**Strauss, J.V., Macdonald, F.A., and McClelland, W.C., 2018, Pre-Mississippian stratigraphy and provenance of the North Slope subterrane of Arctic Alaska I: Platformal carbonate rocks of the northeastern Brooks Range and their significance in circum-Arctic evolution, in Piepjohn, K., Strauss, J.V., Reinhardt, L., and McClelland, W.C., eds., Circum-Arctic Structural Events: Tectonic Evolution of the Arctic Margins and Trans-Arctic Links with Adjacent Orogens: Geological Society of America Special Paper 541, https://doi.org/10.1130/2018.2541(22).**

**GSA Data Repository Item 2018270**

## ANALYTICAL METHODS

### *LA-ICPMS U-Pb Zircon Geochronology*

U-Pb isotopic ratios for zircon from three samples in the Shublik Mountains of the Brooks Range, Alaska, were analyzed by laser ablation-multicollector-inductively coupled plasma mass spectrometry (LA-MC-ICPMS) at the University of Arizona Laserchron Center (ALC) with a Nu high resolution(HR)-ICPMS and attached Photon Machines Analyte G2 Excimer laser with a HelEx ablation cell. Zircon was ablated using a spot diameter of 30 μm. Helium carrier gas carries ablated material into the plasma source of the Nu HR-ICPMS, which sequences rapidly through U, Th, and Pb isotopes. All measurements are made in static mode, using Faraday detectors with $3x10^{11}$ ohm resistors for $^{238}U$, $^{232}Th$, $^{208}Pb$-$^{206}Pb$, and discrete dynode ion counters for $^{204}Pb$ and $^{202}Hg$. Ion yields are ~0.8 mv per ppm. Each analysis consists of one 15-second integration on peaks with the laser off (for backgrounds), 15 one-second integrations with the laser firing, and a 30 second delay to purge the previous sample and prepare for the next analysis. The ablation pit is ~15 microns in depth.

Unknown analyses in the Shublik Mountain sample set were bracketed by the Sri Lanka ($^{206}Pb/^{238}U$ age of 563.2 ± 4.8 Ma, 2σ, Gehrels et al., 2008) and R33 ($^{206}Pb/^{238}U$ age of 420.53 ± 0.16 Ma, 2σ, Mattinson, 2010) standard zircons to assess reproducibility. Instrument setup, tuning, run parameters, standard-unknown bracketing, and data reduction followed that of Gehrels and Pecha (2014). Common Pb correction is accomplished by using the Hg-corrected $^{204}Pb$ and assuming an initial Pb composition from Stacey and Kramers (1975). Uncertainties of 1.5 for $^{206}Pb/^{204}Pb$ and 0.3 for $^{207}Pb/^{204}Pb$ are applied to these compositional values based on the variation in Pb isotopic composition in modern crystal rocks. For each analysis, the errors in determining $^{206}Pb/^{238}U$ and $^{206}Pb/^{204}Pb$ result in a measurement error of ~1-2% (at 2σ level) in the $^{206}Pb/^{238}U$ age. The errors in measurement of $^{206}Pb/^{207}Pb$ and $^{206}Pb/^{204}Pb$ also result in ~1-2% (at 2σ level) uncertainty in age for grains that are >1000 Ma, but are substantially larger for younger grains due to the low intensity of the $^{207}Pb$ signal.

***Zircon Lu-Hf Isotopic Analysis***

A subset of the detrital zircons were analyzed for Lu-Hf isotopic compositions using a Nu HR-ICPMS connected to a Photon Machines Analyte G2 excimer laser equipped with a HelEX cell at the Arizona LaserChron Center. Instrument settings are established first by analysis of 10 ppb solutions of JMC475 and a Spex Hf solution, and then by analysis of 10 ppb solutions containing Spex Hf, Yb, and Lu. The mixtures range in concentration of Yb and Lu, with $^{176}$(Yb+Lu) up to 70% of the $^{176}Hf$. When all solutions yield $^{176}Hf/^{177}Hf$ of ~0.28216, instrument settings are optimized for laser ablation analyses and seven different standard zircons (Mud Tank, 91500, Temora, R33, FC52, Plesovice, and Sri Lanka; Woodhead and Hergt, 2005; Sláma et al., 2008; Bahlburg et al., 2010; Vervoort, 2010) are analyzed. These standards are included with unknowns on the same epoxy mounts. When precision and accuracy are acceptable, unknowns are analyzed using exactly the same acquisition parameters.

In each analysis, a 40 μm diameter ablation site is centered over the previously excavated U–Pb analysis pit. The analytical routine consists of a 40 second on-peak background measurement, a 60 second laser ablation measurement, and a 15 second washout time. Using a typical laser effluence of ~5 J/cm$^2$ and pulse rate of 7 Hz, the ablation rate is ~0.8 microns per second. Unknown analyses were bracketed by reference standards every 20 spots. Instrument setup, tuning, run parameters, standard-unknown bracketing, and data reduction followed that of Gehrels and Pecha (2014).

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Table DR1. Carbonate carbon and oxygen isotopic data from pre-Mississippian strata in the NE Brooks Range, Alaska.

| Unit | Section | Stratigraphic Height | δ13C | δ18O | Unit | Section | Stratigraphic Height | δ13C | δ18O |
|---|---|---|---|---|---|---|---|---|---|
| Black Dog Formation | **J1001** | 0.1 | 0.12 | -3.01 | Sunset Pass Formation | **J1005** | 0.2 | -1.79 | -4.83 |
| Black Dog Formation | **J1001** | 1 | 0.17 | -1.57 | Sunset Pass Formation | **J1005** | 2 | -1.60 | -5.09 |
| Black Dog Formation | **J1001** | 2 | 0.17 | -1.33 | Sunset Pass Formation | **J1005** | 4 | 0.17 | -8.65 |
| Black Dog Formation | **J1001** | 3.9 | -0.35 | -4.20 | Sunset Pass Formation | **J1005** | 6 | -0.23 | -9.47 |
| Black Dog Formation | **J1001** | 5 | -0.45 | -6.11 | Sunset Pass Formation | **J1005** | 8 | -0.28 | -9.64 |
| Black Dog Formation | **J1001** | 6 | -0.68 | -5.65 | Sunset Pass Formation | **J1005** | 10 | -0.38 | -11.07 |
| Black Dog Formation | **J1001** | 7 | -1.06 | -6.03 | Sunset Pass Formation | **J1005** | 13 | -0.41 | -9.33 |
| Black Dog Formation | **J1001** | 8 | -1.28 | -5.75 | Sunset Pass Formation | **J1005** | 15 | -0.55 | -9.69 |
| Black Dog Formation | **J1001** | 9 | -1.09 | -5.46 | Sunset Pass Formation | **J1005** | 16.3 | -0.51 | -9.21 |
| Black Dog Formation | **J1001** | 9.5 | -0.99 | -5.49 | Sunset Pass Formation | **J1005** | 21.9 | 0.11 | -9.26 |
| Black Dog Formation | **J1001** | 10.5 | -1.19 | -4.88 | Sunset Pass Formation | **J1005** | 23 | 0.23 | -9.51 |
| Black Dog Formation | **J1001** | 10.8 | -1.22 | -4.82 | Sunset Pass Formation | **J1005** | 24.1 | 0.00 | -9.72 |
| Black Dog Formation | **J1001** | 18.5 | 1.13 | -4.87 | Sunset Pass Formation | **J1005** | 25 | 0.84 | -8.90 |
| Black Dog Formation | **J1001** | 19.5 | 1.78 | -3.56 | Sunset Pass Formation | **J1005** | 27 | 0.24 | -9.33 |
| Black Dog Formation | **J1001** | 20.5 | 1.27 | -3.56 | Sunset Pass Formation | **J1005** | 28 | 0.51 | -9.16 |
| Black Dog Formation | **J1001** | 21 | 1.12 | -3.87 | Sunset Pass Formation | **J1005** | 30 | 0.49 | -9.93 |
| Black Dog Formation | **J1001** | 22 | 0.90 | -3.18 | Sunset Pass Formation | **J1005** | 32 | 0.83 | -9.13 |
| Black Dog Formation | **J1001** | 23 | 0.77 | -2.80 | Sunset Pass Formation | **J1005** | 34 | 0.69 | -8.96 |
| Black Dog Formation | **J1001** | 24 | 0.81 | -2.85 | Sunset Pass Formation | **J1005** | 36 | 0.78 | -9.00 |
| Black Dog Formation | **J1001** | 26 | 1.31 | -2.78 | Sunset Pass Formation | **J1005** | 38 | 0.84 | -8.77 |
| Black Dog Formation | **J1001** | 27 | 1.40 | -2.77 | Sunset Pass Formation | **J1005** | 40 | 0.84 | -8.68 |
| Black Dog Formation | **J1001** | 28 | 1.11 | -3.29 | Sunset Pass Formation | **J1005** | 42 | 0.73 | -10.35 |
| Black Dog Formation | **J1001** | 29 | 0.28 | -4.32 | Sunset Pass Formation | **J1005** | 44 | 0.63 | -9.67 |
| Black Dog Formation | **J1001** | 30 | 0.16 | -4.21 | Sunset Pass Formation | **J1005** | 46 | 0.77 | -9.30 |
| Black Dog Formation | **J1001** | 31 | 0.39 | -3.80 | Sunset Pass Formation | **J1005** | 48 | 0.71 | -10.01 |
| Black Dog Formation | **J1001** | 32 | 0.47 | -2.92 | Sunset Pass Formation | **J1005** | 50 | 0.32 | -10.14 |
| Black Dog Formation | **J1001** | 33 | 1.03 | -3.76 | Sunset Pass Formation | **J1005** | 52 | 0.44 | -10.43 |
| Black Dog Formation | **J1001** | 34 | 0.96 | -3.51 | Sunset Pass Formation | **J1005** | 54 | 0.41 | -10.05 |
| Black Dog Formation | **J1001** | 35 | 1.33 | -6.03 | Sunset Pass Formation | **J1005** | 56 | 0.45 | -10.01 |
| Black Dog Formation | **J1001** | 36 | 1.62 | -4.07 | Sunset Pass Formation | **J1005** | 58 | 0.37 | -9.97 |
| Black Dog Formation | **J1001** | 40.2 | 1.01 | -4.06 | Sunset Pass Formation | **J1005** | 60 | 0.43 | -9.88 |
| Black Dog Formation | **J1001** | 40.7 | 1.68 | -3.73 | Sunset Pass Formation | **J1005** | 62 | 0.55 | -10.63 |
| Black Dog Formation | **J1001** | 41.2 | 1.78 | -3.79 | Sunset Pass Formation | **J1005** | 64 | 0.38 | -10.58 |
| Black Dog Formation | **J1001** | 42 | 1.61 | -4.05 | Sunset Pass Formation | **J1005** | 66 | 0.44 | -10.26 |
| Black Dog Formation | **J1001** | 43 | 1.73 | -3.75 | Sunset Pass Formation | **J1005** | 68 | 1.19 | -9.85 |
| Black Dog Formation | **J1001** | 44 | 1.89 | -3.87 | Sunset Pass Formation | **J1005** | 70 | 1.17 | -9.76 |
| Black Dog Formation | **J1001** | 45 | 1.73 | -3.82 | Sunset Pass Formation | **J1005** | 72 | 1.27 | -9.78 |
| Black Dog Formation | **J1001** | 46 | 1.04 | -4.01 | Sunset Pass Formation | **J1005** | 74 | 1.08 | -9.21 |
| Black Dog Formation | **J1001** | 48.5 | 1.46 | -3.31 | Sunset Pass Formation | **J1005** | 76 | 1.04 | -9.92 |

