and India.  
 Major elements are in wt% oxide; trace elements are in ppm All rocks are interpreted as igneous in origin, except AR01-4c.

	<b>SV798</b>	<b>LT01-44a</b>	<b>LT01-102</b>	<b>AS01-5</b>	<b>AR01-4c</b>	<b>AR01-10c</b>	<b>AR01-15</b>	<b>AR01-40b</b>
<b>SiO<sub>2</sub></b>	74.05	78.67	86.36	74.45	70.90	72.11	71.99	70.89
<b>TiO<sub>2</sub></b>	0.633	0.346	0.295	0.210	0.389	0.102	0.354	0.421
<b>Al<sub>2</sub>O<sub>3</sub></b>	11.32	11.35	6.21	12.74	14.90	14.66	13.39	14.34
<b>FeO*</b>	3.69	1.74	1.44	2.04	2.49	1.19	2.87	2.92
<b>MnO</b>	0.076	0.230	0.014	0.035	0.016	0.037	0.064	0.062
<b>MgO</b>	1.70	0.47	0.80	0.33	1.90	0.16	0.67	0.87
<b>CaO</b>	1.48	3.09	0.18	1.02	0.23	0.66	1.13	1.03
<b>Na<sub>2</sub>O</b>	1.49	1.96	0.46	2.70	0.24	3.40	2.05	3.22
<b>K<sub>2</sub>O</b>	2.99	1.21	2.06	3.86	5.21	5.02	4.77	4.07
<b>P<sub>2</sub>O<sub>5</sub></b>	0.095	0.101	0.098	0.143	0.165	0.207	0.155	0.191
<b>Sum</b>	97.52	99.17	97.94	97.53	96.43	97.55	97.45	98.01
<b>Ni</b>	14	8	1	0	7	0	5	3
<b>Cr</b>	39	31	19	6	22	5	17	16
<b>Sc</b>	10	6	5	5	9	6	8	7
<b>V</b>	63	24	17	14	36	4	28	32
<b>Ba</b>	615	394	369	186	463	116	372	343
<b>Rb</b>	122	86	92	319	245	615	379	372
<b>Sr</b>	113	263	26	46	12	32	55	42
<b>Zr</b>	250	159	311	109	139	44	141	184
<b>Y</b>	33	29	22	30	25	19	24	41
<b>Nb</b>	11.5	9.6	7.8	17.9	12.8	19.3	15.9	23.2
<b>Ga</b>	16	15	8	20	19	22	16	18
<b>Cu</b>	29	33	2	4	2	1	21	2
<b>Zn</b>	65	29	24	31	18	48	49	40
<b>Pb</b>	19	33	14	27	10	34	30	25
<b>La</b>	33	33	53	38	49	11	37	55
<b>Ce</b>	72	62	102	72	101	27	85	115
<b>Th</b>	11	15	33	26	25	8	22	28
<b>Nd</b>	31	26	41	30	41	10	27	48
<b>U</b>	2	3	5	13	5	25	4	9

Data Repository Table 3. Zircon or Baddeleyite U-Pb or Pb-Pb ages &gt;1 Ga from the Indian craton

