Supplementary Appendix IV

Table 1: Stratigraphic unit, age and reference for age data used to determine the possible source areas for the Keis supergroup.

| **No** | **Stratigraphic unit** | **Age** | **Reference** |
| --- | --- | --- | --- |
| 1 | Dolerite intrusions (U–Pb baddeleyite) | ~1879 Ma to ~1872 Ma | Hanson et al. (2004) |
| 2 | Dolerite intrusion (U–Pb baddeleyite) | ~1972 Ma | Hanson et al. (2004) |
| 3 | Waterberg Group | 1880 to 2054 ± 4 Ma | de Kock (2006); (Andersen et al., 2019b) |
| 4 | Klipfontein kimberlite | 1898 ± 17 Ma | Schmitz and Bowring (2000) |
| 5 | Trompsburg gabbro | 1915 ± 17 Ma | Maier et al. (2003) |
| 6 | Hartley volcanics | 1915.6 ± 1.4 Ma | Cornell et al. (2016) |
| 7 | Intrusive charno-enderbites | Late tectonic 1923 ± 27Ma and 1960 Ma | Munyanyiwa et al. (1995) |
| 8 | Urungwe granite | Syn-tectonic 1997 ± 3 Ma | Hilliard (1999) |
| 9 | Metasyenite from Central zone, Limpopo belt | 2010.3 ± 4.5 Ma | Rigby and Armstrong (2011) |
| 10 | Vredefort central intrusive granite | 2017 ±5 Ma | Gibson et al. (1997) |
| 11 | Entabeni granite | 2021 ± 5Ma | Dorland (2004) |
| 12 | Entabeni granite; Limpopo Belt | 2023 ± 6 Ma | Zeh et al. (2009) |
| 13 | Mahalapye granite | 2023 ± 11Ma | McCourt and Armstrong (1998) |
| 14 | Thipise gneiss | 2023 ± 11 Ma | Kröner et al. (2000) |
| 15 | Kubu Island granite | 2039 ± 1.4Ma | Majaule et al. (1994) |
| 16 | Syenite; Schiel Alkaline Complex | 2051 ± 6 Ma | Laurent and Zeh (2015) |
| 17 | Rust de Winter quartz porphyry | 2051 ± 7.9Ma | Dorland (2004) |
| 18 | Lose Quarry granodiorite | 2053 ± 21Ma | McCourt and Armstrong (1998) |
| 19 | Websterite; Schiel Alkaline Complex | 2054 ± 6 Ma | Laurent and Zeh (2015) |
| 20 | Swaershoek quartz porphyry | 2054.1 ± 3.5Ma | Dorland (2004) |
| 21 | Nebo granite | 2054 ± 2Ma | Walraven and Hattingh (1993) |
| 22 | Bushveld Complex | 2055.91 ± 0.26 Ma | Zeh et al. (2015) |
| 23 | Hekpoort tuff | 2225 ± 3 Ma | Dorland (2004) |
| 24 | Westerberg sill | 2426 ± 1 Ma | Kampmann et al. (2015) |
| 25 | Riries tuff | 2454 ± 25.3 Ma to 2478 ± 5.7 Ma | Pickard (2003) |
| 26 | Tshipise gneiss | 2512 ± 7 Ma | Kröner et al. (1999) |
| 27 | Gamohaan tuff | 2516 ± 4 Ma | Altermann and Nelson (1998) |
| 28 | Swejane granite | 2517 ± 33 Ma | Holzer et al. (1999) |
| 29 | Zanzibar gneiss | 2521 ±3 Ma | Kröner et al. (1999) |
| 30 | Nauga tuff | 2549 ± 7 Ma | Altermann and Nelson (1998) |
