

Data Repository Item

Analytical procedures and U-Pb data of detrital zircons from the Cambrian of Elat area (Israel).
Zircon U-Pb geochronology was carried out on the SHRIMP-RG (sensitive high-resolution ion microprobe – reverse geometry) at Stanford University. The SHRIMP-RG employs magnetic analysis of the secondary ion beam before electrostatic analysis to achieve better mass resolution compared with previous SHRIMP designs. Zircons were separated from the Cambrian sandstone and mounted in epoxy, polished and coated with gold before analyses. Analytical spots ~30µm in diameter were sputtered using an ~10 nA O₂⁻ primary beam. Usually grain cores were analysed. The primary beam was rastered across the analytical spot for 90 seconds before analysis to reduce common lead. Resulting analyses show ²⁰⁴Pb is generally <0.01% of total Pb. U and Th concentration data were standardized against Sri Lankan zircon standard SL-13, and isotope ratios were calibrated against AS-57 with an assumed age of 1099 Ma. Note that each spot analysis was the average of five scans through the nine mass-stations. Data was reduced using the *Prawn* and *Lead* programs of T. Ireland. The 204-corrected data set is presented below.

Table DR1. U-Pb Geochronology data for detrital zircons separated from Cambrian sandstone in Israel (Elat area). Ages younger than 800 Ma are given as ²⁰⁶Pb*/²³⁸U ages, whereas older than 800 Ma are given as ²⁰⁷Pb*/²⁰⁶Pb* ages. Only zircons concordant on a Wetherhill diagram are listed.

Spot number	U (ppm)	Th (ppm)	²⁰⁴ Pb (ppb)	²⁰⁶ Pb*/ ²³⁸ U ¹	²⁰⁷ Pb*/ ²³⁵ U ¹	Age (Ma) ²
K2-11.1	130	75	2	0.0879 (28)	0.7612 (400)	543 (16)
K2-12.1	178	110	0	0.0880 (28)	0.7201 (469)	544 (17)
k2-4.1	143	73	3	0.0916 (30)	0.7432 (707)	565 (18)
K2-31.1	344	444	0	0.0923 (13)	0.7809 (252)	569 (8)
K2-16.1	288	210	0	0.0930 (31)	0.7601 (365)	573 (18)
k2-1.1	309	261	0	0.0933 (30)	0.7836 (340)	575 (18)
K2-10.1	206	93	-1	0.0939 (29)	0.7367 (359)	578 (17)
K2-39.1	283	176	0	0.0949 (31)	0.7866 (402)	584 (18)
K2-8.1	296	128	-2	0.0952 (28)	0.7948 (383)	586 (16)