Source	Craton	Age	uncertainty
Buick et al. (2006)	Aravalli-Delhi	1716	6
Buick et al. (2006)	Aravalli-Delhi	1716	8
Buick et al. (2006)	Aravalli-Delhi	1692	6
Buick et al. (2006)	Aravalli-Delhi	1703	5
Buick et al. (2006)	Aravalli-Delhi	1723	10
Fareeduddin and Kröner (1998)	Aravalli-Delhi	1692	1
Kaur (2007)	Aravalli-Delhi	1662	1
Kaur (2007)	Aravalli-Delhi	1660	1
Kaur (2007)	Aravalli-Delhi	1711	1
Mukhopadhyay et al. (2000)	Aravalli-Delhi	1849	8
Roy et al. (2005)	Aravalli-Delhi	1622	1
Roy et al. (2005)	Aravalli-Delhi	1675	1
Roy et al. (2005)	Aravalli-Delhi	1656	1
Roy et al. (2005)	Aravalli-Delhi	1671	1
Sarkar et al. (1989)	Aravalli-Delhi	1723	10
Sivaraman and Raval (1995)	Aravalli-Delhi	1680	12
Ameen et al. (2007)	Bangladesh	1722	6
Hossain et al. (2007)	Bangladesh	1730	11
French et al. (2008)	Bastar	1891	1
French et al. (2008)	Bastar	1883	1
French et al. (2008)	Bastar	1885	3
Ghosh (2004)	Bastar	3561	11
Sarkar et al. (1993)	Bastar	3509	10
Sarkar et al. (1993)	Bastar	2480	3
Chatterjee et al. (2008)	Bengal	1550	12
Balakrishnan (1999)	Dharwar	2707	18
Balakrishnan (1999)	Dharwar	2650	5
Balakrishnan (1999)	Dharwar	2613	6
Balakrishnan (1999)	Dharwar	2528	1
Balakrishnan et al. (1990)	Dharwar	2550	8
Chadwick et al. (2001)	Dharwar	2528	9
Chadwick et al. (2007)	Dharwar	2648	40
Chadwick et al. (2007)	Dharwar	2598	19
Chardon et al. (2002)	Dharwar	2542	10
Chardon et al. (2002)	Dharwar	2547	19
Chardon et al. (2002)	Dharwar	2534	6
Halls et al. (2007)	Dharwar	2367	1
Jayananda et al. (2000)	Dharwar	3127	8
Jayananda et al. (2000)	Dharwar	2541	3
Jayananda et al. (2000)	Dharwar	2540	4
Jayananda et al. (2000)	Dharwar	2539	11
Jayananda et al. (2000)	Dharwar	2543	9
Jayananda et al. (2006)	Dharwar	2614	10
Jayananda et al. (2006)	Dharwar	2617	3
Kumar et al. (2007b)	Dharwar	1124	4
Mojzsis (2003)	Dharwar	2530	10
Mojzsis (2003)	Dharwar	2542	21
Mojzsis (2003)	Dharwar	2535	19
Mojzsis (2003)	Dharwar	2622	9
Mojzsis (2003)	Dharwar	2945	50
Mojzsis (2003)	Dharwar	2687	31

Mojzsis (2003)	Dharwar	2524	12
Rogers et al. (2007)	Dharwar	2543	9
Rogers et al. (2007)	Dharwar	2586	59
Biswal et al. (2007)	Eastern Ghats	2467	75
Dobmeier et al. (2006)	Eastern Ghats	1588	7
Dobmeier et al. (2006)	Eastern Ghats	1590	16
Kumar et al. (2007a)	Eastern Ghats	1352	2
Kumar et al. (2007a)	Eastern Ghats	1356	6
Upadhyay and Raith (2006)	Eastern Ghats	1263	27
Yin et al. (2009)	Shillong Plateau	1110	15
Yin et al. (2009)	Shillong Plateau	1111	42
Yin et al. (2009)	Shillong Plateau	1084	19
Yin et al. (2009)	Shillong Plateau	1564	55
Auge et al. (2002)	Singhbhum	3122	5
Auge et al. (2002)	Singhbhum	3123	7
Auge et al. (2002)	Singhbhum	3119	6
Bandyopadhyay et al. (2001)	Singhbhum	2809	12
Bandyopadhyay et al. (2001)	Singhbhum	2822	67
Misra et al. (1999)	Singhbhum	3080	8
Misra et al. (1999)	Singhbhum	3092	5
Misra et al. (2000)	Singhbhum	2803	4
Misra et al. (2000)	Singhbhum	2811	3
Misra et al. (2000)	Singhbhum	2481	7
Mukhopadhyay et al. (2008)	Singhbhum	3507	2
Friend and Nutman (1991)	South India	2963	4
Friend and Nutman (1991)	South India	2528	5
Friend and Nutman (1991)	South India	2513	5
Ghosh et al. (2004)	South India	2528	2
Ghosh et al. (2004)	South India	2508	4
Ghosh et al. (2004)	South India	2507	1
Ghosh et al. (2004)	South India	2540	44
Ghosh et al. (2004)	South India	2542	13
Ghosh et al. (2004)	South India	2511	27
Ghosh et al. (2004)	South India	2517	25
Ghosh et al. (2004)	South India	2522	10
Ghosh et al. (2004)	South India	1643	10
Ghosh et al. (2004)	South India	1996	20
Ghosh et al. (2004)	South India	2466	22
Krogstad et al. (1991)	South India	2532	10
Krogstad et al. (1991)	South India	2631	10
Krogstad et al. (1991)	South India	2610	10
Krogstad et al. (1991)	South India	2552	10
Nutman et al. (1996)	South India	2614	8
Nutman et al. (1996)	South India	2658	14
Nutman et al. (1996)	South India	2691	18
Nutman et al. (1996)	South India	2719	40
Nutman et al. (1996)	South India	2570	62
Peucat et al. (1993)	South India	2550	5
Peucat et al. (1993)	South India	2530	5
Peucat et al. (1993)	South India	2510	10
Peucat et al. (1993)	South India	3200	20
Peucat et al. (1993)	South India	3328	10
Trendall et al. (1997)	South India	2720	7
Trendall et al. (1997)	South India	2718	6