| 31 | Monteville tuff | 2555 ± 19 Ma | Altermann and Nelson (1998) |
| 32 | Bulai Gneiss enderbite | 2516 ± 60 Ma | Kröner et al. (1999) |
| 33 | Bulai Gneiss granite | 2572 ± 4 Ma | Barton et al. (1994) |
| 34 | Blackreef Formation | 2588 ± 6 Ma | Jolley et al. (2005) |
| 35 | Makowe granite | 2595 ± 13 Ma | McCourt and Armstrong (1998) |
| 36 | Bulai gneiss | 2608 ± 2 Ma | Kröner et al. (1999) |
| 37 | Alldays gneiss | 2610 ± 75 Ma | Kröner et al. (1999) |
| 38 | Rooiwater Complex | 2611 ± 10 Ma | Zeh et al. (2009) |
| 39 | Zanzibar gneiss | 2612 ± 0.2 Ma | Kröner et al. (1999) |
| 40 | Pre Bulai leucogranite | 2620 ± 8 Ma | Kröner et al. (1999) |
| 41 | Lovedale kimberlite eclogite | 2630 ± 1 Ma | Schmitz and Bowring (2000) |
| 42 | Selebi Phikwe granitoid | 2652 ± 50 Ma | McCourt and Armstrong (1998) |
| 43 | Vryburg lava | 2642 Ma | Walraven and Martini (1995) |
| 44 | Buffelsfontien lavas | 2664 ± 0.7 Ma | Barton et al. (1995) |
| 45 | Mashishimale granite | 2677 ± 14 Ma | Poujol (2001) |
| 46 | Monzogranite; Matlala Pluton | 2677 ±5 Ma | Laurent and Zeh (2015) |
| 47 | Uitloop Granite, Limpopo Belt | 2679 ± 8 Ma | Zeh et al. (2009) |
| 48 | Matok-, Moletsi- and Mash plutons | 2680 Ma to 2688 Ma | Laurent and Zeh (2015) |
| 49 | Singelele gneiss | 2681 ± 8 Ma | Kröner et al. (1999) |
| 50 | Post Uitkyk granite | 2687 ± 2 Ma | De Wit et al. (1993) |
| 51 | Pre Morokweng granophyre | 2689 ± 5 Ma | Reimold et al. (2002) |
| 52 | Mbabane granitoid | 2691 ± 4 Ma | Layer et al. (1991) |
| 53 | Matlala granite | 2693 ± 7 Ma | Laurent and Zeh (2015) |
| 54 | Mashishimale granite | 2698 ± 21 Ma | Poujol (2001) |
| 55 | Mpageni granite | 2698 ± 7 Ma | Zeh et al. (2009) |
| 56 | Trondhjemite; Pietersburg block | 2700 | Vezinet (2017) |
| 57 | Makwassie quartz porphyry | 2709 ± 4 Ma | Armstrong et al. (1991) |
| 58 | Klipriviersberg Group | 2714 ± 8 Ma | Armstrong et al. (1991) |
| 59 | Leucogranite; Pietersburg Block | ~2717 Ma | Vezinet (2017) |
| 60 | Skalkseput granite | 2718 ± 8 Ma | McCourt et al. (2000) |
| 61 | Granite; Pietersburg Block | ~2722 Ma | Vezinet (2017) |
| 62 | Ancient Gneiss Complex, Swaziland | 2722 ± 7Ma | Zeh et al. (2011) |
| 63 | Welkom West granitoid | 2727 ± 6 Ma | Robb et al. (1992) |
| 64 | Ancient Gneiss Complex, Swaziland | 2727 ± 10Ma | Zeh et al. (2011) |
| 65 | Venterspost Formation | 2729 ± 19 Ma | Kositcin and Krapež (2004) |
| 66 | Rooiwater tonalite | 2740 ± 4 Ma | Poujol (2001) |