K2-38.1	167	58	0	0.0954 (15)	0.7937 (214)	587 (9)
K2-26.1	111	111	-1	0.0954 (20)	0.8170 (697)	588 (12)
K2-19.1	336	170	-2	0.0964 (13)	0.8120 (329)	593 (8)
K2-41.1	537	163	8	0.0964 (25)	0.8128 (375)	593 (15)
K2-17.1	179	67	-2	0.0964 (20)	0.7895 (538)	593 (12)
k2-3.1	87	23	0	0.0969 (43)	0.8290 (520)	596 (25)
K2-24.1	254	101	0	0.0969 (19)	0.8132 (331)	596 (11)
K2-32.1	698	359	30	0.0990 (29)	0.8020 (371)	609 (17)
K2-40.1	328	282	1	0.0995 (64)	0.8313 (639)	611 (38)
K2-44.1	207	165	-2	0.0996 (26)	0.8136 (448)	612 (15)
K2-35.1	428	199	0	0.1009 (31)	0.8166 (279)	619 (18)
K2-36.1	281	146	-1	0.1018 (12)	0.8450 (273)	625 (7)
K2-33.1	140	47	-2	0.1035 (24)	0.8933 (529)	635 (14)
K2-15.1	381	90	2	0.1058 (33)	0.9267 (386)	648 (19)
K2-29.1	71	22	-1	0.1058 (21)	0.8917 (392)	648 (12)
K2-20.1	556	239	1	0.1064 (18)	0.8820 (290)	652 (10)
K2-5.1	299	176	2	0.1067 (31)	0.8707 (383)	654 (18)
k2-2.1	102	71	0	0.1078 (37)	0.9528 (450)	660 (22)
K2-7.1	100	48	1	0.1092 (42)	0.9393 (602)	668 (25)
K2-37.1	72	59	0	0.1113 (33)	0.9429 (487)	680 (19)
K2-42.1	67	64	1	0.1157 (36)	0.9959 (585)	706 (21)
K2-28.1	150	85	-1	0.1178 (27)	1.0025 (503)	718 (15)
K2-14.1	170	116	2	0.1509 (48)	1.4814 (822)	964 (88)
K2-30.1	354	309	2	0.1674 (19)	1.6552 (325)	978 (31)
K2-34.2	63	62	12	0.3140 (67)	4.7744 (2654)	1804 (91)
K2-34.1	164	126	0	0.3258 (38)	4.9143 (759)	1789 (16)
K2-27.1	265	60	1	0.5129 (213)	12.7820 (6987)	2660 (52)
K2-43.1	243	108	49	0.5297 (49)	13.4470(1910)	2690 (16)
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K15-13.1	416	214	-2	0.0866 (34)	0.7285 (429)	535 (20)
K15-41.1	295	93	2	0.0919 (19)	0.7472 (256)	567 (11)
K15-50.1	92	87	0	0.0961 (71)	0.7862 (900)	591 (42)
K15-23.1	557	774	-1	0.0967 (26)	0.7951 (271)	595 (15)
K15-51.1	121	54	1	0.0979 (22)	0.7628 (483)	602 (13)
K15-10.1	318	121	-1	0.0980 (30)	0.8220 (387)	603 (18)
K15-11.1	250	148	-1	0.0981 (32)	0.8433 (350)	603 (18)
K15-5.1	361	53	3	0.0983 (39)	0.8366 (570)	604 (23)
K15-57.1	243	155	0	0.0989 (21)	0.8077 (283)	608 (13)
K15-38.1	188	136	-1	0.1001 (18)	0.8572 (315)	615 (10)
K15-42.1	103	35	0	0.1007 (21)	0.8639 (342)	618 (12)
K15-35.1	98	33	-3	0.1011 (32)	0.8896 (1504)	621 (19)
K15-27.1	180	247	1	0.1018 (27)	0.8725 (546)	625 (16)
K15-40.1	400	135	1	0.1025 (13)	0.8294 (192)	629 (8)
K15-43.1	152	121	-1	0.1031 (36)	0.8739 (558)	633 (21)

K15-8.1	514	405	7	0.1032 (31)	0.8426 (335)	633 (18)
K15-48.1	317	119	2	0.1036 (17)	0.8499 (435)	635 (10)
K15-26.1	265	122	-1	0.1047 (22)	0.8797 (303)	642 (13)
K15-61.1	178	494	2.7761	0.1057 (21)	0.8705 (523)	648 (12)
K15-34.1	106	117	-1	0.1057 (25)	0.9089 (755)	648 (14)
K15-29.1	170	38	-1	0.1064 (17)	0.8582 (437)	652 (10)
K15-53.1	346	176	2	0.1082 (13)	0.8807 (222)	662 (8)
K15-62.1	194	390	2.0132	0.1089 (19)	0.8858 (431)	666 (11)
K15-17.1	316	196	1	0.1144 (17)	0.9598 (244)	698 (10)
K15-9.1	284	57	0	0.1161 (33)	0.9821 (343)	708 (19)
K15-49.1	270	97	0	0.1162 (16)	0.9997 (264)	709 (9)
K15-20.1	200	160	2	0.1221 (18)	1.1091 (327)	743 (10)
K15-37.1	107	40	1	0.1227 (23)	1.0299 (498)	746 (13)
K15-4.1	210	39	1	0.1236 (35)	1.0879 (430)	751 (20)
K15-28.1	244	246	0	0.1300 (19)	1.1618 (282)	788 (11)
K15-12.1	471	268	1	0.1305 (42)	1.2341 (466)	886 (34)
K15-46.1	250	148	1	0.1636 (34)	1.5744 (495)	922 (44)
K15-15.1	95	71	8	0.1486 (75)	1.4835 (1355)	997 (150)
K15-55.1	89	58	1	0.1722 (37)	1.7827 (657)	1071 (56)
K15-19.1	501	207	0	0.3181 (37)	4.6947 (1102)	1750 (35)
K15-22.1	313	146	4	0.3261 (40)	5.0560 (1125)	1839 (31)
K15-2.1	522	390	-1	0.3263 (86)	5.3199 (1481)	1930 (12)
K15-56.2	247	19	-1	0.5189 (88)	13.7530 (3161)	2761 (23)