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|---|---|---|---|---|---|---|---|---|---|
| Black Dog Formation | **J1001** | 49.5 | 1.52 | -3.26 | Sunset Pass Formation | **J1005** | 78 | 0.67 | -9.40 |
| Black Dog Formation | **J1001** | 50 | 1.20 | -2.84 | Sunset Pass Formation | **J1005** | 80 | 0.75 | -9.37 |
| Black Dog Formation | **J1001** | 51 | 0.18 | -5.62 | Sunset Pass Formation | **J1005** | 82 | 0.92 | -8.61 |
| Black Dog Formation | **J1001** | 52 | -1.18 | -7.69 | Sunset Pass Formation | **J1005** | 84 | 0.88 | -9.03 |
| Black Dog Formation | **J1001** | 53 | -1.68 | -8.03 | Sunset Pass Formation | **J1005** | 86 | 0.89 | -8.39 |
| Black Dog Formation | **J1001** | 54 | -1.86 | -7.96 | Sunset Pass Formation | **J1005** | 88 | 0.73 | -8.87 |
| Black Dog Formation | **J1001** | 55 | -2.02 | -8.13 | Sunset Pass Formation | **J1005** | 90 | 0.91 | -9.01 |
| Black Dog Formation | **J1001** | 56 | -1.97 | -8.05 | Sunset Pass Formation | **J1005** | 92 | 0.77 | -8.99 |
| Black Dog Formation | **J1001** | 57 | -1.83 | -8.05 | Sunset Pass Formation | **J1005** | 94 | 0.63 | -9.23 |
| Black Dog Formation | **J1001** | 58 | -1.68 | -8.17 | Sunset Pass Formation | **J1005** | 96 | 0.60 | -9.66 |
| Black Dog Formation | **J1001** | 59 | -1.99 | -7.90 | Sunset Pass Formation | **J1005** | 98 | 0.58 | -9.44 |
| Black Dog Formation | **J1001** | 60 | -1.86 | -8.00 | Sunset Pass Formation | **J1005** | 100 | 0.59 | -9.18 |
| Black Dog Formation | **J1001** | 61 | -2.10 | -7.79 | Sunset Pass Formation | **J1005** | 102 | 0.54 | -9.67 |
| Black Dog Formation | **J1001** | 62 | -2.35 | -7.58 | Sunset Pass Formation | **J1005** | 104 | 0.17 | -9.74 |
| Black Dog Formation | **J1001** | 63 | -2.23 | -7.69 | Sunset Pass Formation | **J1005** | 106 | 0.82 | -8.86 |
| Black Dog Formation | **J1001** | 64 | -2.33 | -7.73 | Sunset Pass Formation | **J1005** | 108 | 0.96 | -9.12 |
| Black Dog Formation | **J1001** | 66 | -2.95 | -7.89 | Sunset Pass Formation | **J1005** | 110 | 0.78 | -9.42 |
| Black Dog Formation | **J1001** | 67 | -2.79 | -7.89 | Sunset Pass Formation | **J1005** | 111 | 0.81 | -9.34 |
| Black Dog Formation | **J1001** | 69 | -3.09 | -7.53 | Sunset Pass Formation | **J1005** | 111.6 | 0.68 | -9.41 |
| Black Dog Formation | **J1001** | 70 | -3.53 | -7.60 | Sunset Pass Formation | **J1005** | 111.8 | 1.01 | -8.91 |
| Black Dog Formation | **J1001** | 71 | -3.70 | -7.81 | Sunset Pass Formation | **J1005** | 112 | 0.97 | -9.31 |
| Black Dog Formation | **J1001** | 72 | -3.80 | -7.84 | Sunset Pass Formation | **J1005** | 114 | 0.99 | -9.23 |
| Black Dog Formation | **J1001** | 73 | -3.91 | -7.73 | Sunset Pass Formation | **J1005** | 116 | 1.10 | -8.71 |
| Black Dog Formation | **J1001** | 74 | -4.11 | -7.76 | Sunset Pass Formation | **J1005** | 118 | 0.83 | -8.72 |
| Black Dog Formation | **J1001** | 75 | -4.13 | -7.82 | Sunset Pass Formation | **J1005** | 120 | 1.10 | -9.37 |
| Black Dog Formation | **J1001** | 76 | -4.01 | -7.73 | Sunset Pass Formation | **J1005** | 122 | 0.92 | -9.26 |
| Black Dog Formation | **J1001** | 77 | -4.09 | -7.77 | Sunset Pass Formation | **J1005** | 124 | 0.98 | -9.25 |
| Black Dog Formation | **J1001** | 78 | -3.87 | -7.71 | Sunset Pass Formation | **J1005** | 126 | 0.89 | -9.36 |
| Black Dog Formation | **J1001** | 79 | -4.01 | -7.63 | Sunset Pass Formation | **J1005** | 128 | 1.21 | -9.12 |
| Black Dog Formation | **J1001** | 80 | -3.79 | -7.59 | Sunset Pass Formation | **J1005** | 130 | 1.26 | -9.29 |
| Black Dog Formation | **J1001** | 81 | -3.93 | -7.53 | Sunset Pass Formation | **J1005** | 132 | 1.44 | -9.57 |
| Black Dog Formation | **J1001** | 82 | -3.94 | -7.59 | Sunset Pass Formation | **J1005** | 134 | 1.24 | -9.26 |
| Black Dog Formation | **J1001** | 83 | -3.80 | -7.66 | Sunset Pass Formation | **J1005** | 136 | 1.48 | -9.06 |
| Black Dog Formation | **J1001** | 84 | -3.92 | -7.55 | Sunset Pass Formation | **J1005** | 138 | 1.44 | -8.65 |
| Black Dog Formation | **J1001** | 85 | -3.95 | -7.62 | Sunset Pass Formation | **J1005** | 140 | 1.75 | -9.87 |
| Black Dog Formation | **J1001** | 86.5 | -3.97 | -7.62 | Sunset Pass Formation | **J1005** | 142 | 1.53 | -9.51 |
| Black Dog Formation | **J1001** | 87.5 | -3.88 | -7.60 | Sunset Pass Formation | **J1005** | 144 | 1.54 | -8.91 |
| Black Dog Formation | **J1001** | 88.5 | -3.62 | -7.58 | Sunset Pass Formation | **J1005** | 146 | 1.25 | -9.20 |
| Black Dog Formation | **J1001** | 89.5 | -3.24 | -7.30 | Sunset Pass Formation | **J1005** | 148 | 1.30 | -9.01 |
| Black Dog Formation | **J1001** | 90 | -3.64 | -7.58 | Sunset Pass Formation | **J1005** | 150 | 0.64 | -9.00 |
| Black Dog Formation | **J1001** | 91 | -3.83 | -7.45 | Sunset Pass Formation | **J1005** | 152 | 0.66 | -9.22 |
| Black Dog Formation | **J1001** | 92 | -3.47 | -7.57 | Sunset Pass Formation | **J1005** | 154 | 0.53 | -9.67 |

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|---|---|---|---|---|---|---|---|---|---|
| Black Dog Formation | **J1001** | 93 | -3.44 | -7.60 | Sunset Pass Formation | **J1005** | 156 | 0.63 | -8.52 |
| Black Dog Formation | **J1001** | 94 | -3.14 | -7.47 | Sunset Pass Formation | **J1005** | 158 | 0.55 | -9.19 |
| Black Dog Formation | **J1001** | 94 | -3.09 | -7.45 | Sunset Pass Formation | **J1005** | 160 | 0.25 | -9.24 |
| Black Dog Formation | **J1001** | 95 | -3.21 | -7.51 | Sunset Pass Formation | **J1005** | 162 | 0.48 | -8.49 |
| Black Dog Formation | **J1001** | 96 | -3.08 | -7.43 | Sunset Pass Formation | **J1005** | 164 | 0.43 | -9.50 |
| Black Dog Formation | **J1001** | 97 | -3.33 | -7.54 | Sunset Pass Formation | **J1005** | 166 | 0.23 | -9.21 |
| Black Dog Formation | **J1001** | 98 | -3.39 | -7.30 | Sunset Pass Formation | **J1005** | 168 | 0.38 | -10.86 |
| Black Dog Formation | **J1001** | 99 | -3.34 | -7.74 | Sunset Pass Formation | **J1005** | 170 | 0.58 | -8.77 |
| Black Dog Formation | **J1001** | 100 | -3.21 | -7.30 | Sunset Pass Formation | **J1005** | 172 | 0.46 | -9.88 |
| Black Dog Formation | **J1001** | 101 | -3.13 | -7.18 | Sunset Pass Formation | **J1005** | 174 | 1.10 | -9.05 |
| Black Dog Formation | **J1001** | 102 | -3.20 | -7.19 | Sunset Pass Formation | **J1005** | 176 | 0.93 | -9.28 |
| Black Dog Formation | **J1001** | 103 | -3.17 | -7.01 | Sunset Pass Formation | **J1005** | 178 | 0.93 | -9.31 |
| Black Dog Formation | **J1001** | 104 | -2.48 | -7.18 | Sunset Pass Formation | **J1005** | 180 | 1.09 | -9.11 |
| Black Dog Formation | **J1001** | 105 | -1.21 | -6.07 | Sunset Pass Formation | **J1005** | 182 | 1.19 | -9.24 |
| Black Dog Formation | **J1001** | 106 | 0.20 | -6.78 | Sunset Pass Formation | **J1005** | 184 | 1.50 | -9.19 |
| Black Dog Formation | **J1001** | 107 | 1.91 | -6.87 | Sunset Pass Formation | **J1005** | 186 | 1.31 | -9.01 |
| Black Dog Formation | **J1001** | 108 | 2.36 | -6.45 | Sunset Pass Formation | **J1005** | 188 | 1.39 | -9.31 |
| Black Dog Formation | **J1001** | 109 | 2.15 | -6.76 | Sunset Pass Formation | **J1005** | 190 | 1.29 | -9.47 |
| Black Dog Formation | **J1001** | 110 | 1.57 | -6.61 | Sunset Pass Formation | **J1005** | 192 | 1.56 | -9.64 |
| Black Dog Formation | **J1001** | 111 | 2.04 | -6.64 | Sunset Pass Formation | **J1005** | 194 | 1.43 | -9.59 |
| Black Dog Formation | **J1001** | 112 | 2.30 | -6.50 | Sunset Pass Formation | **J1005** | 196 | 1.52 | -9.57 |
| Black Dog Formation | **J1001** | 113 | 1.80 | -7.24 | Sunset Pass Formation | **J1005** | 198 | 1.43 | -9.71 |
| Black Dog Formation | **J1001** | 114 | 1.75 | -7.17 | Sunset Pass Formation | **J1005** | 200 | 1.56 | -9.60 |
| Black Dog Formation | **J1001** | 115 | 1.44 | -7.25 | Sunset Pass Formation | **J1005** | 202 | -0.29 | -9.71 |
| Black Dog Formation | **J1001** | 116 | 1.54 | -7.15 | Sunset Pass Formation | **J1005** | 204 | 0.20 | -9.56 |
| Black Dog Formation | **J1001** | 117 | 1.59 | -7.19 | Sunset Pass Formation | **J1005** | 206 | -0.02 | -9.74 |
| Black Dog Formation | **J1001** | 118 | 1.78 | -6.99 | Sunset Pass Formation | **J1005** | 208 | -0.22 | -9.76 |
| Black Dog Formation | **J1001** | 119 | 2.71 | -4.90 | Sunset Pass Formation | **J1005** | 210 | -0.16 | -9.69 |
| Black Dog Formation | **J1001** | 120 | 3.62 | -7.15 | Sunset Pass Formation | **J1005** | 212 | -0.48 | -9.78 |
| Black Dog Formation | **J1001** | 121 | 3.84 | -7.00 | Sunset Pass Formation | **J1005** | 214 | -0.15 | -9.50 |
| Black Dog Formation | **J1001** | 122 | 3.07 | -7.56 | Sunset Pass Formation | **J1005** | 216 | -0.36 | -9.64 |
| Black Dog Formation | **J1001** | 123 | 3.59 | -7.29 | Sunset Pass Formation | **J1005** | 218 | -0.13 | -9.19 |
| Black Dog Formation | **J1001** | 124 | 2.41 | -6.90 | Sunset Pass Formation | **J1005** | 220 | -0.04 | -8.97 |
| Black Dog Formation | **J1001** | 125 | 1.89 | -7.14 | Sunset Pass Formation | **J1005** | 222 | -0.56 | -9.31 |
| Black Dog Formation | **J1001** | 126 | 1.43 | -7.45 | Sunset Pass Formation | **J1005** | 224 | -0.60 | -9.65 |
| Black Dog Formation | **J1001** | 127 | 2.34 | -6.78 | Sunset Pass Formation | **J1005** | 226 | -0.21 | -9.15 |
| Black Dog Formation | **J1001** | 128 | 1.72 | -7.43 | Sunset Pass Formation | **J1005** | 228 | 0.19 | -8.56 |
| Black Dog Formation | **J1001** | 130 | 1.06 | -7.58 | Sunset Pass Formation | **J1005** | 230 | 0.45 | -9.01 |
| Black Dog Formation | **J1001** | 131 | 1.55 | -7.34 | Sunset Pass Formation | **J1005** | 232 | -0.04 | -9.09 |
| Black Dog Formation | **J1001** | 132 | 0.96 | -7.53 | Sunset Pass Formation | **J1005** | 234 | -0.07 | -9.24 |
| Black Dog Formation | **J1001** | 133 | 0.49 | -7.59 | Sunset Pass Formation | **J1005** | 236 | 0.02 | -9.17 |
| Black Dog Formation | **J1001** | 134 | 0.30 | -7.53 | Sunset Pass Formation | **J1005** | 238 | 0.40 | -8.91 |

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|---|---|---|---|---|---|---|---|---|---|
| Black Dog Formation | **J1001** | 135 | 0.47 | -6.73 | Sunset Pass Formation | **J1005** | 240 | -0.29 | -9.32 |
| Black Dog Formation | **J1001** | 136 | 1.30 | -7.27 | Sunset Pass Formation | **J1005** | 242 | -0.51 | -9.16 |
| Black Dog Formation | **J1001** | 137 | 0.89 | -7.47 | Sunset Pass Formation | **J1005** | 244 | -0.45 | -9.27 |
| Black Dog Formation | **J1001** | 138 | 0.60 | -7.85 | Sunset Pass Formation | **J1005** | 246 | -0.91 | -9.14 |
| Black Dog Formation | **J1001** | 140 | 1.48 | -7.11 | Sunset Pass Formation | **J1005** | 248 | -0.71 | -9.57 |
| Black Dog Formation | **J1001** | 141 | 0.70 | -7.78 | Sunset Pass Formation | **J1005** | 250 | -0.39 | -9.33 |
| Black Dog Formation | **J1001** | 142 | 2.11 | -5.95 | Sunset Pass Formation | **J1005** | 252 | -0.61 | -8.97 |
| Black Dog Formation | **J1001** | 143 | 2.20 | -6.68 | Sunset Pass Formation | **J1005** | 254 | -0.55 | -9.39 |
| Black Dog Formation | **J1001** | 144 | 2.59 | -6.76 | Sunset Pass Formation | **J1005** | 256 | -0.67 | -9.29 |
| Black Dog Formation | **J1001** | 146 | 2.15 | -7.55 | Sunset Pass Formation | **J1005** | 258 | -0.63 | -9.25 |
| Black Dog Formation | **J1001** | 148 | 1.22 | -6.46 | Sunset Pass Formation | **J1005** | 260 | -0.54 | -9.26 |
| Black Dog Formation | **J1001** | 149 | 1.57 | -6.68 | Sunset Pass Formation | **J1005** | 262 | -0.62 | -9.22 |
| Black Dog Formation | **J1001** | 157.5 | 1.62 | -6.23 | Sunset Pass Formation | **J1005** | 264 | -0.57 | -9.46 |
| Black Dog Formation | **J1001** | 179 | 1.61 | -6.09 | Sunset Pass Formation | **J1005** | 268 | -0.31 | -9.24 |
| Black Dog Formation | **J1001** | 181 | 0.18 | -5.45 | Sunset Pass Formation | **J1005** | 270 | -0.04 | -8.75 |
| Black Dog Formation | **J1001** | 183 | 1.05 | -5.88 | Sunset Pass Formation | **J1005** | 272 | -0.17 | -8.33 |
| Black Dog Formation | **J1001** | 217 | 0.63 | -6.28 | Sunset Pass Formation | **J1005** | 274 | -0.27 | -8.55 |
| Black Dog Formation | **J1001** | 219 | -0.07 | -7.27 | Sunset Pass Formation | **J1005** | 276 | -0.17 | -8.63 |
| Black Dog Formation | **J1001** | 221 | -0.26 | -4.77 | Sunset Pass Formation | **J1005** | 278 | -0.31 | -8.64 |
| Black Dog Formation | **J1001** | 223 | 0.38 | -4.44 | Sunset Pass Formation | **J1005** | 280 | -0.02 | -8.36 |
| Black Dog Formation | **J1001** | 225 | 0.78 | -4.97 | Sunset Pass Formation | **J1005** | 282 | -0.33 | -8.79 |
| Black Dog Formation | **J1001** | 227 | 0.73 | -4.57 | Sunset Pass Formation | **J1005** | 284 | -0.01 | -9.15 |
| Black Dog Formation | **J1001** | 248 | 0.32 | -4.66 | Sunset Pass Formation | **J1005** | 286 | 0.12 | -8.27 |
| Black Dog Formation | **J1001** | 250 | 0.46 | -4.88 | Sunset Pass Formation | **J1005** | 288 | -0.05 | -7.88 |
| Black Dog Formation | **J1001** | 252 | 1.06 | -5.93 | Sunset Pass Formation | **J1005** | 290 | 0.07 | -8.38 |
| Black Dog Formation | **J1001** | 254 | 0.82 | -5.47 | Sunset Pass Formation | **J1005** | 292 | -0.19 | -8.02 |
| Black Dog Formation | **J1001** | 256 | 0.84 | -5.63 | Sunset Pass Formation | **J1005** | 294 | -0.07 | -8.19 |
| Black Dog Formation | **J1001** | 258 | 0.80 | -4.67 | Sunset Pass Formation | **J1005** | 296 | -0.22 | -8.50 |
| Black Dog Formation | **J1001** | 260 | 0.32 | -5.30 | Sunset Pass Formation | **J1005** | 298 | -0.10 | -7.99 |
| Black Dog Formation | **J1001** | 262 | -0.10 | -4.78 | Sunset Pass Formation | **J1005** | 300 | -0.02 | -8.39 |
| Black Dog Formation | **J1001** | 264 | -0.17 | -4.81 | Sunset Pass Formation | **J1005** | 302 | 0.30 | -7.84 |
| Black Dog Formation | **J1001** | 266 | -0.31 | -5.03 | Sunset Pass Formation | **J1005** | 304 | -0.29 | -8.29 |
| Black Dog Formation | **J1001** | 268 | -0.07 | -4.82 | Sunset Pass Formation | **J1005** | 306 | -0.14 | -8.40 |
| Black Dog Formation | **J1001** | 270 | -0.24 | -4.86 | Sunset Pass Formation | **J1005** | 308 | -0.17 | -7.68 |
| Black Dog Formation | **J1001** | 273 | -0.32 | -5.29 | Sunset Pass Formation | **J1005** | 310 | -0.60 | -8.29 |
| Black Dog Formation | **J1001** | 275 | -0.14 | -5.72 | Sunset Pass Formation | **J1005** | 312 | -0.48 | -7.89 |
| Black Dog Formation | **J1001** | 277 | -0.46 | -5.49 | Sunset Pass Formation | **J1005** | 314 | -0.33 | -8.74 |
| Black Dog Formation | **J1001** | 279 | -0.09 | -6.26 | Sunset Pass Formation | **J1005** | 316 | 0.38 | -8.51 |
| Black Dog Formation | **J1001** | 281 | -0.15 | -6.49 | Sunset Pass Formation | **J1005** | 316.5 | -1.33 | -5.32 |
| Black Dog Formation | **J1001** | 283 | -0.19 | -6.35 | Sunset Pass Formation | **J1005** | 318 | 0.38 | -7.91 |
| Black Dog Formation | **J1001** | 285 | -0.59 | -5.20 | Sunset Pass Formation | **J1005** | 318.5 | -1.15 | -4.66 |
| Black Dog Formation | **J1001** | 287 | -0.69 | -5.51 | Sunset Pass Formation | **J1005** | 320 | 0.04 | -8.54 |