| 67 | Amalia Greenstone Belt | 2754 ± 4.6 Ma | Poujol et al. (2005) |
| 68 | Turfloop granite | 2757 ± 9 Ma | Laurent and Zeh (2015) |
| 69 | Turfloop granite | 2762 ± 5 Ma to 2768 ± 5 Ma | Henderson et al. (2000) |
| 70 | Goudplaats gneiss | 2767 ± 5 Ma | Laurent and Zeh (2015) |
| 71 | Turfloop granite | 2770 Ma and 2773 Ma | Laurent and Zeh (2015) |
| 72 | Rooibokvlei granodiorite | 2777 ± 35 Ma | Anhaeusser and Poujol (2004) |
| 73 | Kgale granite | 2779 ± 2.8 Ma | Grobler and Walraven (1993) |
| 74 | Granitic dike | 2779 ± 7 Ma | Laurent and Zeh (2015) |
| 75 | Kanye volcanic Formation | 2780 ± 2 Ma | Walraven et al. (1996) |
| 76 | Turfloop granite | 2782 ± 13 Ma | Zeh et al. (2009) |
| 77 | Gaborone granite | 2783 ± 4 Ma | Grobler and Walraven (1993) |
| 78 | Kgale granite | 2783 ± 2 Ma | Moore et al. (1993) |
| 79 | Kanye volcanics | 2783 ± 1.1 Ma to 2784 ± 1.8 Ma | Grobler and Walraven (1993); Moore et al. (1993) |
| 80 | Groot Letaba gneiss | 2784 ± 8 Ma | Zeh et al. (2009) |
| 81 | Granite vein; Goudplaats gneiss | 2790 ± 5 Ma | Laurent and Zeh (2015) |
| 82 | Mosita granite | 2791 ± 8 Ma | Poujol et al. (2000) |
| 83 | Lekkersmaak granite | 2795 ± 8 Ma | Zeh et al. (2009) |
| 84 | Rooibokvlei granodiorite | 2797 ± 2 Ma | Anhaeusser and Poujol (2004) |
| 85 | Post Giyani gneiss | 2810 ± 0.4 Ma | Kröner et al. (2000) |
| 86 | Kraaipan Formation | 2816 ± 16 Ma | Anhaeusser and Walraven (1999) |
| 87 | Archean granite, Polokwane area | 2820 Ma and 2821 Ma | Magwaza (2019) |
| 88 | Palmietfontein granite | 2828 ± 7 Ma | Laurent and Zeh (2015) |
| 89 | Majwana granite | 2830 ± 10 Ma | Sibiya (1998) |
| 90 | Turfloop batholith | 2830 ± 9 Ma | Laurent and Zeh (2015) |
| 91 | Meinhardskraal granite | 2833 ± 5 Ma | Laurent and Zeh (2015) |
| 92 | Groot Letaba gneiss | 2839 ± 8 Ma | Zeh et al. (2009) |
| 94 | Amalia granitoid | 2846 ± 22 Ma | Anhaeusser and Walraven (1997) |
| 95 | Meinhardskraal granite | 2841 ± 4 Ma | Laurent and Zeh (2015) |
| 96 | Murchison pegmatite | 2848 ± 58 Ma | Poujol and Robb (1999) |
| 97 | Draghoender gneiss granite | 2853 ± 4 Ma | McCourt and Armstrong (1998) |
| 98 | Melkboomfontein granite | 2853 ± 19 Ma | Kröner et al. (2000) |
| 99 | Quartz porphyry sill | 2873 ± 5 Ma | Gutzmer et al. (1999) |
| 100 | Post-Kraaipan granodiorite | 2879 ± 3 Ma | Poujol et al. (2000) |
| 101 | Granodioritic gneiss | 2880 ± 10 Ma | Laurent and Zeh (2015) |
| 102 | Trondhjemite gneiss | 2881 ± 7 Ma | Laurent and Zeh (2015) |