K5-51.1	951	50	65	0.0850 (8)	0.7129 (284)	526 (5)
K5-63.2	223	128	1	0.0882 (35)	0.7483 (375)	545 (21)
K5-47.1	231	101	2	0.0884 (12)	0.7283 (249)	546 (7)
K5-52.1	614	259	11	0.0887 (22)	0.7699 (310)	548 (13)
K5-34.1	305	493	-4	0.0898 (39)	0.7860 (722)	554 (23)
K5-32.1	156	192	0	0.0903 (38)	0.7957 (468)	557 (22)
K5-53.1	142	340	-2	0.0905 (15)	0.7564 (338)	558 (9)
k5-5.1	102	63	2	0.0914 (39)	0.7559 (744)	564 (44)
K5-20.1	388	317	0	0.0929 (24)	0.7615 (264)	572 (14)
k5-7.1	347	65	0	0.0937 (30)	0.7779 (320)	577 (18)
k5-6.1	352	298	2	0.0944 (28)	0.7840 (380)	582 (22)
k5-34.1	134	75	0	0.0953 (32)	0.8250 (620)	587 (19)
K5-63.1	145	81	-1	0.0962 (28)	0.7849 (461)	592 (16)
K5-1.1	279	165	2	0.0963 (30)	0.8097 (429)	593 (24)
k5-11.1	312	140	0	0.0968 (27)	0.8248 (299)	596 (17)
k5-8.1	488	167	-2	0.1043 (28)	0.8730 (303)	640 (17)
k5-12.1	265	140	-1	0.0997 (27)	0.8312 (335)	613 (19)
K5-24.1	257	59	-1	0.0981 (12)	0.8391 (326)	603 (7)
K5-58.1	178	122	-1	0.0988 (28)	0.8560 (601)	607 (16)
K5-46.1	77	62	0	0.1004 (33)	0.8029 (540)	617 (19)

k5-36.1	104	40	0	0.1013 (22)	0.8289 (335)	622 (13)
k5-9.1	251	230	-1	0.1041 (30)	0.8734 (367)	638 (20)
K5-17.1	104	54	2	0.1041 (23)	0.8444 (492)	638 (13)
k5-10.1	414	246	1	0.1041 (31)	0.8654 (369)	639 (20)
K5-26.1	129	40	-1	0.1049 (26)	0.9116 (442)	643 (15)
K2-25.1	149	107	0	0.1053 (24)	0.8778 (304)	645 (14)
K5-45.1	165	35	-1	0.1060 (19)	0.8963 (303)	650 (11)
K2-27.1	299	46	4	0.1072 (19)	0.8800 (381)	657 (11)
K5-18.1	157	151	0	0.1510 (24)	1.4212 (462)	681 (12)
K5-3.1	276	71	0	0.1162 (34)	0.9883 (353)	708 (20)
K5-48.1	387	34	6	0.1176 (13)	0.9948 (246)	717 (8)
K5-50.2	629	13	4	0.1180 (24)	1.0187 (382)	719 (14)
K5-22.1	75	55	1	0.1241 (29)	1.1084 (597)	754 (17)
K5-54.1	159	105	0	0.1277 (32)	1.1069 (374)	775 (18)
K5-19.1	189	110	0	0.1114 (20)	0.9252 (318)	877 (56)
K5-41.1	331	265	1	0.1484 (17)	1.4794 (338)	995 (38)
k5-39.1	186	262	0	0.1480 (32)	1.5008 (465)	1029 (40)
K5-64.1	199	64	0	0.1564 (46)	1.6015 (682)	1049 (56)
K5-62.2	172	149	3	0.1596 (50)	1.6134 (678)	1023 (50)
K5-60.2	623	275	1	0.1644 (45)	1.6632 (491)	1024 (16)
K5-60.1	295	155	1	0.1660 (53)	1.6836 (642)	1030 (35)
k5-38.1	335	237	4	0.1598 (23)	1.6587 (541)	1076 (56)
K5-62.1	186	199	-1	0.1659 (57)	1.7432 (929)	1101 (75)
K5-33.3	205	77	0	0.5146 (81)	12.6190 (2607)	2633 (19)