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|---|---|---|---|---|---|---|---|---|---|
| Black Dog Formation | **J1001** | 289 | -0.45 | -6.18 | Sunset Pass Formation | **J1005** | 320.5 | -1.77 | -4.99 |
| Black Dog Formation | **J1001** | 291 | -0.35 | -5.87 | Sunset Pass Formation | **J1005** | 322 | 0.25 | -8.04 |
| Black Dog Formation | **J1001** | 293 | -0.04 | -5.09 | Sunset Pass Formation | **J1005** | 322.5 | -1.94 | -5.38 |
| Black Dog Formation | **J1001** | 295 | 0.20 | -3.49 | Sunset Pass Formation | **J1005** | 324 | -0.22 | -8.52 |
| Black Dog Formation | **J1001** | 297 | 0.01 | -5.84 | Sunset Pass Formation | **J1005** | 324.5 | -0.62 | -5.19 |
| Black Dog Formation | **J1001** | 299 | -0.16 | -6.09 | Sunset Pass Formation | **J1005** | 326 | -0.33 | -7.22 |
| Black Dog Formation | **J1001** | 301 | 0.35 | -6.55 | Sunset Pass Formation | **J1005** | 328 | -0.74 | -7.88 |
| Black Dog Formation | **J1001** | 303 | 0.50 | -5.41 | Sunset Pass Formation | **J1005** | 330 | -0.19 | -6.88 |
| Black Dog Formation | **J1001** | 305 | 0.27 | -6.45 | Sunset Pass Formation | **J1005** | 332 | -0.68 | -7.85 |
| Black Dog Formation | **J1001** | 307 | -0.45 | -5.97 | Sunset Pass Formation | **J1005** | 334 | -0.70 | -8.71 |
| Black Dog Formation | **J1001** | 309 | -0.46 | -5.56 | Sunset Pass Formation | **J1005** | 346 | -0.71 | -6.74 |
| Black Dog Formation | **J1001** | 312 | -0.18 | -3.97 | Sunset Pass Formation | **J1005** | 348 | -0.87 | -7.87 |
| Black Dog Formation | **J1001** | 314 | 0.00 | -5.91 | Sunset Pass Formation | **J1005** | 350 | -0.85 | -6.53 |
| Black Dog Formation | **J1001** | 316 | -0.40 | -5.77 | Sunset Pass Formation | **J1005** | 352 | -0.49 | -5.93 |
| Black Dog Formation | **J1001** | 330 | -0.47 | -6.92 | Sunset Pass Formation | **J1005** | 354 | -0.94 | -6.26 |
| Black Dog Formation | **J1001** | 332 | 0.99 | -5.50 | Sunset Pass Formation | **J1005** | 357 | -0.88 | -8.20 |
| Black Dog Formation | **J1001** | 334 | 0.93 | -5.30 | Sunset Pass Formation | **J1005** | 359 | -0.35 | -5.98 |
| Black Dog Formation | **J1001** | 338 | 0.52 | -6.13 | Sunset Pass Formation | **J1005** | 361 | -1.33 | -7.03 |
| Black Dog Formation | **J1001** | 368 | -1.15 | -6.96 | Sunset Pass Formation | **J1005** | 363 | -0.46 | -6.42 |
| Black Dog Formation | **J1001** | 397 | -1.06 | -9.53 | Sunset Pass Formation | **J1005** | 365 | 0.11 | -6.63 |
| Black Dog Formation | **J1001** | 399 | -0.76 | -7.27 | Sunset Pass Formation | **J1005** | 367 | -0.79 | -6.27 |
| Black Dog Formation | **J1001** | 401 | -0.32 | -8.37 | Sunset Pass Formation | **J1005** | 369 | -0.67 | -5.95 |
| Black Dog Formation | **J1001** | 403 | -0.64 | -7.77 | Sunset Pass Formation | **J1005** | 371 | -0.71 | -6.43 |
| Black Dog Formation | **J1001** | 405 | 0.61 | -7.47 | Sunset Pass Formation | **J1005** | 373 | -1.33 | -6.78 |
| Black Dog Formation | **J1001** | 409 | -1.19 | -8.54 | Sunset Pass Formation | **J1005** | 375 | -0.38 | -6.14 |
| Black Dog Formation | **J1001** | 411 | -0.97 | -8.40 | Sunset Pass Formation | **J1005** | 377 | -0.56 | -6.92 |
| Black Dog Formation | **J1001** | 413 | -0.96 | -8.51 | Sunset Pass Formation | **J1005** | 379 | -0.98 | -7.73 |
| Black Dog Formation | **J1001** | 417 | -0.94 | -6.62 | Sunset Pass Formation | **J1005** | 381 | -0.41 | -6.62 |
| Black Dog Formation | **J1001** | 419 | 0.33 | -6.45 | Sunset Pass Formation | **J1005** | 383 | -0.01 | -5.66 |
| Black Dog Formation | **J1001** | 421 | -0.42 | -7.89 | Sunset Pass Formation | **J1005** | 385 | 0.14 | -5.97 |
| Black Dog Formation | **J1001** | 444 | -0.04 | -5.44 | Sunset Pass Formation | **J1005** | 387 | -0.19 | -6.41 |
| Black Dog Formation | **J1001** | 446 | -0.47 | -5.94 | Sunset Pass Formation | **J1005** | 389 | -0.51 | -6.17 |
| Black Dog Formation | **J1001** | 448 | -0.90 | -6.45 | Sunset Pass Formation | **J1005** | 391 | -0.80 | -6.79 |
| Black Dog Formation | **J1001** | 450 | -1.52 | -5.64 | Sunset Pass Formation | **J1005** | 393 | -3.83 | -7.27 |
| Black Dog Formation | **J1001** | 452 | -2.04 | -5.30 | Sunset Pass Formation | **J1005** | 395 | -2.63 | -7.59 |
| Black Dog Formation | **J1001** | 462 | -1.44 | -4.66 | Sunset Pass Formation | **J1005** | 399 | -2.11 | -5.20 |
| Black Dog Formation | **J1001** | 464 | -1.20 | -4.37 | Sunset Pass Formation | **J1005** | 401 | -2.32 | -7.19 |
| Black Dog Formation | **J1001** | 466 | -1.59 | -4.46 | Sunset Pass Formation | **J1005** | 406 | -1.37 | -4.86 |
| Black Dog Formation | **J1001** | 468 | -0.91 | -5.07 | Sunset Pass Formation | **J1005** | 410 | -2.44 | -5.26 |
| Black Dog Formation | **J1001** | 470 | -0.71 | -5.19 | Sunset Pass Formation | **J1005** | 412 | -1.98 | -4.84 |
| Black Dog Formation | **J1001** | 472 | -0.64 | -4.57 | | | | | |
| Black Dog Formation | **J1001** | 474 | -0.27 | -5.26 | Mount Weller Group | **F1144** | 0.5 | 2.98 | -5.81 |

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|---|---|---|---|---|---|---|---|---|---|
| Black Dog Formation | **J1001** | 476 | -1.21 | -4.85 | Mount Weller Group | **F1144** | 2 | 3.65 | -5.33 |
| Black Dog Formation | **J1001** | 478 | -1.49 | -4.67 | Mount Weller Group | **F1144** | 4 | 4.02 | -5.69 |
| Black Dog Formation | **J1001** | 480 | -2.11 | -4.92 | Mount Weller Group | **F1144** | 6 | 4.09 | -6.44 |
| Black Dog Formation | **J1001** | 482 | -1.96 | -5.11 | Mount Weller Group | **F1144** | 8 | 4.35 | -6.40 |
| Black Dog Formation | **J1001** | 484 | -1.80 | -6.25 | Mount Weller Group | **F1144** | 10 | 4.27 | -6.47 |
| Black Dog Formation | **J1001** | 486 | -1.52 | -4.64 | Mount Weller Group | **F1144** | 11.6 | 4.58 | -5.84 |
| Black Dog Formation | **J1001** | 488 | -0.87 | -6.36 | Mount Weller Group | **F1144** | 14 | 4.42 | -5.09 |
| Black Dog Formation | **J1001** | 490 | -1.98 | -4.65 | Mount Weller Group | **F1144** | 16 | 4.26 | -4.40 |
| Black Dog Formation | **J1001** | 492 | -1.95 | -4.12 | Mount Weller Group | **F1144** | 18 | 4.14 | -4.15 |
| Black Dog Formation | **J1001** | 494 | -1.12 | -4.33 | Mount Weller Group | **F1144** | 19.5 | 4.20 | -8.01 |
| Black Dog Formation | **J1001** | 496 | -0.19 | -5.05 | Mount Weller Group | **F1144** | 22 | 4.52 | -6.97 |
| Black Dog Formation | **J1001** | 498 | -0.81 | -4.83 | Mount Weller Group | **F1144** | 24 | 4.01 | -8.28 |
| Black Dog Formation | **J1001** | 500 | -1.37 | -4.61 | Mount Weller Group | **F1144** | 31.7 | 4.36 | -8.53 |
| Black Dog Formation | **J1001** | 504 | -1.44 | -5.19 | Mount Weller Group | **F1144** | 34 | 4.89 | -8.19 |
| Black Dog Formation | **J1001** | 506 | -1.19 | -5.11 | Mount Weller Group | **F1144** | 36 | 5.26 | -8.60 |
| Black Dog Formation | **J1001** | 508 | -0.65 | -5.25 | Mount Weller Group | **F1144** | 38 | 4.29 | -8.58 |
| Black Dog Formation | **J1001** | 510 | -0.49 | -5.77 | Mount Weller Group | **F1144** | 40 | 5.18 | -8.52 |
| Black Dog Formation | **J1001** | 512 | -1.18 | -5.84 | Mount Weller Group | **F1144** | 42 | 5.57 | -8.66 |
| Black Dog Formation | **J1001** | 514 | -0.33 | -5.68 | Mount Weller Group | **F1144** | 44 | 5.19 | -8.41 |
| Black Dog Formation | **J1001** | 518 | -0.04 | -5.65 | Mount Weller Group | **F1144** | 46 | 4.50 | -8.49 |
| Black Dog Formation | **J1001** | 520 | -0.63 | -5.11 | Mount Weller Group | **F1144** | 48 | 5.13 | -8.50 |
| Black Dog Formation | **J1001** | 522 | 0.13 | -6.14 | Mount Weller Group | **F1144** | 51 | 4.41 | -8.74 |
| | | | | | Mount Weller Group | **F1144** | 56 | 3.55 | -9.31 |
| Katakturuk – K1 | **F1141** | 4.5 | -0.47 | -6.57 | Mount Weller Group | **F1144** | 74.5 | 4.24 | -8.93 |
| Katakturuk – K1 | **F1141** | 5.5 | -0.73 | -7.26 | Mount Weller Group | **F1144** | 78 | 4.20 | -8.38 |
| Katakturuk – K1 | **F1141** | 6 | -0.13 | -5.04 | Mount Weller Group | **F1144** | 81 | 4.92 | -8.38 |
| Katakturuk – K1 | **F1141** | 6.5 | 0.47 | -4.86 | Mount Weller Group | **F1144** | 86 | 4.89 | -8.10 |
| Katakturuk – K1 | **F1141** | 7 | 0.16 | -4.83 | Mount Weller Group | **F1144** | 89 | 5.06 | -7.93 |
| Katakturuk – K1 | **F1141** | 7.5 | -0.38 | -4.30 | Mount Weller Group | **F1144** | 95 | 4.52 | -7.70 |
| Katakturuk – K1 | **F1141** | 8 | 0.16 | -3.28 | Mount Weller Group | **F1144** | 100 | 4.71 | -7.34 |
| Katakturuk – K1 | **F1141** | 8.5 | -0.57 | -4.88 | Mount Weller Group | **F1144** | 104 | 5.14 | -6.85 |
| Katakturuk – K1 | **F1141** | 9 | -0.81 | -5.04 | Mount Weller Group | **F1144** | 108 | 5.23 | -6.71 |
| Katakturuk – K1 | **F1141** | 9.5 | -0.45 | -2.82 | Mount Weller Group | **F1144** | 112 | 5.31 | -6.75 |
| Katakturuk – K1 | **F1141** | 10 | -1.55 | -3.55 | Mount Weller Group | **F1144** | 117 | 5.35 | -6.53 |
| Katakturuk – K1 | **F1141** | 10.5 | -1.08 | -3.64 | Mount Weller Group | **F1144** | 120 | 5.10 | -7.33 |
| Katakturuk – K1 | **F1141** | 11 | -1.15 | -3.06 | Mount Weller Group | **F1144** | 124 | 5.43 | -7.35 |
| Katakturuk – K1 | **F1141** | 11.5 | -0.94 | -2.41 | Mount Weller Group | **F1144** | 128 | 5.53 | -6.91 |
| Katakturuk – K1 | **F1141** | 12 | -0.65 | -3.39 | Mount Weller Group | **F1144** | 132 | 5.26 | -6.92 |
| Katakturuk – K1 | **F1141** | 12.5 | -1.05 | -4.04 | Mount Weller Group | **F1144** | 136 | 5.45 | -6.65 |
| Katakturuk – K1 | **F1141** | 13 | -0.63 | -2.51 | Mount Weller Group | **F1144** | 140 | 5.15 | -7.29 |
| Katakturuk – K1 | **F1141** | 13.5 | -0.48 | -2.17 | Mount Weller Group | **F1144** | 144 | 5.19 | -7.23 |
| Katakturuk – K1 | **F1141** | 14 | -0.33 | -1.87 | Mount Weller Group | **F1144** | 150 | 4.56 | -6.46 |