| 103 | Skalkseput granite | 2884 ± 22 Ma | Cornell et al. (2018) |
| 104 | Makoppa monzogranite | 2886 +3/-2 Ma | Anhaeusser and Poujol (2004) |
| 105 | Amalia intrusive granite | 2889 ± 2 Ma | Anhaeusser and Walraven (1997) |
| 106 | Granitoids SW margin of Kaapvaal Craton | 2900 Ma to 2910 Ma | Cornell et al. (2018) |
| 107 | Granitoids, Amalia Greenstone Belt | 2913 Ma and 2915 Ma | Poujol et al. (2002) |
| 108 | Maranda granite | 2901 ± 20 Ma | Poujol (2001) |
| 109 | Post-Kraaipan granodiorite | 2913 ± 15 Ma | Poujol et al. (2000) |
| 110 | Crown lavas | 2914 ± 8 Ma | Armstrong et al. (1991) |
| 111 | Schweizer-Reneke granite | 2927 ± 23/6 Ma | Robb et al. (1992) |
| 112 | Mabuasehube granitoid | 2928 ± 4 Ma | Kamo et al. (1995) |
| 113 | Nhlango gneiss | 2929 ± 5 Ma | Maphalala and Kröner (1993) |
| 114 | Ysterberg quartz porphyry | 2929 ± 26 Ma | Kröner et al. (2000) |
| 115 | Meriri gneiss | 2931 ± 8 Ma | Zeh et al. (2009) |
| 116 | Tonalite, Amalia Greenstone Belt | 2939 ± 45 Ma | Poujol et al. (2002) |
| 117 | Draghoender tonalite | 2940 ± 6 Ma | Cornell et al. (2018) |
| 118 | Turfloop Batholith gneiss | 2941 ± 6 Ma | Laurent and Zeh (2015) |
| 119 | Amphibolite | 2942 ± 8 Ma | Laurent and Zeh (2015) |
| 120 | Granodiorite gneiss | 2945 ± 4 Ma | Laurent and Zeh (2015) |
| 121 | Draghoender tonalite | 2946 ± 9 Ma | Cornell et al. (2018) |
| 122 | Halfway House granite | 2947 ± 57 Ma | Poujol and Anhaeusser (2001) |
| 123 | Trondhjemitic gneiss | 2953 ± 13 Ma | Laurent and Zeh (2015) |
| 124 | Groot Letaba gneiss | 2953 ± 68 Ma | Kröner et al. (2000) |
| 125 | Pre-Pietersburg granitoid | 2958 ± 2 Ma | De Wit et al. (1993) |
| 126 | Rubbervale Formation volcanics | 2966 ± 7 Ma | Zeh et al. (2013) |
| 127 | Rubbervale Formation volcanics | 2972 ± 7 Ma | Zeh et al. (2013) |
| 128 | Rubbervale Formation | 2969 ± 20 Ma | Poujol (2001) |
| 129 | Discovery granite | 2969 ± 17 Ma | Poujol (2001) |
| 130 | Matok granite | 2671 ± 2 Ma | Barton Jr et al. (1992) |
| 131 | Agatha Formation, Ntambo Member | 2977 ± 5 Ma | Nhleko (2003) |
| 132 | Ngwane gneiss | 2981 ± 30 Ma | Kröner et al. (1991) |
| 133 | Witwatersrand Supergroup | 2849 to 2985 Ma | Kositcin and Krapež (2004) |
| 134 | Vaalpenskraal trondhjemite gneiss | 3013 ± 11 Ma | Anhaeusser and Poujol (2004) |
| 135 | Vaalpenskraal trondhjemite gneiss | 3034 ± 64 Ma | Anhaeusser and Poujol (2004) |