K20-29.1	198	224	0	0.7201 (469)	0.0880 (28)	544 (17)
K20-46.1	82	22	-2	0.7285 (429)	0.0866 (34)	535 (20)
K20-27.1	231	69	-1	0.7367 (359)	0.0939 (29)	578 (17)
K20-21.1	293	208	3	0.7432 (707)	0.0916 (30)	565 (18)
K20-6.1	670	29	2	0.7559 (744)	0.0914 (39)	564 (23)
K20-1.1	567	115	1	0.7579 (325)	0.0941 (27)	580 (16)
K20-32.2	143	140	0	0.7601 (365)	0.0930 (31)	573 (18)
K20-28.1	500	99	2	0.7612 (4000)	0.0879 (28)	543 (16)
K20-8.1	183	122	0	0.7779 (320)	0.0937 (30)	577 (18)
K20-18.1	283	492	0	0.7836 (340)	0.0933 (30)	575 (18)
K20-7.1	1996	956	2	0.7840 (380)	0.0944 (28)	582 (17)
K20-25.1	55	112	-2	0.7948 (383)	0.0952 (28)	586 (16)
K20-15.1	85	47	1	0.7980 (362)	0.0946 (33)	583 (19)
K20-2.1	84	77	2	0.8097 (429)	0.0963 (30)	593 (18)
K20-20.1	211	116	0	0.8290 (520)	0.0969 (43)	596 (25)
K20-12.1	324	164	0	0.8248 (299)	0.0968 (27)	596 (16)
K20-43.1	150	179	-1	0.8220 (387)	0.0980 (30)	603 (18)
K20-13.1	181	86	-1	0.8312 (335)	0.0997 (27)	613 (16)
K20-38.1	1247	201	3	0.8366 (570)	0.0983 (39)	604 (23)

K20-41.1	160	80	7	0.8426 (335)	0.1032 (31)	633 (18)
K20-44.1	164	54	-1	0.8433 (350)	0.0981 (32)	603 (18)
K20-11.1	538	109	1	0.8654 (369)	0.1041 (31)	639 (18)
K20-9.1	681	393	-2	0.8730 (303)	0.1043 (28)	640 (17)
K20-10.1	437	121	-1	0.8734 (367)	0.1041 (30)	638 (18)
K20-32.1	200	110	2	0.9267 (386)	0.1058 (33)	648 (19)
K20-22.1	253	250	2	0.8707 (383)	0.1067 (31)	654 (18)
K20-24.1	118	60	1	0.9393 (602)	0.1092 (42)	668 (25)
K20-19.1	202	142	0	0.9528 (450)	0.1078 (37)	660 (22)
K20-55.1	438	306	3	0.9750 (430)	0.1197 (26)	729 (15)
K20-42.1	126	107	0	0.9821 (343)	0.1161 (33)	708 (19)
K20-4.1	632	550	0	0.9883 (353)	0.1162 (34)	708 (20)
K20-50.1	158	125	2	0.9920 (380)	0.1190 (16)	725 (9)
K20-48.1	119	77	-1	1.0031 (736)	0.1196 (46)	728 (26)
K20-37.1	136	93	1	1.0879 (430)	0.1236 (35)	751 (20)
K20-52.1	182	50	-1	1.1502 (314)	0.1345 (20)	813 (12)
K20-31.1	320	173	2	1.4814 (822)	0.1509 (48)	964 (88)
K20-39.1	242	122	0	1.6959 (1388)	0.1615 (61)	1099 (143)
K20-34.1	293	96	-1	5.3199 (1481)	0.3263 (86)	1930 (12)

¹ Values in parentheses are absolute 1 σ counting errors, referring to errors in the last decimal places.

² Values in parentheses are 2 σ errors in millions of years.

Table DR 2. U-Pb geochronological data for detrital zircons from the Cambrian sandstone. Only discordant grains are listed. ²⁰⁷Pb/²⁰⁶Pb (minimum) ages are given.