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|---|---|---|---|---|
| Katakturuk – K1 | **F1141** | 14.5 | -0.10 | -1.98 |
| Katakturuk – K1 | **F1141** | 15 | -0.55 | -4.73 |
| Katakturuk – K1 | **F1141** | 15.5 | -0.53 | -3.91 |
| Katakturuk – K1 | **F1141** | 16 | -0.13 | -2.23 |
| Katakturuk – K1 | **F1141** | 16.5 | 0.25 | -5.03 |
| Katakturuk – K1 | **F1141** | 17 | 0.17 | -5.61 |
| Katakturuk – K1 | **F1141** | 17.5 | 0.33 | -5.71 |
| Katakturuk – K1 | **F1141** | 18 | 1.31 | -1.38 |
| Katakturuk – K1 | **F1141** | 18.5 | 0.35 | -1.12 |
| Katakturuk – K1 | **F1141** | 19 | 0.69 | -0.90 |
| Katakturuk – K1 | **F1141** | 19.5 | 0.34 | -0.81 |
| Katakturuk – K1 | **F1141** | 20 | 1.21 | -1.14 |
| Katakturuk – K1 | **F1141** | 21 | 0.71 | -0.61 |
| Katakturuk – K1 | **F1141** | 22 | 1.39 | -0.79 |
| Katakturuk – K1 | **F1141** | 22.5 | 1.33 | -1.13 |
| Katakturuk – K1 | **F1141** | 23 | 1.65 | -0.74 |
| Katakturuk – K1 | **F1141** | 24 | 1.66 | -0.77 |
| | | | | |
| Mount Weller Group | **F1143** | 2.3a | 0.74 | -3.45 |
| Mount Weller Group | **F1143** | 2.3b | -0.96 | -4.50 |
| Mount Weller Group | **F1143** | 2.3m | 1.87 | -4.57 |
| Mount Weller Group | **F1143** | 2.3c | 5.01 | -5.69 |
| Mount Weller Group | **F1143** | 2.3d | 2.06 | -7.14 |
| Mount Weller Group | **F1143** | 4a | 3.53 | -4.64 |
| Mount Weller Group | **F1143** | 4b | -1.36 | -4.54 |
| Mount Weller Group | **F1143** | 4c | -1.86 | -4.75 |
| Mount Weller Group | **F1143** | 4d | -0.78 | -5.40 |
| Mount Weller Group | **F1143** | 4e | 2.23 | -5.29 |
| Mount Weller Group | **F1143** | 4f | 2.64 | -5.52 |
| Mount Weller Group | **F1143** | 4g | 2.54 | -5.38 |
| Mount Weller Group | **F1143** | 4h | -1.96 | -4.94 |
| Mount Weller Group | **F1143** | 4i | -1.45 | -5.36 |
| Mount Weller Group | **F1143** | 4m | 2.09 | -5.30 |

| | | | | |
|---|---|---|---|---|
| Mount Weller Group | **F1144** | 154 | 5.47 | -6.58 |
| Mount Weller Group | **F1144** | 158 | 5.20 | -6.11 |
| Mount Weller Group | **F1144** | 160 | 4.19 | -6.42 |
| Mount Weller Group | **F1144** | 170 | 4.27 | -6.37 |
| Mount Weller Group | **F1144** | 176 | 4.30 | -6.26 |
| Mount Weller Group | **F1144** | 182 | 3.35 | -6.46 |
| Mount Weller Group | **F1144** | 187 | 4.00 | -6.49 |

Table DR2. Major and trace element data from the Mount Weller Group and Black Dog and Ikiakpuk formations, Brooks Range, Alaska.

| | Ag | Al | As | Ba | Be | Bi | Ca | Cd | Co | Cr | Cu | Fe | Hg | K | La | Li | Mg | Mn | Mo | Na | Ni | P | Pb | S | Sb | Sc | Sn | Sr | Ti | V | W | Y | Zn | Zr |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ppm | % | ppm | ppm | ppm | ppm | % | ppm | ppm | ppm | ppm | % | ppm | % | ppm | ppm | % | ppm | ppm | % | ppm | % | ppm | % | ppm | ppm | ppm | ppm | % | ppm | ppm | ppm | ppm | ppm |
| **J1001 2.0** | <2 | 0.09 | <3 | 8 | <0.5 | <5 | >15 | <1 | <1 | 2 | <0.5 | 0.11 | <1 | 0.04 | 1.4 | 1 | 13 | 31 | <1 | 0.03 | <1 | <0.01 | <2 | <0.01 | <5 | <0.5 | <10 | 63 | <0.01 | 2 | <10 | 0.9 | <1 | 1.3 |
| **J1001 7.0** | <2 | 0.04 | <3 | 6 | <0.5 | <5 | >15 | <1 | <1 | 4 | <0.5 | 0.14 | <1 | 0.02 | 1.6 | <1 | 12.9 | 41 | <1 | 0.02 | <1 | <0.01 | <2 | <0.01 | <5 | <0.5 | <10 | 80 | <0.01 | 4 | <10 | 1 | 1 | 0.9 |
| **J1001 31.0** | <2 | 0.03 | 9 | <5 | <0.5 | <5 | >15 | <1 | <1 | 2 | <0.5 | 0.53 | <1 | 0.01 | 6.3 | 1 | 12.2 | 112 | <1 | 0.02 | 2 | 0.01 | <2 | 0.01 | <5 | 1 | <10 | 75 | <0.01 | 2 | <10 | 3.6 | 3 | 0.6 |
| **J1001 19.5** | <2 | 0.03 | 10 | 7 | <0.5 | <5 | >15 | <1 | <1 | 2 | <0.5 | 0.29 | <1 | 0.01 | 2.3 | 1 | 11.9 | 39 | 1 | 0.02 | <1 | <0.01 | <2 | 0.01 | <5 | <0.5 | <10 | 105 | <0.01 | 1 | <10 | 1.4 | <1 | 1.9 |
| **J1001 27.0** | <2 | 0.05 | 6 | 7 | <0.5 | <5 | >15 | <1 | <1 | 2 | <0.5 | 0.24 | <1 | 0.02 | 3 | 2 | 12.7 | 71 | <1 | 0.02 | 4 | 0.1 | <2 | <0.01 | <5 | <0.5 | <10 | 79 | <0.01 | 6 | <10 | 2.4 | 1 | 2 |
| **J1001 58** | <2 | 0.1 | 3 | 10 | <0.5 | <5 | >15 | <1 | 1 | 2 | 7.7 | 0.14 | <1 | 0.07 | 5 | <1 | 0.29 | 104 | <1 | 0.01 | 1 | 0.01 | <2 | <0.01 | <5 | 0.7 | <10 | 1140 | <0.01 | 2 | <10 | 1.7 | 2 | 1.4 |
| **J1001 36** | <2 | 0.03 | <3 | 8 | <0.5 | <5 | >15 | <1 | 3 | 2 | 1.1 | 0.52 | <1 | 0.02 | 5.5 | <1 | 11.6 | 201 | <1 | 0.03 | 36 | 0.03 | <2 | <0.01 | <5 | 0.7 | <10 | 92 | <0.01 | 3 | <10 | 3.7 | 9 | <0.5 |
| **J1001 41.2** | <2 | 0.21 | <3 | 14 | <0.5 | <5 | >15 | <1 | 3 | 3 | 2.7 | 0.6 | <1 | 0.14 | 4 | 2 | 8.12 | 255 | <1 | 0.02 | 95 | 0.02 | <2 | 0.01 | <5 | 1.4 | <10 | 97 | <0.01 | 2 | <10 | 3 | 8 | 1.3 |
| **J1001 48.5** | <2 | 0.13 | 4 | 7 | <0.5 | <5 | >15 | <1 | 2 | 2 | 0.7 | 0.5 | <1 | 0.09 | 4.8 | <1 | 10.4 | 172 | <1 | 0.02 | 6 | 0.01 | <2 | <0.01 | <5 | 1.1 | <10 | 109 | <0.01 | 3 | <10 | 2.6 | 8 | 0.9 |
| **J1001 53.0** | <2 | 0.08 | <3 | 6 | <0.5 | <5 | >15 | <1 | <1 | 1 | 0.8 | 0.15 | <1 | 0.06 | 4.4 | <1 | 0.35 | 118 | <1 | 0.01 | 1 | <0.01 | <2 | <0.01 | <5 | <0.5 | <10 | 749 | <0.01 | 2 | <10 | 1.5 | 2 | 0.7 |
| **J1001 63.0** | <2 | 0.04 | <3 | <5 | <0.5 | <5 | >15 | <1 | <1 | 1 | 1.3 | 0.14 | <1 | 0.03 | 4.8 | <1 | 0.25 | 109 | <1 | 0.01 | <1 | 0.02 | <2 | <0.01 | <5 | 0.6 | <10 | 1020 | <0.01 | <1 | <10 | 1.8 | 2 | 0.7 |
| **J1001 67.0** | <2 | 0.06 | <3 | <5 | <0.5 | <5 | >15 | <1 | <1 | 2 | 25 | 0.12 | <1 | 0.06 | 7.4 | <1 | 0.26 | 106 | <1 | 0.01 | <1 | 0.02 | 8 | 0.01 | <5 | 1.4 | <10 | 585 | <0.01 | 1 | <10 | 2.8 | 3 | 1.3 |
| **J1001 69.0** | <2 | 0.05 | <3 | 10 | <0.5 | <5 | >15 | 3 | <1 | 1 | 1.7 | 0.14 | <1 | 0.05 | 6.6 | <1 | 0.21 | 118 | <1 | 0.01 | <1 | 0.02 | 3 | <0.01 | <5 | 1 | <10 | 479 | <0.01 | 1 | <10 | 3 | 5 | 1.1 |
| **J1001 75.0** | <2 | 0.19 | <3 | 9 | <0.5 | <5 | >15 | <1 | <1 | 2 | 2.7 | 0.29 | <1 | 0.12 | 5.7 | 2 | 0.31 | 113 | <1 | 0.01 | 1 | 0.01 | <2 | 0.01 | <5 | 1.3 | <10 | 365 | <0.01 | 3 | <10 | 2.2 | 4 | 0.9 |
| **J1001 82.0** | <2 | 0.06 | 7 | <5 | <0.5 | <5 | >15 | <1 | <1 | <1 | 1.5 | 0.12 | <1 | 0.05 | 5.7 | <1 | 0.26 | 186 | <1 | 0.01 | <1 | 0.03 | <2 | 0.01 | <5 | 0.8 | <10 | 352 | <0.01 | <1 | <10 | 2.8 | 1 | <0.5 |
| **J1001 86.0** | <2 | 0.3 | 4 | 10 | <0.5 | <5 | >15 | <1 | <1 | 3 | 0.9 | 0.19 | <1 | 0.18 | 5.6 | 2 | 0.3 | 220 | <1 | 0.01 | 2 | <0.01 | <2 | <0.01 | <5 | 1.2 | <10 | 406 | <0.01 | 3 | <10 | 2.4 | 4 | 1.6 |
| **J1001 94** | <2 | 0.14 | <3 | <5 | <0.5 | <5 | >15 | <1 | <1 | 1 | 2.7 | 0.13 | <1 | 0.09 | 3.5 | <1 | 0.25 | 174 | <1 | 0.01 | <1 | 0.01 | <2 | 0.01 | <5 | 0.7 | <10 | 415 | <0.01 | 1 | <10 | 1.5 | 2 | 0.5 |
| **J1001 101** | <2 | 0.06 | <3 | <5 | <0.5 | <5 | >15 | <1 | <1 | 2 | 5.1 | 0.11 | <1 | 0.06 | 4.3 | <1 | 0.3 | 138 | <1 | 0.01 | 1 | 0.02 | <2 | 0.02 | <5 | 0.8 | <10 | 398 | <0.01 | <1 | <10 | 1.8 | 2 | 0.6 |
| **J1001 109.0** | <2 | 0.06 | <3 | <5 | <0.5 | <5 | >15 | <1 | <1 | 1 | <0.5 | 0.09 | <1 | 0.05 | 4.6 | 1 | 0.35 | 142 | <1 | 0.02 | <1 | 0.02 | <2 | 0.02 | <5 | 0.8 | <10 | 819 | <0.01 | 1 | <10 | 2.8 | 2 | 1.5 |
| **J1001 114** | <2 | 0.16 | 4 | 6 | <0.5 | <5 | >15 | <1 | <1 | 3 | 0.7 | 0.15 | <1 | 0.08 | 4.6 | 4 | 0.31 | 110 | <1 | 0.01 | 2 | 0.02 | <2 | 0.02 | <5 | 0.7 | <10 | 1320 | <0.01 | 4 | <10 | 2.7 | 5 | 1.5 |
| **J1001 128.0** | <2 | 0.07 | <3 | <5 | <0.5 | <5 | >15 | <1 | <1 | 2 | 0.6 | 0.17 | <1 | 0.04 | 5.6 | 3 | 0.36 | 107 | <1 | 0.01 | 1 | <0.01 | <2 | 0.01 | <5 | 0.5 | <10 | 1010 | <0.01 | 3 | <10 | 3.1 | 3 | 0.6 |
| **J1001 132** | <2 | 0.11 | <3 | 6 | <0.5 | <5 | >15 | <1 | <1 | 4 | 1 | 0.14 | <1 | 0.05 | 6.3 | 4 | 0.36 | 94 | <1 | 0.01 | 1 | <0.01 | <2 | 0.02 | <5 | 0.6 | <10 | 1070 | <0.01 | 4 | <10 | 3.6 | 5 | 0.9 |
| **J1001 136** | <2 | 0.07 | <3 | 6 | <0.5 | <5 | >15 | <1 | <1 | 2 | <0.5 | 0.1 | <1 | 0.04 | 4.7 | 2 | 0.31 | 54 | <1 | 0.01 | <1 | <0.01 | <2 | 0.01 | <5 | <0.5 | <10 | 1430 | <0.01 | 4 | <10 | 2.5 | 2 | 0.8 |
| **J1001 142** | <2 | 0.05 | <3 | 5 | <0.5 | <5 | >15 | <1 | <1 | 4 | <0.5 | 0.11 | <1 | 0.03 | 2.4 | <1 | 2.43 | 25 | <1 | 0.01 | <1 | <0.01 | <2 | 0.01 | <5 | <0.5 | <10 | 1220 | <0.01 | 18 | <10 | 1.4 | 1 | 0.8 |
| **F1144 40** | <2 | 0.96 | 5 | 35 | 0.5 | <5 | >15 | <1 | 2 | 11 | 3.7 | 1.16 | <1 | 0.39 | 12.5 | 18 | 1.73 | 177 | <1 | 0.02 | 10 | 0.02 | <2 | 0.02 | <5 | 3.2 | <10 | 155 | <0.01 | 10 | <10 | 11.3 | 14 | 2.4 |
| **F1144 48** | <2 | 0.76 | <3 | 35 | <0.5 | <5 | >15 | <1 | 3 | 9 | 3.1 | 1.29 | <1 | 0.27 | 10.5 | 14 | 1.63 | 202 | <1 | 0.02 | 7 | 0.02 | <2 | 0.05 | <5 | 3.3 | <10 | 169 | <0.01 | 7 | <10 | 9.5 | 15 | 2.1 |
| **F1144 78** | <2 | 0.36 | <3 | 1490 | <0.5 | <5 | >15 | <1 | <1 | 4 | 2.4 | 0.54 | <1 | 0.14 | 8.4 | 3 | 0.47 | 774 | <1 | 0.02 | 3 | 0.05 | 6 | 0.06 | <5 | 1.7 | <10 | 206 | <0.01 | 3 | <10 | 9.6 | 14 | 1 |
| **F1144 100** | <2 | 0.14 | <3 | 13 | <0.5 | <5 | >15 | <1 | <1 | 2 | 0.7 | 0.34 | <1 | 0.06 | 7.6 | 3 | 0.49 | 245 | <1 | 0.02 | <1 | 0.01 | <2 | 0.03 | <5 | 0.8 | <10 | 234 | <0.01 | 2 | <10 | 8.2 | 7 | 0.6 |
| **F1144 132** | <2 | 0.12 | <3 | 11 | <0.5 | <5 | >15 | <1 | 1 | 2 | 0.6 | 0.49 | <1 | 0.07 | 5.8 | 3 | 0.59 | 184 | <1 | 0.01 | 2 | 0.02 | <2 | 0.02 | <5 | 1.1 | <10 | 380 | <0.01 | 1 | <10 | 4.8 | 6 | 0.8 |
| **F1144 150** | <2 | 0.24 | <3 | 12 | <0.5 | <5 | >15 | <1 | <1 | 2 | <0.5 | 0.25 | <1 | 0.09 | 4 | 7 | 0.76 | 132 | <1 | 0.02 | 2 | 0.01 | <2 | 0.03 | <5 | 0.6 | <10 | 373 | <0.01 | 3 | <10 | 3.1 | 6 | 0.6 |
| **F611 32** | <2 | 0.04 | <3 | 33 | <0.5 | <5 | >15 | <1 | 13 | 21 | 3.2 | 0.92 | <1 | 0.02 | 4.3 | <1 | 1.05 | 186 | 10 | 0.02 | 107 | 0.01 | 2 | 0.32 | <5 | 1.2 | <10 | 877 | <0.01 | 2 | 110 | 4.3 | 6 | 1.9 |
| **F611 97** | <2 | 2.55 | <3 | 21 | <0.5 | <5 | >15 | <1 | 24 | 89 | 82.4 | 4.72 | <1 | 0.07 | 8.2 | 39 | 2.05 | 2720 | <1 | 0.01 | 50 | 0.05 | <2 | 0.26 | <5 | 10.7 | <10 | 563 | 0.05 | 125 | <10 | 13.6 | 53 | 2.9 |
| **F611 545** | <2 | 0.46 | <3 | 46 | <0.5 | <5 | >15 | <1 | 2 | 6 | 17.9 | 0.95 | <1 | 0.08 | 7.8 | 8 | 0.38 | 223 | <1 | <0.01 | 7 | 0.02 | <2 | <0.01 | <5 | 5.1 | <10 | 1250 | <0.01 | 11 | <10 | 8.9 | 10 | 1.1 |
| **F611 1142** | <2 | 2.97 | 4 | 31 | <0.5 | <5 | 13.2 | <1 | 24 | 115 | 69.6 | 4.88 | <1 | 0.04 | 5.1 | 53 | 2.95 | 718 | <1 | 0.02 | 140 | 0.03 | 3 | 0.19 | <5 | 17.5 | <10 | 651 | <0.01 | 153 | <10 | 9.1 | 54 | 1.3 |