| 136 | Cunningmore pluton | 3049 ± 8 Ma | Zeh et al. (2009) |
| 137 | Pre-Witwatersrand Supergroup basement | 3063 Ma to 3064 Ma | Frimmel et al. (2009) |
| 138 | Sincunusa granite | 3067 ± 12 Ma | Zeh et al. (2011) |
| 139 | Annandagstoppane granite, Grunehogna Terrane | 3067 ±8 Ma | Marschall et al. (2013) |
| 140 | Dominion Group volcanics | 3074 ± 6 Ma | Armstrong et al. (1991) |
| 141 | Mpuluzi batholith | 3082 ± 6 Ma | Zeh et al. (2009) |
| 142 | Madibe Greenstone Belt | 3082.5 ± 5.9 Ma | Poujol et al. (2008) |
| 143 | Boesmanskop syenite | 3097 ± 11Ma | Zeh et al. (2009) |
| 144 | Pigg’s Peak pluton | 3099 ± 8 Ma | Zeh et al. (2009) |
| 145 | Salisbury granite | 3100 ± 14 Ma | Zeh et al. (2009) |
| 146 | Mpuluzi batholith | 3167 Ma to 3100 Ma | Murphy (2015) |
| 147 | Sand River gneiss | 3181 ± 44 Ma to 3293 ± 2 Ma | Kröner et al. (1991) |
| 148 | Dalmein pluton | 3192 ± 27 Ma | Zeh et al. (2009) |
| 149 | Pietersburg block gneiss | 3213 ± 72 Ma | Vezinet (2017) |
| 150 | Mahamba gneiss | 3217 ± 8 Ma | Zeh et al. (2011) |
| 151 | Stentor pluton | 3218 ± 7 Ma | Zeh et al. (2009) |
| 152 | Piggs Peak batholith | 3221 ± 12 Ma | Zeh et al. (2011) |
| 153 | Onverwacht quartz porphyry | 3229 ± 4 Ma | Kamo and Davis (1994) |
| 154 | Pigg’s Peak batholith | 3230 ± 9 Ma | Zeh et al. (2011) |
| 155 | Kaap Valley pluton | 3231 ± 9 Ma | Zeh et al. (2009) |
| 156 | Granitoid, basement to Pongola Supergroup | 3234 ± 5 Ma | Reinhardt et al. (2015) |
| 157 | Fig Tree dacite | 3237 ± 3 Ma | Byerly et al. (1996) |
| 158 | Ancient Gneiss Complex | 3237 ± 7 Ma | Zeh et al. (2011) |
| 159 | Ngwane gneiss | 3238 ± 8 Ma | Zeh et al. (2009) |
| 160 | Nelshoogte pluton | 3238 ± 8 Ma | Zeh et al. (2009) |
| 161 | Dorothy gneiss | 3239 ± 2 Ma | Kröner et al. (1998) |
| 162 | Nkandla granite | 3254 ± 8 Ma | Hicks et al. (2015) |
| 163 | Granitoid basement to Pongola Supergroup | 3255 Ma | Reinhardt et al. (2015) |
| 164 | Goudplaats gneiss - rims | 3280 ± 7 Ma | Laurent and Zeh (2015) |
| 165 | Mendon volcanics | 3298 ± 3 Ma | Byerly et al. (1996) |
| 166 | Ancient Gneiss Complex | 3323 ±7 Ma | Zeh et al. (2011) |
| 167 | Goudplaats gneiss - cores | 3343 ± 7 Ma | Laurent and Zeh (2015) |
| 168 | Komati Formation gabbro | 3352 ± 6 Ma | Kamo and Davis (1994) |

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Table 2: Stratigraphic unit, age and reference for U-Pb zircon age data used to determine the possible source areas for the Korannaland Group.