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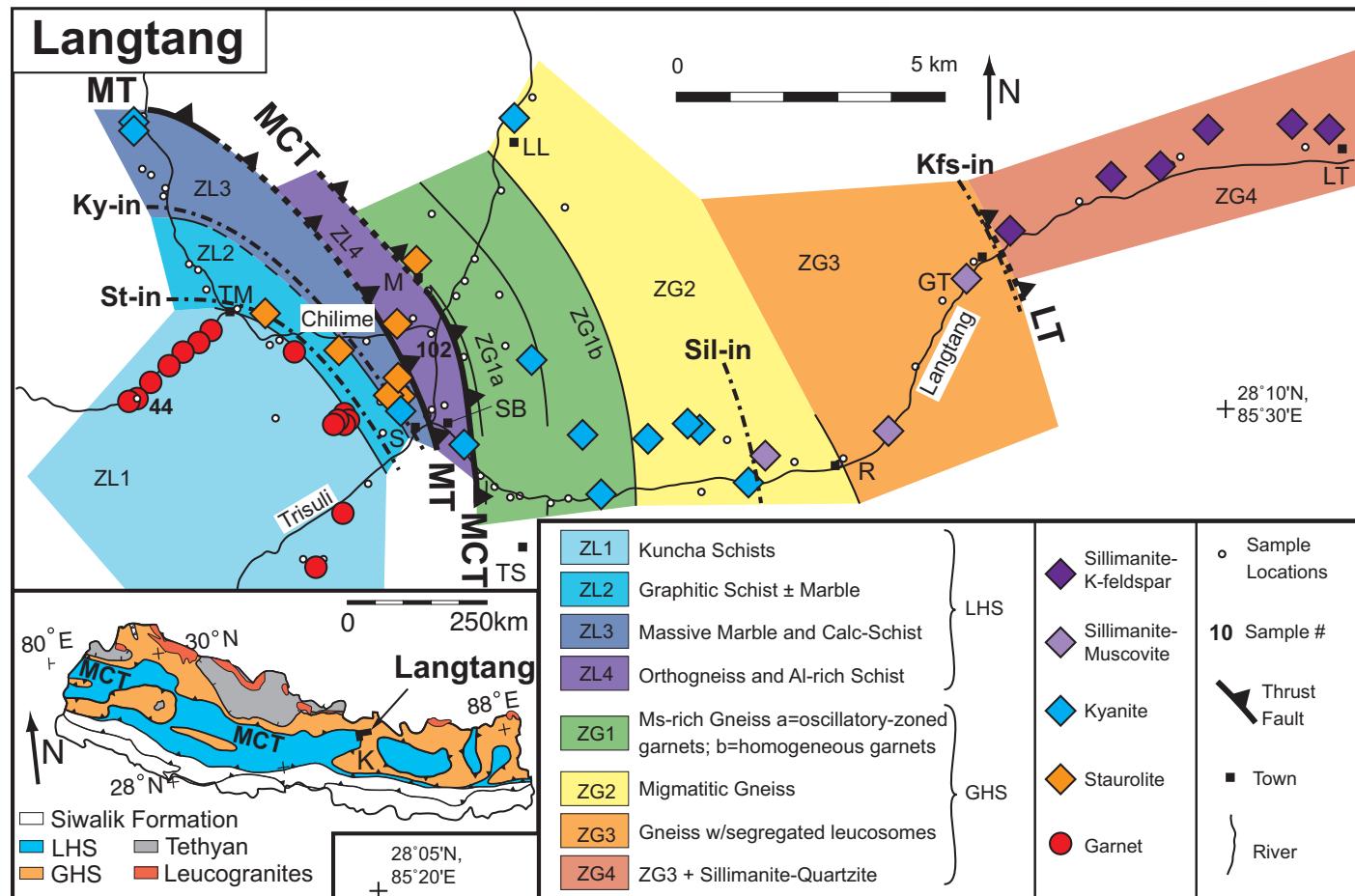
Trendall et al. (1997)	South India	2601	6
Vasudev et al. (2000)	South India	2576	12
Vasudev et al. (2000)	South India	2561	24