*These samples were analyzed by a Thermo XSeries ICPMS in Dr. Charlie Langmuir's Geochemical Laboratory at Harvard University.*

| | Li | Be | P2O5 | Sc | TiO2 | V | MnO2 | Co | Ni | Cu | Zn | Ga | Rb | Sr | Y | Zr | Nb | Mo | Sn | Sb | Cs | Ba | La | Ce |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ppm | ppm | % | ppm | % | ppm | % | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| **F1141_16.5** | 0.04 | 0.01 | 0.00 | 0.08 | 0.00 | 0.29 | 0.01 | -0.15 | 0.62 | -0.01 | 3.01 | 0.18 | -0.01 | 9.28 | 0.13 | -0.01 | -0.01 | 0.51 | -0.01 | 0.00 | 0.00 | -0.95 | 0.05 | 0.10 |
| **F1141_20** | 0.06 | 0.03 | -0.01 | 0.08 | 0.00 | 0.33 | 0.01 | -0.13 | 0.55 | 0.03 | 4.44 | 0.18 | -0.01 | 12.42 | 0.05 | -0.01 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | -0.42 | 0.06 | 0.14 |
| **F1144_176** | 0.20 | 0.06 | 0.00 | 0.39 | 0.00 | 0.22 | 0.01 | 0.06 | 3.72 | 0.12 | 2.00 | 0.24 | 0.07 | 268.96 | 1.45 | -0.02 | -0.01 | 0.00 | -0.01 | 0.00 | 0.02 | 1.15 | 2.30 | 4.67 |
| **F1144_31.7** | 0.26 | 0.19 | 0.01 | 0.78 | 0.00 | 0.28 | 0.05 | 0.10 | 4.22 | 0.19 | 3.36 | 0.30 | 0.13 | 98.99 | 6.95 | 0.03 | -0.01 | 0.01 | -0.01 | 0.00 | 0.04 | 6.47 | 4.73 | 9.83 |
| **F609-4.4** | 0.08 | 0.06 | 0.00 | 0.93 | 0.00 | 2.45 | 0.00 | 0.08 | 4.07 | 0.30 | 2.22 | 0.14 | 0.00 | 1676.96 | 0.82 | 0.19 | -0.01 | -0.01 | -0.01 | 0.00 | 0.00 | 63.42 | 0.91 | 1.63 |
| **F609-13.9** | 0.11 | 0.02 | 0.00 | 0.48 | 0.00 | 0.38 | 0.00 | 0.14 | 5.04 | 0.34 | 3.24 | 0.13 | 0.00 | 1414.71 | 0.06 | 0.04 | -0.01 | -0.01 | -0.01 | 0.00 | 0.00 | 30.16 | 0.25 | 0.50 |
| **F609-22.4** | 0.07 | 0.09 | 0.00 | 1.00 | 0.00 | 1.24 | 0.01 | 0.08 | 3.90 | 0.29 | 2.61 | 0.14 | 0.01 | 1477.46 | 0.39 | 0.12 | 0.00 | -0.01 | -0.01 | 0.01 | 0.00 | 25.51 | 1.00 | 1.90 |
| **F609-72** | 0.09 | 0.03 | 0.00 | 0.69 | 0.00 | 0.53 | 0.00 | 0.31 | 7.22 | 0.67 | 3.97 | 0.15 | 0.01 | 1937.14 | 0.51 | 0.03 | -0.01 | -0.01 | -0.01 | 0.02 | 0.00 | 11.65 | 0.79 | 1.49 |
| **F609-93.8** | 0.04 | 0.02 | 0.00 | 0.07 | 0.00 | 0.19 | 0.02 | 0.00 | 3.19 | 0.29 | 1.84 | 0.13 | 0.00 | 340.42 | -0.14 | 0.01 | -0.01 | 0.00 | -0.01 | 0.00 | 0.00 | 3.57 | 0.10 | 0.20 |
| **F609-144** | 0.25 | 0.08 | 0.00 | 0.54 | 0.00 | 0.09 | 0.20 | 0.02 | 2.33 | 0.14 | 7.15 | 0.24 | 0.01 | 499.03 | 4.86 | 0.02 | -0.01 | 0.00 | -0.02 | 0.00 | 0.00 | 3.55 | 3.39 | 9.06 |
| **F610-0.5** | 0.00 | 0.01 | 0.00 | 0.45 | 0.00 | 0.46 | 0.01 | 0.15 | 5.19 | 0.37 | 2.96 | 0.15 | 0.00 | 1480.54 | -0.05 | 0.04 | -0.01 | 0.00 | -0.01 | 0.00 | 0.00 | 14.94 | 0.22 | 0.46 |
| **F610-188** | 0.07 | 0.02 | 0.00 | 0.61 | 0.00 | 0.49 | 0.01 | 0.31 | 6.91 | 0.53 | 3.02 | 0.13 | 0.01 | 1903.41 | 0.30 | 0.06 | -0.01 | 0.00 | -0.01 | 0.00 | 0.00 | 13.09 | 0.52 | 0.99 |
| **F610-256.8** | 0.17 | 0.07 | 0.00 | 0.66 | 0.00 | 1.21 | 0.01 | 0.15 | 5.20 | 0.34 | 2.60 | 0.14 | 0.00 | 864.15 | 0.73 | 0.39 | -0.01 | 0.00 | -0.01 | 0.00 | 0.00 | 45.68 | 0.66 | 1.39 |
| **F610-353.4** | 0.20 | 0.08 | 0.00 | 0.85 | 0.00 | 1.57 | 0.01 | 0.20 | 5.73 | 0.43 | 2.09 | 0.14 | 0.01 | 2144.50 | 0.53 | 0.29 | -0.01 | 0.02 | 0.00 | 0.00 | 0.00 | 53.96 | 0.79 | 1.50 |
| **F610-558** | 0.12 | 0.01 | -0.01 | 3.97 | 0.00 | 0.73 | 0.03 | 0.47 | 3.20 | 0.53 | 2.00 | 0.18 | 0.01 | 727.98 | 3.26 | 0.00 | -0.01 | 0.02 | -0.01 | 0.00 | 0.00 | 15.01 | 2.34 | 4.68 |
| **F610-759** | 0.13 | 0.09 | 0.00 | 0.67 | 0.00 | 0.60 | 0.01 | 0.06 | 3.56 | 0.33 | 2.07 | 0.15 | 0.03 | 1046.50 | 1.92 | 0.06 | 0.00 | 0.01 | 0.00 | 0.01 | 0.01 | 30.89 | 1.24 | 2.29 |
| **F610-936** | 0.12 | 0.03 | 0.00 | 2.55 | 0.00 | 0.74 | 0.02 | 0.21 | 5.28 | 0.48 | 1.70 | 0.15 | 0.02 | 1322.65 | 2.43 | 0.04 | 0.00 | 0.00 | -0.01 | 0.00 | 0.01 | 26.03 | 1.47 | 2.85 |
| **F610-1006** | 0.10 | 0.03 | 0.00 | 0.53 | 0.00 | 0.68 | 0.01 | 0.19 | 5.30 | 0.41 | 1.99 | 0.14 | 0.01 | 1019.12 | 1.14 | 0.11 | 0.00 | 0.00 | -0.01 | 0.00 | 0.00 | 35.02 | 0.39 | 0.74 |
| **F611_220** | 0.16 | 0.06 | -0.01 | 0.68 | 0.00 | 0.73 | 0.01 | 0.13 | 4.85 | 0.33 | 3.43 | 0.21 | 0.03 | 654.15 | 2.17 | 0.00 | 0.00 | 0.00 | -0.01 | 0.01 | 0.00 | 14.49 | 1.41 | 2.63 |
| **F611_328** | 0.01 | 0.02 | 0.00 | 0.38 | 0.00 | 0.41 | 0.00 | 0.16 | 6.02 | 0.35 | 1.85 | 0.19 | -0.01 | 1815.09 | 0.00 | -0.02 | -0.01 | 0.58 | 0.00 | 0.00 | 0.00 | 15.24 | 0.28 | 0.51 |
| **F611_369** | 0.06 | 0.03 | 0.00 | 0.57 | 0.00 | 0.48 | 0.00 | 0.19 | 5.75 | 0.47 | 3.31 | 0.20 | 0.02 | 1768.51 | 0.22 | 0.10 | -0.01 | 0.02 | -0.02 | 0.00 | 0.00 | 10.41 | 0.41 | 0.74 |
| **F611_538** | 0.19 | 0.03 | -0.01 | 4.45 | 0.00 | 0.96 | 0.03 | 0.18 | 2.27 | 0.83 | 3.62 | 0.25 | 0.04 | 588.81 | 3.68 | 0.07 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 18.52 | 1.96 | 4.08 |