| **No** | **Stratigraphic unit** | **Age** | **Reference** |
| --- | --- | --- | --- |
| 1 | Banke granodiorite | 1033 Ma crystallisation | Macey et al. (2018) |
| 2 | Little Namaqualand Suite, Modderfontein orthogneiss | Metamorphic 1032 ± 12Ma | Robb et al. (1999) |
| 3 | Spektakel Suite | 1033 to 1097 Ma | Macey et al. (2018) |
| 4 | Spektakel Suite, Vaalputs megacrystic granite | Emplacement 1056 ±1 0Ma | Ashwal et al. (1997) |
| 5 | Koperberg Suite, diorite | Magmatic 1057 ±8 Ma | Robb et al. (1999) |
| 6 | Jakkalshoek granite | 1062 Ma crystallisation | Macey et al. (2018) |
| 7 | Spektakel Suite, Rietberg granite | Magmatic 1058 ± 30 Ma | Robb et al. (1999) |
| 8 | Little Namaqualand Suite, granulite | Metamorphic 1063 ± 16 Ma | Robb et al. (1999) |
| 9 | Spektakel Suite, Concordia granite | Magmatic 1064 ± 31 Ma | Robb et al. (1999) |
| 10 | Koperberg Suite | 1069 ± 44 Ma | Clifford et al. (2004) |
| 11 | Friersdale charnockite, Keimoes Suite | 1078 ± 10 Ma | Cornell et al. (2012) |
| 12 | Keimoes Suite | 1078 to 1110 Ma | Bailie et al. (2017) |
| 13 | Koras Group maximum deposition age | 1090 Ma | Fitzpatrick (2017) |
| 14 | Leeuwdraai Formation, Koras Group | 1092 ± 9 Ma | Pettersson et al. (2007) |
| 15 | Little Namaqualand gneiss | 1109 ± 20 Ma | Raith et al. (2003) |
| 16 | Little Namaqualand gneiss (Stoffelkop) | 1111 ± 21 Ma | Raith et al. (2003) |
| 17 | Spektakel Suite, Vaalputs gneiss | Emplacement 1137 ± 17 Ma | Ashwal et al. (1997) |
| 18 | Jannelsepan Formation lava | 1142 ± 11 Ma | Bailie (2008) |
| 19 | Jannelsepan Formation migmatite | 1165 ± 10 Ma | Pettersson et al. (2007) |
| 20 | Korannaland Group, Kokerberg granite-gneiss | 1166 ± 15 Ma | van Niekerk et al. (2020) |
| 21 | Little Namaqualand Suite, granulite | Emplacement 1168 ± 9 Ma | Robb et al. (1999) |
| 22 | Koras Group, Swartkopsleegte quartz porphyry | 1172 ± 6 Ma | Gutzmer et al. (2000) |
| 23 | Swartkopsleegte Formation, Koras Group | 1173 ± 12 Ma | Pettersson (2008) |
| 24 | Spektakel Suite, Kweekfontien granite | 1186 ± 15 Ma | Clifford et al. (2004) |
| 25 | Little Namaqualand Suite, Modderfontein orthogneiss | Magmatic 1192 ± 12 Ma | Robb et al. (1999) |
| 26 | Koperberg Suite, anorthosite | Magmatic 1202 ± 25 Ma | Robb et al. (1999) |
| 27 | Spektakel Suite, Concordia granite | 1206 ± 16 Ma | Clifford et al. (2004) |
| 28 | Little Namaqualand Suite | 1210 to 1190 Ma | Macey et al. (2018) |
| 29 | Little Namaqualand Suite, Nababeep gneiss | Magmatic 1211 ± 11 Ma | Robb et al. (1999) |
| 30 | Areachap Terrane | 1240 to 1300 Ma | Bailie et al. (2010a) |
| 31 | Jannelsepan Formation volcanic rocks | 1261 ± 18 Ma | Bailie (2008) |
| 32 | Jannelsepan Formation volcanic rocks | 1275 ± 7 Ma | Cornell and Pettersson (2007) |
| 33 | Copperton Formation, Smouspan gneiss | 1285 ± 14 Ma | Cornell et al. (1990) |
| 34 | Leerkrans Formation | 1289 ± 9 Ma | Bailie et al. (2011a) |
| 35 | Wilgenhoutsdrif lava | 1290 ± 8 Ma | Moen and Armstrong (2008) |
| 26 | Kalkwerf gneiss | 1293 ± 9 Ma | Moen and Armstrong (2008) |
| 37 | Bushmanland Group deposition | 1650 and 2000 Ma | Bailie et al. (2007) |
| 38 | Gladkop Suite, Brandewynsbank gneiss | Magmatic 1822 ± 36 Ma | Robb et al. (1999) |
| 39 | Richtersveld Magmatic arc | 1910 to 1860 Ma | Macey et al. (2017) |

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