Spot Number	U (ppm)	Th (ppm)	²⁰⁴ Pb (ppb)	²⁰⁶ Pb*/ ²³⁸ U ¹	²⁰⁷ Pb*/ ²³⁵ U ¹	Age (Ma) ²⁰⁷ Pb*/ ²⁰⁶ Pb* ²
K2-25.1	190	87	-1	0.0886 (25)	0.8475 (648)	910 (145)
K2-46.1	446	357	88	0.2693 (187)	5.902 (4332)	2445 (29)
K2-43.2	669	310	13605	0.1645 (833)	3.8674 (4802)	2563 (192)
K2-43.3	590	139	1718	0.4914 (189)	14.0670 (18713)	2887 (214)
K15-21.1	329	215	2	0.1585 (18)	1.4715 (333)	848 (38)
K15-47.1	75	50	0	0.1707 (55)	1.6909 (817)	981 (67)
K15-25.1	170	120	0	0.1952 (57)	1.9967 (855)	1047 (57)
K15-6.1	54	39	0	0.1615 (61)	1.6959 (1388)	1099 (143)
K15-36.1	1204	402	277	0.0360 (6)	0.3904 (443)	1162 (235)
K15-58.1	305	181	8	0.1790 (30)	1.9668 (499)	1189 (34)
K15-7.1	163	7	-1	0.1078 (34)	1.4191 (903)	1538 (100)
K15-56.1	109	56	1	0.6593 (131)	21.126 (6332)	3069 (32)

K5-43.1	204	260	-2	0.1239 (20)	1.1443 (307)	838 (41)
K5-55.1	237	233	3	0.1383 (26)	1.283 (434)	847 (55)
K5-50.1	223	48	0	0.1713 (16)	1.5962 (269)	856 (27)
K5-30.1	198	80	-2	0.1235 (23)	1.1581 (583)	869 (95)
K5-31.1	170	58	-1	0.1217 (34)	1.1696 (742)	919 (114)
K5-56.1	136	81	-1	0.1444 (31)	1.4348 (555)	987 (62)
K5-40.1	423	319	0	0.1174 (29)	1.1935 (510)	1034 (66)
K5-57.2	500	772	28	0.2254 (68)	3.1638 (1127)	1657 (30)
K5-57.1	709	1200	177	0.1670 (13)	2.3966 (577)	1698 (41)
K5-16.1	988	495	263	0.1381 (38)	1.9959 (940)	1711 (66)
K5-16.2	509	303	63	0.2406 (78)	3.5745 (1475)	1762 (40)
K5-4.1	120	98	1	0.2580 (98)	3.8998 (1753)	1794 (36)
K5-61.1	151	90	0	0.3217 (101)	5.2242 (2094)	1923 (39)
K5-15.1	672	549	65	0.3401 (111)	7.6501 (2988)	2489 (30)
k5-37.1	373	399	17	0.3575 (234)	8.1077 (5483)	2502 (19)
K5-49.2	207	281	21	0.3905 (78)	9.0201 (2615)	2533 (32)
K5-33.1	87	37	0	0.4117 (118)	9.5821 (3339)	2546 (28)
k5-37.3	131	115	2	0.4080 (93)	9.5019 (3237)	2547 (38)
k5-37.2	469	168	-2	0.4704 (39)	11.2830 (1205)	2596 (10)
K5-49.1	196	296	1	0.4551 (41)	11.0210 (1833)	2612 (22)
K5-33.2	185	175	-1	0.4226 (92)	10.5700 (3220)	2666 (31)

K20-45.1	761	662	1	1.2341 (466)	0.1305 (42)	886 (34)
K20-56.1	88	77	2	1.8966 (793)	0.1940 (48)	955 (64)
K20-49.1	665	1636	19	1.8196 (456)	0.1825 (22)	995 (43)
K20-40.1	177	136	-1	1.4191 (903)	0.1078 (34)	1538 (100)
K20-17.1	231	187	263	1.9959 (940)	0.1381 (38)	1711 (66)
K20-5.1	158	83	1	3.8998 (1753)	0.2580 (98)	1794 (36)
K20-51.1	220	125	0	6.6665 (1364)	0.3983 (59)	1977 (22)
K20-16.1	21	13	65	7.6501 (2988)	0.3401 (111)	2489 (30)
K20-57.1	213	136	0	12.035 (3247)	0.5325 (111)	2497 (25)
K20-60.1	288	312	4	10.398 (2214)	0.4468 (67)	2546 (23)

¹ Values in parentheses are absolute 1σ counting errors, referring to errors in the last decimal places.

² Values in parentheses are 2σ errors in millions of years.