| | Pr | Nd | Sm | Eu | Tb | Gd | Dy | Ho | Er | Yb | Lu | Hf | Ta | W | Tl | Pb | Th | U | Na2O | MgO | Al2O3 | K2O | CaO | Fe2O3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | % | % | % | % | % | % |
| **F1141_16.5** | 0.01 | 0.06 | 0.02 | 0.00 | 0.00 | 0.03 | 0.04 | 0.01 | 0.03 | 0.03 | 0.01 | 0.00 | 0.00 | -0.02 | 0.00 | 0.00 | 0.00 | 0.24 | 0.00 | 3.41 | 0.00 | 0.00 | 4.92 | -0.04 |
| **F1141_20** | 0.02 | 0.09 | 0.02 | 0.01 | 0.01 | 0.03 | 0.04 | 0.01 | 0.03 | 0.03 | 0.00 | 0.00 | 0.00 | -0.02 | 0.00 | -0.03 | 0.01 | 0.12 | 0.00 | 2.45 | 0.00 | 0.00 | 3.77 | -0.04 |
| **F1144_176** | 0.60 | 2.19 | 0.38 | 0.08 | 0.05 | 0.35 | 0.27 | 0.05 | 0.14 | 0.12 | 0.02 | 0.00 | 0.00 | -0.02 | 0.00 | 0.04 | 0.12 | 0.10 | 0.00 | 0.38 | 0.01 | 0.00 | 36.97 | 0.09 |
| **F1144_31.7** | 1.34 | 5.38 | 1.06 | 0.21 | 0.16 | 1.12 | 0.91 | 0.18 | 0.47 | 0.40 | 0.06 | 0.01 | 0.00 | -0.02 | 0.00 | 0.30 | 0.17 | 0.12 | 0.00 | 0.51 | 0.01 | 0.00 | 40.59 | 0.19 |
| **F609-4.4** | 0.21 | 0.80 | 0.15 | 0.05 | 0.17 | 0.02 | 0.16 | 0.03 | 0.10 | 0.09 | 0.01 | 0.00 | 0.00 | -0.01 | 0.00 | -0.11 | 0.03 | 0.30 | 0.00 | 0.16 | 0.00 | 0.00 | 29.17 | 0.26 |
| **F609-13.9** | 0.06 | 0.24 | 0.04 | 0.02 | 0.05 | 0.01 | 0.04 | 0.01 | 0.03 | 0.02 | 0.00 | 0.00 | 0.00 | -0.01 | 0.00 | -0.10 | 0.01 | 0.12 | 0.00 | 0.13 | 0.00 | 0.00 | 35.89 | 0.33 |
| **F609-22.4** | 0.24 | 0.90 | 0.14 | 0.04 | 0.15 | 0.02 | 0.11 | 0.02 | 0.06 | 0.06 | 0.01 | 0.00 | 0.00 | -0.01 | 0.00 | -0.11 | 0.08 | 0.13 | 0.00 | 0.11 | 0.00 | 0.00 | 29.26 | 0.27 |
| **F609-72** | 0.20 | 0.77 | 0.14 | 0.03 | 0.14 | 0.02 | 0.11 | 0.02 | 0.06 | 0.06 | 0.01 | 0.00 | 0.00 | -0.01 | 0.00 | -0.07 | 0.02 | 0.48 | 0.00 | 0.12 | 0.00 | 0.00 | 46.83 | 0.41 |
| **F609-93.8** | 0.03 | 0.11 | 0.02 | 0.01 | 0.02 | 0.00 | 0.02 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | -0.01 | 0.00 | -0.14 | 0.00 | 0.15 | 0.00 | 0.10 | 0.00 | 0.00 | 25.15 | 0.23 |
| **F609-144** | 1.28 | 5.94 | 1.45 | 0.55 | 1.56 | 0.21 | 1.05 | 0.17 | 0.37 | 0.27 | 0.04 | 0.01 | 0.00 | -0.01 | 0.00 | 0.48 | 0.10 | 0.29 | 0.01 | 0.21 | 0.01 | 0.00 | 17.92 | 0.69 |
| **F610-0.5** | 0.06 | 0.23 | 0.04 | 0.01 | 0.04 | 0.01 | 0.03 | 0.01 | 0.02 | 0.02 | 0.00 | 0.00 | 0.00 | -0.01 | 0.00 | -0.15 | 0.01 | 0.32 | 0.00 | 0.13 | 0.00 | 0.00 | 37.34 | 0.34 |
| **F610-188** | 0.13 | 0.53 | 0.10 | 0.03 | 0.11 | 0.01 | 0.08 | 0.02 | 0.05 | 0.04 | 0.01 | 0.00 | 0.00 | -0.01 | 0.00 | -0.14 | 0.04 | 0.27 | -0.01 | 0.18 | 0.00 | 0.00 | 47.90 | 0.42 |
| **F610-256.8** | 0.17 | 0.71 | 0.14 | 0.05 | 0.16 | 0.03 | 0.15 | 0.03 | 0.09 | 0.08 | 0.01 | 0.00 | 0.00 | -0.01 | 0.00 | -0.15 | 0.04 | 0.35 | 0.00 | 0.28 | 0.00 | 0.00 | 36.40 | 0.65 |
| **F610-353.4** | 0.18 | 0.68 | 0.12 | 0.04 | 0.13 | 0.02 | 0.11 | 0.02 | 0.07 | 0.07 | 0.01 | 0.01 | 0.00 | -0.01 | 0.00 | -0.10 | 0.05 | 0.35 | 0.00 | 0.14 | 0.01 | 0.00 | 39.33 | 0.38 |
| **F610-558** | 0.61 | 2.42 | 0.51 | 0.18 | 0.62 | 0.09 | 0.56 | 0.11 | 0.29 | 0.27 | 0.04 | 0.00 | 0.00 | -0.01 | 0.00 | 0.13 | 0.08 | 0.02 | 0.00 | 0.09 | 0.02 | 0.00 | 22.35 | 0.38 |
| **F610-759** | 0.32 | 1.25 | 0.25 | 0.07 | 0.30 | 0.04 | 0.27 | 0.06 | 0.16 | 0.15 | 0.02 | 0.00 | 0.00 | -0.01 | 0.00 | 0.27 | 0.13 | 0.28 | 0.00 | 0.28 | 0.01 | 0.00 | 27.07 | 0.40 |
| **F610-936** | 0.37 | 1.44 | 0.32 | 0.11 | 0.38 | 0.06 | 0.39 | 0.08 | 0.21 | 0.20 | 0.03 | 0.00 | 0.00 | -0.01 | 0.00 | -0.04 | 0.07 | 0.07 | 0.00 | 0.15 | 0.01 | 0.00 | 37.06 | 0.56 |
| **F610-1006** | 0.10 | 0.41 | 0.09 | 0.03 | 0.12 | 0.02 | 0.14 | 0.03 | 0.10 | 0.10 | 0.02 | 0.00 | 0.00 | -0.01 | 0.00 | -0.05 | 0.02 | 0.10 | 0.00 | 0.27 | 0.00 | 0.00 | 38.57 | 0.42 |
| **F611_220** | 0.36 | 1.43 | 0.30 | 0.07 | 0.05 | 0.33 | 0.32 | 0.07 | 0.19 | 0.17 | 0.03 | 0.00 | 0.00 | -0.02 | 0.00 | 0.02 | 0.14 | 0.18 | 0.00 | 0.71 | 0.00 | 0.00 | 44.47 | 0.14 |
| **F611_328** | 0.07 | 0.27 | 0.04 | 0.01 | 0.01 | 0.04 | 0.04 | 0.01 | 0.02 | 0.02 | 0.00 | 0.00 | 0.00 | -0.01 | 0.00 | -0.08 | 0.01 | 0.24 | 0.00 | 0.16 | 0.00 | 0.00 | 56.81 | 0.08 |
| **F611_369** | 0.10 | 0.41 | 0.07 | 0.02 | 0.01 | 0.08 | 0.07 | 0.01 | 0.04 | 0.04 | 0.01 | 0.00 | 0.00 | -0.02 | 0.00 | -0.07 | 0.01 | 0.36 | 0.00 | 0.15 | 0.01 | 0.00 | 57.22 | 0.08 |
| **F611_538** | 0.57 | 2.42 | 0.60 | 0.19 | 0.11 | 0.68 | 0.64 | 0.12 | 0.33 | 0.30 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | -0.03 | 0.08 | 0.04 | 0.00 | 0.17 | 0.02 | 0.00 | 20.24 | 0.16 |

*These samples were analyzed commercially at SGS Analytical Laboratories in Vancouver, Canada*

Table DR3. Strontium isotopic data from the Mount Weller Group and Ikiakpuk Groups, and Black Dog Formation, NE Brooks Range, Alaska.

| Unit | Section | Stratigraphic Height | 87Sr/86Sr |
|---|---|---|---|
| Ikiakpuk | F609 | 4.4 | 0.707411 |
| Ikiakpuk | F609 | 13.9 | 0.707417 |
| Ikiakpuk | F609 | 22.4 | 0.707418 |
| Ikiakpuk | F609 | 72 | 0.707385 |
| Ikiakpuk | F609 | 93.8 | 0.707398 |
| Ikiakpuk | F609 | 144 | 0.709961 |
| Ikiakpuk | F610 | 0.5 | 0.707378 |
| Ikiakpuk | F610 | 188 | 0.707393 |
| Ikiakpuk | F610 | 256.8 | 0.707412 |
| Ikiakpuk | F610 | 353.4 | 0.707412 |
| Ikiakpuk | F610 | 558 | 0.707521 |
| Ikiakpuk | F610 | 759 | 0.707303 |
| Ikiakpuk | F610 | 936 | 0.707373 |
| Ikiakpuk | F610 | 1006 | 0.707491 |
| Ikiakpuk | F611 | 61 | 0.710680 |
| Ikiakpuk | F611 | 220 | 0.707644 |
| Ikiakpuk | F611 | 328 | 0.707416 |
| Ikiakpuk | F611 | 369 | 0.707358 |
| Ikiakpuk | F611 | 538 | 0.707641 |
| Black Dog | J1001 | 36 | 0.710422 |
| Black Dog | J1001 | 53 | 0.708608 |
| Black Dog | J1001 | 58 | 0.708564 |
| Black Dog | J1001 | 63 | 0.708570 |
| Black Dog | J1001 | 67 | 0.708625 |
| Black Dog | J1001 | 69 | 0.708812 |
| Black Dog | J1001 | 75 | 0.709046 |
| Black Dog | J1001 | 109 | 0.708735 |
| Black Dog | J1001 | 114 | 0.708579 |
| Black Dog | J1001 | 121 | 0.708658 |
| Black Dog | J1001 | 128 | 0.708605 |
| Black Dog | J1001 | 132 | 0.708604 |
| Black Dog | J1001 | 136 | 0.708564 |
| Black Dog | J1001 | 142 | 0.708550 |
| Black Dog | J1001 | 368 | 0.708880 |
| Weller | F1141 | 16.5 | 0.708774 |
| Weller | F1141 | 20 | 0.707604 |
| Weller | F1144 | 31.7 | 0.710590 |
| Weller | F1144 | 176 | 0.706398 |