## References

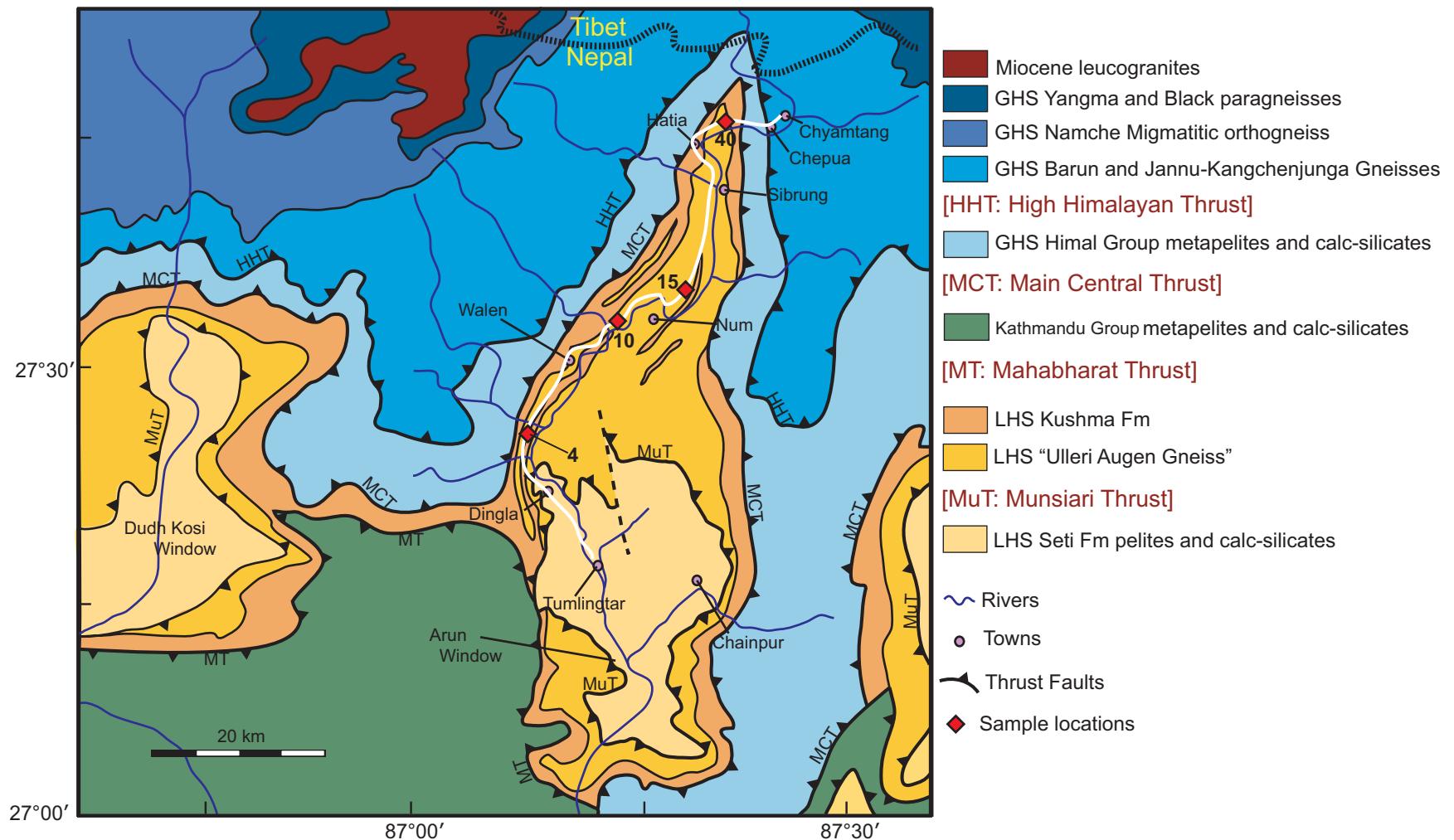
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Geologic map of Langtang region, central Nepal, showing sample locations, distribution of metamorphic index minerals and isograds, lithologic units, and inferred thrusts. LT, MCT, and MT are the Langtang, Main Central, and Munsiari Thrusts, respectively. Towns are GT = Ghodatabela, LL = Lingling, LT = Lantang, M = Mendo, R = Rimche, S = Syabru, SB = Syabru Bensi, TM = Thangmachet, and TS = Thulo Syabru. Inset shows major faults and location of Langtang area. Note that number LT01-102 was inadvertently used for 2 different sample locations. Metapelitic sample 102 described by Kohn (2008) is from farther north in unit ZG1a.



Geologic map of the Arun River Valley after Goscombe and Hand (2000) and Goscombe et al. (2006). Samples analyzed for zircon U-Pb and Pb-Pb ages were collected along the west side of the Arun Gorge on trails that are represented by the white line.