| Table DR4. U-Pb geochronologic analyses from pre-Missippian rocks of the North Slope subterrane, NE Brooks Range, Alaska. | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
| Analysis | U | 206Pb | U/Th | 206Pb* | ± | 207Pb* | ± | 206Pb* | ± | error | 206Pb* | ± | 207Pb* | ± | 206Pb* | ± | Best age | ± | Conc |
| | (ppm) | 204Pb | | 207Pb* | (%) | 235U* | (%) | 238U | (%) | corr. | 238U* | (Ma) | 235U | (Ma) | 207Pb* | (Ma) | (Ma) | (Ma) | (%) |
| **J1005-144 – Sunset Pass Formation (n = 132/192)** | | | | | | | | | | | | | | | | | | | |
| 176 | 212 | 49422 | 1.5 | 18.3895 | 4.7 | 0.4855 | 5.3 | 0.0648 | 2.4 | 0.46 | 404 | 9 | 402 | 18 | 387 | 106 | 404 | 9 | 105 |
| 130 | 707 | 3548 | 1.2 | 16.8756 | 8.6 | 0.5316 | 9.1 | 0.0651 | 2.9 | 0.32 | 406 | 11 | 433 | 32 | 577 | 187 | 406 | 11 | 70 |
| 153 | 161 | 16894 | 1.6 | 18.7869 | 6.2 | 0.5086 | 7.1 | 0.0693 | 3.3 | 0.47 | 432 | 14 | 417 | 24 | 339 | 142 | 432 | 14 | 128 |
| 157 | 293 | 39414 | 1.9 | 17.5393 | 3.7 | 0.5828 | 4.5 | 0.0741 | 2.5 | 0.56 | 461 | 11 | 466 | 17 | 492 | 82 | 461 | 11 | 94 |
| 112 | 200 | 27215 | 3.2 | 17.0854 | 4.7 | 0.6169 | 5.0 | 0.0764 | 1.5 | 0.31 | 475 | 7 | 488 | 19 | 550 | 103 | 475 | 7 | 86 |
| 104 | 341 | 23799 | 2.8 | 17.2119 | 4.2 | 0.7027 | 4.4 | 0.0877 | 1.6 | 0.35 | 542 | 8 | 540 | 19 | 534 | 91 | 542 | 8 | 102 |
| 57 | 347 | 24695 | 4.5 | 14.1232 | 3.7 | 1.3387 | 4.3 | 0.1371 | 2.3 | 0.52 | 828 | 18 | 863 | 25 | 952 | 75 | 828 | 18 | 87 |
| 150 | 208 | 59424 | 1.8 | 14.1984 | 1.2 | 1.5257 | 2.0 | 0.1571 | 1.5 | 0.78 | 941 | 14 | 941 | 12 | 941 | 25 | 941 | 14 | 100 |
| 200 | 152 | 31905 | 2.6 | 13.6739 | 2.1 | 1.7247 | 2.5 | 0.1710 | 1.3 | 0.54 | 1018 | 13 | 1018 | 16 | 1018 | 42 | 1018 | 13 | 100 |
| 65 | 733 | 36887 | 8.1 | 12.9070 | 1.6 | 1.9033 | 1.9 | 0.1782 | 1.0 | 0.51 | 1057 | 9 | 1082 | 13 | 1133 | 33 | 1057 | 9 | 93 |
| 90 | 413 | 109449 | 7.5 | 13.2539 | 2.0 | 1.8754 | 2.5 | 0.1803 | 1.5 | 0.60 | 1068 | 15 | 1072 | 17 | 1081 | 40 | 1068 | 15 | 99 |
| 197 | 105 | 28690 | 3.0 | 12.9403 | 4.0 | 1.9319 | 4.5 | 0.1813 | 2.0 | 0.44 | 1074 | 20 | 1092 | 30 | 1128 | 81 | 1074 | 20 | 95 |
| 42 | 134 | 108827 | 2.3 | 13.3876 | 10.2 | 1.8770 | 10.5 | 0.1822 | 2.3 | 0.22 | 1079 | 23 | 1073 | 70 | 1060 | 206 | 1079 | 23 | 102 |
| 152 | 252 | 43668 | 3.2 | 13.1215 | 3.3 | 1.9711 | 4.0 | 0.1876 | 2.3 | 0.58 | 1108 | 24 | 1106 | 27 | 1101 | 65 | 1108 | 24 | 101 |
| 31 | 146 | 61364 | 1.4 | 12.7743 | 4.8 | 2.0658 | 5.5 | 0.1914 | 2.6 | 0.47 | 1129 | 27 | 1138 | 37 | 1154 | 95 | 1129 | 27 | 98 |
| 91 | 184 | 102677 | 2.2 | 12.7312 | 5.1 | 2.1220 | 5.2 | 0.1959 | 1.0 | 0.20 | 1153 | 11 | 1156 | 36 | 1161 | 101 | 1153 | 11 | 99 |
| 136 | 206 | 46253 | 2.8 | 12.8453 | 1.8 | 2.1214 | 2.8 | 0.1976 | 2.1 | 0.75 | 1163 | 22 | 1156 | 19 | 1143 | 37 | 1163 | 22 | 102 |
| 105 | 167 | 42280 | 2.7 | 12.6938 | 1.9 | 2.1673 | 3.1 | 0.1995 | 2.4 | 0.78 | 1173 | 26 | 1171 | 21 | 1167 | 38 | 1173 | 26 | 101 |
| 110 | 83 | 31323 | 2.3 | 12.7818 | 3.0 | 2.1656 | 3.4 | 0.2008 | 1.6 | 0.48 | 1179 | 18 | 1170 | 24 | 1153 | 59 | 1179 | 18 | 102 |
| 148 | 448 | 49904 | 2.5 | 12.2808 | 0.8 | 2.2590 | 1.2 | 0.2012 | 0.9 | 0.76 | 1182 | 10 | 1200 | 9 | 1232 | 16 | 1182 | 10 | 96 |
| 108 | 173 | 35629 | 3.3 | 12.5964 | 2.9 | 2.2120 | 3.1 | 0.2021 | 1.2 | 0.40 | 1187 | 13 | 1185 | 22 | 1182 | 57 | 1187 | 13 | 100 |
| 95 | 257 | 198104 | 2.9 | 12.6204 | 2.6 | 2.2140 | 3.0 | 0.2027 | 1.6 | 0.51 | 1190 | 17 | 1185 | 21 | 1178 | 52 | 1190 | 17 | 101 |
| 168 | 124 | 20512 | 1.6 | 12.5641 | 2.2 | 2.2933 | 3.7 | 0.2090 | 3.0 | 0.80 | 1223 | 33 | 1210 | 26 | 1187 | 44 | 1223 | 33 | 103 |
| 139 | 452 | 113684 | 3.5 | 12.2623 | 1.0 | 2.4136 | 2.6 | 0.2147 | 2.4 | 0.93 | 1254 | 28 | 1247 | 19 | 1235 | 19 | 1235 | 19 | 102 |
| 188 | 140 | 20815 | 2.2 | 12.1840 | 2.5 | 2.4296 | 4.4 | 0.2147 | 3.5 | 0.81 | 1254 | 40 | 1251 | 31 | 1247 | 50 | 1247 | 50 | 101 |
| 103 | 149 | 32206 | 2.3 | 12.1743 | 0.7 | 2.3739 | 1.6 | 0.2096 | 1.4 | 0.89 | 1227 | 16 | 1235 | 12 | 1249 | 14 | 1249 | 14 | 98 |
| 191 | 185 | 50263 | 1.8 | 12.0070 | 1.1 | 2.5759 | 1.4 | 0.2243 | 0.9 | 0.64 | 1305 | 11 | 1294 | 10 | 1276 | 21 | 1276 | 21 | 102 |
| 132 | 119 | 29651 | 4.8 | 11.8399 | 2.3 | 2.6895 | 2.6 | 0.2310 | 1.0 | 0.41 | 1339 | 13 | 1326 | 19 | 1303 | 45 | 1303 | 45 | 103 |
| 6 | 231 | 41481 | 2.5 | 11.7908 | 3.3 | 2.5561 | 7.4 | 0.2186 | 6.6 | 0.90 | 1274 | 77 | 1288 | 54 | 1311 | 63 | 1311 | 63 | 97 |
| 10 | 301 | 44017 | 2.3 | 11.5314 | 3.2 | 2.5596 | 4.5 | 0.2141 | 3.1 | 0.70 | 1250 | 36 | 1289 | 33 | 1354 | 62 | 1354 | 62 | 92 |
| 27 | 120 | 35918 | 2.7 | 11.4529 | 3.0 | 2.9487 | 3.4 | 0.2449 | 1.6 | 0.46 | 1412 | 20 | 1395 | 26 | 1367 | 59 | 1367 | 59 | 103 |
| 149 | 350 | 97914 | 2.7 | 11.3713 | 1.1 | 2.9165 | 1.5 | 0.2405 | 1.0 | 0.70 | 1389 | 13 | 1386 | 11 | 1381 | 20 | 1381 | 20 | 101 |
| 151 | 102 | 61598 | 3.7 | 11.1542 | 2.0 | 3.0869 | 2.5 | 0.2497 | 1.5 | 0.61 | 1437 | 20 | 1429 | 19 | 1418 | 38 | 1418 | 38 | 101 |
| 23 | 150 | 149632 | 1.7 | 11.1405 | 2.0 | 2.9116 | 2.5 | 0.2353 | 1.5 | 0.61 | 1362 | 19 | 1385 | 19 | 1420 | 38 | 1420 | 38 | 96 |
| 140 | 173 | 62839 | 2.5 | 11.1095 | 1.3 | 2.7926 | 6.5 | 0.2250 | 6.3 | 0.98 | 1308 | 75 | 1354 | 48 | 1426 | 26 | 1426 | 26 | 92 |
| 166 | 218 | 84934 | 2.0 | 11.1042 | 1.3 | 3.1193 | 2.2 | 0.2512 | 1.9 | 0.83 | 1445 | 24 | 1437 | 17 | 1427 | 24 | 1427 | 24 | 101 |
| 158 | 203 | 39610 | 2.5 | 11.0771 | 0.8 | 3.1467 | 2.0 | 0.2528 | 1.8 | 0.91 | 1453 | 23 | 1444 | 15 | 1431 | 16 | 1431 | 16 | 102 |
| 133 | 404 | 295825 | 3.4 | 11.0278 | 0.4 | 3.1477 | 1.6 | 0.2518 | 1.5 | 0.96 | 1448 | 20 | 1444 | 12 | 1440 | 8 | 1440 | 8 | 101 |
| 76 | 318 | 95276 | 1.8 | 10.9694 | 1.7 | 3.1214 | 2.2 | 0.2483 | 1.5 | 0.65 | 1430 | 19 | 1438 | 17 | 1450 | 32 | 1450 | 32 | 99 |
| 162 | 247 | 106063 | 3.1 | 10.967 | 1.24 | 3.2942 | 19.5 | 0.2620 | 19.4 | 1.00 | 1500 | 260 | 1480 | 153 | 1450 | 24 | 1450 | 24 | 103 |
| 155 | 212 | 146874 | 2.0 | 10.9507 | 1.1 | 3.2955 | 2.6 | 0.2617 | 2.3 | 0.91 | 1499 | 31 | 1480 | 20 | 1453 | 20 | 1453 | 20 | 103 |
| 119 | 252 | 94255 | 2.9 | 10.8479 | 0.9 | 3.1948 | 1.6 | 0.2514 | 1.3 | 0.83 | 1445 | 17 | 1456 | 12 | 1471 | 17 | 1471 | 17 | 98 |
| 15 | 226 | 120112 | 1.9 | 10.8336 | 1.7 | 3.2464 | 2.9 | 0.2551 | 2.3 | 0.80 | 1465 | 30 | 1468 | 22 | 1474 | 33 | 1474 | 33 | 99 |
| 20 | 292 | 140804 | 1.9 | 10.8194 | 2.2 | 3.2190 | 2.6 | 0.2526 | 1.3 | 0.53 | 1452 | 18 | 1462 | 20 | 1476 | 41 | 1476 | 41 | 98 |
| 192 | 449 | 8589 | 1.7 | 10.8140 | 1.7 | 3.1192 | 4.0 | 0.2446 | 3.7 | 0.91 | 1411 | 46 | 1437 | 31 | 1477 | 32 | 1477 | 32 | 96 |
| 18 | 186 | 60280 | 1.7 | 10.2466 | 2.5 | 3.6426 | 2.9 | 0.2707 | 1.5 | 0.50 | 1544 | 20 | 1559 | 23 | 1579 | 47 | 1579 | 47 | 98 |
| 186 | 73 | 23347 | 0.8 | 10.0731 | 2.4 | 3.8406 | 3.1 | 0.2806 | 1.8 | 0.61 | 1594 | 26 | 1601 | 25 | 1610 | 45 | 1610 | 45 | 99 |
| 94 | 155 | 69927 | 1.5 | 9.8669 | 3.0 | 4.0710 | 3.4 | 0.2913 | 1.6 | 0.48 | 1648 | 23 | 1649 | 27 | 1649 | 55 | 1649 | 55 | 100 |
| 30 | 203 | 80353 | 3.6 | 9.8498 | 2.2 | 3.9977 | 2.4 | 0.2856 | 0.9 | 0.39 | 1619 | 13 | 1634 | 19 | 1652 | 41 | 1652 | 41 | 98 |
| 5 | 219 | 76426 | 1.0 | 9.7163 | 2.4 | 4.1848 | 2.6 | 0.2949 | 1.1 | 0.42 | 1666 | 16 | 1671 | 21 | 1677 | 44 | 1677 | 44 | 99 |
| 86 | 181 | 162507 | 0.9 | 9.6988 | 1.5 | 4.2745 | 2.0 | 0.3007 | 1.4 | 0.69 | 1695 | 21 | 1688 | 17 | 1681 | 27 | 1681 | 27 | 101 |
| 36 | 91 | 69094 | 1.2 | 9.6769 | 3.8 | 4.2028 | 4.1 | 0.2950 | 1.6 | 0.39 | 1666 | 24 | 1675 | 34 | 1685 | 70 | 1685 | 70 | 99 |
| 142 | 110 | 53560 | 1.9 | 9.4101 | 1.8 | 4.5726 | 2.3 | 0.3121 | 1.4 | 0.62 | 1751 | 21 | 1744 | 19 | 1736 | 32 | 1736 | 32 | 101 |
| 77 | 115 | 95120 | 1.1 | 9.3773 | 1.9 | 4.5657 | 2.3 | 0.3105 | 1.3 | 0.55 | 1743 | 20 | 1743 | 19 | 1743 | 35 | 1743 | 35 | 100 |
| 25 | 631 | 389610 | 3.7 | 9.2500 | 0.4 | 4.5961 | 1.4 | 0.3083 | 1.3 | 0.95 | 1733 | 20 | 1749 | 11 | 1768 | 8 | 1768 | 8 | 98 |
| 171 | 50 | 17143 | 0.5 | 9.2421 | 2.6 | 4.7204 | 3.6 | 0.3164 | 2.4 | 0.69 | 1772 | 38 | 1771 | 30 | 1769 | 47 | 1769 | 47 | 100 |
| 199 | 227 | 178796 | 3.3 | 9.2253 | 0.9 | 4.7925 | 2.3 | 0.3207 | 2.1 | 0.93 | 1793 | 33 | 1784 | 19 | 1773 | 16 | 1773 | 16 | 101 |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 131 | 59 | 20425 | 1.0 | 9.1454 | 2.5 | 5.0734 | 3.8 | 0.3365 | 2.9 | 0.76 | 1870 | 46 | 1832 | 32 | 1788 | 45 | 1788 | 45 | 104.5 |
| 78 | 135 | 64250 | 2.1 | 9.1220 | 3.2 | 4.8268 | 3.6 | 0.3193 | 1.6 | 0.44 | 1786 | 24 | 1790 | 30 | 1793 | 59 | 1793 | 59 | 100 |
| 173 | 98 | 16836 | 2.0 | 9.0492 | 1.8 | 5.0288 | 2.2 | 0.3300 | 1.4 | 0.61 | 1839 | 22 | 1824 | 19 | 1808 | 32 | 1808 | 32 | 102 |
| 70 | 399 | 188102 | 2.4 | 9.0437 | 1.1 | 4.8664 | 1.5 | 0.3192 | 1.1 | 0.71 | 1786 | 17 | 1796 | 13 | 1809 | 20 | 1809 | 20 | 99 |
| 182 | 63 | 14746 | 1.3 | 9.0321 | 2.2 | 5.1299 | 3.0 | 0.3360 | 2.0 | 0.66 | 1868 | 32 | 1841 | 25 | 1811 | 41 | 1811 | 41 | 103 |
| 138 | 233 | 254065 | 1.3 | 8.9132 | 0.7 | 5.1711 | 1.6 | 0.3343 | 1.5 | 0.89 | 1859 | 24 | 1848 | 14 | 1835 | 13 | 1835 | 13 | 101 |
| 59 | 110 | 137820 | 0.6 | 8.9110 | 4.0 | 5.0906 | 4.5 | 0.3290 | 2.0 | 0.44 | 1834 | 31 | 1835 | 38 | 1836 | 73 | 1836 | 73 | 100 |
| 122 | 55 | 30881 | 0.6 | 8.9109 | 3.0 | 5.0916 | 3.6 | 0.3291 | 1.9 | 0.54 | 1834 | 31 | 1835 | 30 | 1836 | 55 | 1836 | 55 | 100 |
| 117 | 76 | 31553 | 1.7 | 8.9100 | 1.6 | 5.1376 | 2.9 | 0.3320 | 2.4 | 0.83 | 1848 | 39 | 1842 | 25 | 1836 | 29 | 1836 | 29 | 101 |
| 28 | 116 | 97849 | 1.2 | 8.8984 | 4.0 | 5.1802 | 4.6 | 0.3343 | 2.3 | 0.51 | 1859 | 37 | 1849 | 39 | 1838 | 72 | 1838 | 72 | 101 |
| 89 | 65 | 142809 | 1.2 | 8.8830 | 3.8 | 5.1634 | 4.4 | 0.3327 | 2.2 | 0.49 | 1851 | 35 | 1847 | 37 | 1841 | 69 | 1841 | 69 | 101 |
| 195 | 105 | 43406 | 4.4 | 8.8743 | 1.1 | 4.9243 | 2.6 | 0.3169 | 2.4 | 0.91 | 1775 | 37 | 1806 | 22 | 1843 | 20 | 1843 | 20 | 96 |
| 161 | 97 | 53818 | 1.4 | 8.8613 | 1.6 | 5.1520 | 2.2 | 0.3311 | 1.6 | 0.72 | 1844 | 26 | 1845 | 19 | 1846 | 28 | 1846 | 28 | 100 |
| 180 | 294 | 163628 | 5.0 | 8.8473 | 0.6 | 5.2604 | 1.8 | 0.3375 | 1.8 | 0.95 | 1875 | 28 | 1862 | 16 | 1849 | 11 | 1849 | 11 | 101 |
| 52 | 84 | 325457 | 1.2 | 8.8448 | 4.3 | 5.0862 | 4.4 | 0.3263 | 1.1 | 0.26 | 1820 | 18 | 1834 | 38 | 1849 | 77 | 1849 | 77 | 98 |
| 92 | 79 | 84371 | 1.0 | 8.7831 | 2.3 | 5.2362 | 2.7 | 0.3336 | 1.3 | 0.49 | 1856 | 22 | 1859 | 23 | 1862 | 42 | 1862 | 42 | 100 |
| 13 | 274 | 145514 | 2.1 | 8.7792 | 1.4 | 5.2107 | 1.8 | 0.3318 | 1.1 | 0.62 | 1847 | 18 | 1854 | 16 | 1863 | 26 | 1863 | 26 | 99 |
| 187 | 131 | 42317 | 2.2 | 8.7718 | 1.4 | 5.2098 | 2.1 | 0.3314 | 1.5 | 0.72 | 1845 | 24 | 1854 | 18 | 1864 | 26 | 1864 | 26 | 99 |
| 127 | 184 | 56069 | 1.6 | 8.7556 | 0.6 | 5.2431 | 1.2 | 0.3329 | 1.1 | 0.88 | 1853 | 17 | 1860 | 10 | 1867 | 10 | 1867 | 10 | 99 |
| 147 | 97 | 43226 | 1.6 | 8.7418 | 1.5 | 5.1322 | 2.3 | 0.3254 | 1.8 | 0.78 | 1816 | 29 | 1841 | 20 | 1870 | 26 | 1870 | 26 | 97 |
| 14 | 251 | 207041 | 2.1 | 8.7407 | 1.7 | 5.3006 | 2.3 | 0.3360 | 1.6 | 0.68 | 1867 | 25 | 1869 | 20 | 1871 | 30 | 1871 | 30 | 100 |
| 63 | 109 | 88073 | 3.1 | 8.6849 | 3.6 | 5.1650 | 3.9 | 0.3253 | 1.4 | 0.37 | 1816 | 22 | 1847 | 33 | 1882 | 65 | 1882 | 65 | 96 |
| 83 | 120 | 304181 | 2.5 | 8.6787 | 3.4 | 5.3748 | 4.0 | 0.3383 | 2.3 | 0.56 | 1879 | 37 | 1881 | 35 | 1883 | 60 | 1883 | 60 | 100 |
| 29 | 128 | 107672 | 3.8 | 8.6593 | 2.8 | 5.3432 | 3.3 | 0.3356 | 1.8 | 0.53 | 1865 | 29 | 1876 | 29 | 1887 | 51 | 1887 | 51 | 99 |
| 100 | 203 | 138730 | 1.9 | 8.5931 | 1.5 | 5.2225 | 2.0 | 0.3255 | 1.2 | 0.62 | 1816 | 19 | 1856 | 17 | 1901 | 28 | 1901 | 28 | 96 |
| 81 | 95 | 75646 | 1.3 | 8.5537 | 4.0 | 5.5865 | 4.5 | 0.3466 | 2.0 | 0.46 | 1918 | 34 | 1914 | 38 | 1909 | 71 | 1909 | 71 | 100 |
| 183 | 162 | 84706 | 2.2 | 8.5507 | 0.8 | 5.5821 | 1.7 | 0.3462 | 1.5 | 0.88 | 1916 | 25 | 1913 | 15 | 1910 | 15 | 1910 | 15 | 100 |
| 163 | 168 | 79573 | 2.3 | 8.4685 | 0.8 | 5.7609 | 1.3 | 0.3538 | 1.0 | 0.77 | 1953 | 16 | 1941 | 11 | 1927 | 14 | 1927 | 14 | 101 |
| 111 | 77 | 35159 | 1.1 | 8.3678 | 2.1 | 5.6127 | 2.9 | 0.3406 | 2.0 | 0.69 | 1890 | 32 | 1918 | 25 | 1949 | 38 | 1949 | 38 | 97 |
| 80 | 124 | 61247 | 1.3 | 8.3627 | 2.6 | 5.9330 | 2.9 | 0.3598 | 1.4 | 0.49 | 1981 | 24 | 1966 | 25 | 1950 | 46 | 1950 | 46 | 102 |
| 156 | 197 | 22606 | 1.9 | 8.3346 | 1.6 | 5.4980 | 4.2 | 0.3323 | 3.9 | 0.93 | 1850 | 63 | 1900 | 36 | 1956 | 28 | 1956 | 28 | 95 |
| 125 | 639 | 221511 | 2.7 | 8.3144 | 0.4 | 5.4319 | 2.1 | 0.3276 | 2.1 | 0.98 | 1827 | 33 | 1890 | 18 | 1960 | 7 | 1960 | 7 | 93 |
| 121 | 237 | 73725 | 3.2 | 8.1934 | 0.6 | 6.1846 | 2.5 | 0.3675 | 2.4 | 0.97 | 2018 | 41 | 2002 | 21 | 1986 | 11 | 1986 | 11 | 102 |
| 75 | 240 | 132258 | 2.6 | 8.1773 | 1.6 | 5.8504 | 2.2 | 0.3470 | 1.6 | 0.72 | 1920 | 27 | 1954 | 19 | 1990 | 28 | 1990 | 28 | 96 |
| 146 | 49 | 27209 | 0.9 | 8.1232 | 1.5 | 6.2043 | 2.2 | 0.3655 | 1.6 | 0.74 | 2008 | 28 | 2005 | 19 | 2002 | 26 | 2002 | 26 | 100 |
| 71 | 107 | 44834 | 1.5 | 8.0263 | 2.9 | 6.2881 | 3.6 | 0.3660 | 2.1 | 0.59 | 2011 | 36 | 2017 | 31 | 2023 | 51 | 2023 | 51 | 99 |
| 107 | 83 | 34652 | 1.7 | 7.7754 | 1.6 | 6.8003 | 2.7 | 0.3835 | 2.2 | 0.82 | 2093 | 40 | 2086 | 24 | 2079 | 27 | 2079 | 27 | 101 |
| 82 | 141 | 149779 | 2.1 | 7.7696 | 1.7 | 6.7302 | 3.3 | 0.3792 | 2.8 | 0.86 | 2073 | 50 | 2077 | 29 | 2080 | 29 | 2080 | 29 | 100 |
| 118 | 454 | 86928 | 6.4 | 7.7319 | 0.4 | 7.2038 | 6.1 | 0.4040 | 6.1 | 1.00 | 2187 | 113 | 2137 | 55 | 2089 | 7 | 2089 | 7 | 104.7 |
| 54 | 39 | 48578 | 1.7 | 7.7023 | 3.9 | 6.5953 | 5.6 | 0.3684 | 4.0 | 0.72 | 2022 | 70 | 2059 | 49 | 2096 | 68 | 2096 | 68 | 96 |
| 120 | 52 | 21899 | 1.2 | 7.7014 | 1.9 | 6.8780 | 2.2 | 0.3842 | 1.2 | 0.54 | 2096 | 22 | 2096 | 20 | 2096 | 33 | 2096 | 33 | 100 |
| 32 | 169 | 75665 | 1.7 | 7.6444 | 1.4 | 6.8920 | 1.8 | 0.3821 | 1.1 | 0.63 | 2086 | 20 | 2098 | 16 | 2109 | 24 | 2109 | 24 | 99 |
| 178 | 91 | 27249 | 2.5 | 6.8235 | 1.4 | 8.2076 | 4.7 | 0.4062 | 4.5 | 0.96 | 2197 | 84 | 2254 | 43 | 2306 | 24 | 2306 | 24 | 95 |
| 64 | 126 | 85975 | 2.2 | 6.7762 | 1.3 | 8.7721 | 1.7 | 0.4311 | 1.0 | 0.58 | 2311 | 19 | 2315 | 15 | 2318 | 23 | 2318 | 23 | 100 |
| 44 | 47 | 45207 | 0.7 | 6.6871 | 4.1 | 9.0015 | 4.6 | 0.4366 | 2.0 | 0.44 | 2335 | 40 | 2338 | 42 | 2341 | 70 | 2341 | 70 | 100 |
| 58 | 130 | 86690 | 1.1 | 6.6684 | 1.1 | 8.7993 | 3.8 | 0.4256 | 3.6 | 0.96 | 2286 | 69 | 2317 | 34 | 2345 | 19 | 2345 | 19 | 97 |
| 61 | 245 | 172281 | 2.4 | 6.4245 | 0.5 | 9.6989 | 0.9 | 0.4519 | 0.7 | 0.81 | 2404 | 15 | 2407 | 8 | 2409 | 9 | 2409 | 9 | 100 |
| 66 | 171 | 219999 | 1.7 | 6.0126 | 1.0 | 10.9379 | 1.8 | 0.4770 | 1.5 | 0.83 | 2514 | 31 | 2518 | 16 | 2521 | 17 | 2521 | 17 | 100 |
| 3 | 112 | 37076 | 0.9 | 5.9828 | 2.6 | 10.7013 | 3.0 | 0.4643 | 1.6 | 0.52 | 2459 | 32 | 2498 | 28 | 2529 | 44 | 2529 | 44 | 97 |
| 143 | 189 | 105987 | 2.9 | 5.9395 | 0.4 | 11.4888 | 2.0 | 0.4949 | 1.9 | 0.97 | 2592 | 41 | 2564 | 18 | 2541 | 7 | 2541 | 7 | 102 |
| 35 | 67 | 47098 | 1.0 | 5.8875 | 2.6 | 11.0891 | 3.7 | 0.4735 | 2.6 | 0.70 | 2499 | 54 | 2531 | 34 | 2556 | 44 | 2556 | 44 | 98 |
| 194 | 225 | 125356 | 5.0 | 5.8629 | 0.9 | 11.3998 | 2.0 | 0.4847 | 1.8 | 0.90 | 2548 | 39 | 2556 | 19 | 2563 | 15 | 2563 | 15 | 99 |
| 72 | 64 | 54713 | 0.6 | 5.8379 | 2.7 | 11.7174 | 3.4 | 0.4961 | 2.0 | 0.59 | 2597 | 43 | 2582 | 32 | 2570 | 46 | 2570 | 46 | 101 |
| 137 | 138 | 91009 | 2.3 | 5.7598 | 0.8 | 11.4078 | 1.9 | 0.4765 | 1.8 | 0.92 | 2512 | 37 | 2557 | 18 | 2593 | 13 | 2593 | 13 | 97 |
| 126 | 68 | 49864 | 2.2 | 5.7220 | 1.0 | 12.0346 | 2.0 | 0.4994 | 1.7 | 0.87 | 2611 | 37 | 2607 | 19 | 2604 | 17 | 2604 | 17 | 100 |
| 85 | 200 | 111406 | 2.2 | 5.7096 | 0.4 | 12.0722 | 1.2 | 0.4999 | 1.1 | 0.93 | 2613 | 24 | 2610 | 11 | 2607 | 7 | 2607 | 7 | 100 |
| 196 | 240 | 172459 | 3.2 | 5.7032 | 0.3 | 12.0471 | 1.7 | 0.4983 | 1.7 | 0.99 | 2607 | 37 | 2608 | 16 | 2609 | 5 | 2609 | 5 | 100 |
| 34 | 238 | 258126 | 3.2 | 5.6625 | 0.6 | 11.8317 | 1.0 | 0.4859 | 0.9 | 0.84 | 2553 | 19 | 2591 | 10 | 2621 | 9 | 2621 | 9 | 97 |
| 48 | 176 | 305903 | 2.4 | 5.6437 | 0.6 | 12.1683 | 1.6 | 0.4981 | 1.4 | 0.92 | 2606 | 31 | 2617 | 15 | 2627 | 10 | 2627 | 10 | 99 |
| 93 | 46 | 65791 | 1.1 | 5.5567 | 2.3 | 11.8995 | 4.1 | 0.4796 | 3.3 | 0.82 | 2525 | 69 | 2597 | 38 | 2653 | 38 | 2653 | 38 | 95 |
| 116 | 51 | 66120 | 2.8 | 5.5405 | 1.2 | 12.9209 | 2.3 | 0.5192 | 1.9 | 0.85 | 2696 | 43 | 2674 | 22 | 2657 | 20 | 2657 | 20 | 101 |
| 177 | 177 | 77848 | 1.6 | 5.5221 | 0.5 | 12.1772 | 1.2 | 0.4877 | 1.1 | 0.93 | 2561 | 24 | 2618 | 11 | 2663 | 8 | 2663 | 8 | 96 |
| 159 | 38 | 36731 | 0.7 | 5.5021 | 1.5 | 13.2823 | 2.4 | 0.5300 | 1.9 | 0.80 | 2742 | 43 | 2700 | 23 | 2669 | 24 | 2669 | 24 | 103 |
| 102 | 53 | 8768 | 0.8 | 5.4307 | 1.9 | 12.8760 | 2.7 | 0.5071 | 1.9 | 0.71 | 2644 | 42 | 2671 | 26 | 2690 | 32 | 2690 | 32 | 98 |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 124 | 78 | 66080 | 1.1 | 5.4186 | 1.4 | 13.3058 | 2.6 | 0.5229 | 2.2 | 0.84 | 2711 | 48 | 2702 | 24 | 2694 | 23 | 2694 | 23 | 101 |
| 55 | 49 | 94068 | 0.9 | 5.3969 | 2.5 | 13.3765 | 2.9 | 0.5236 | 1.5 | 0.52 | 2714 | 34 | 2707 | 28 | 2701 | 41 | 2701 | 41 | 101 |
| 193 | 116 | 63881 | 1.6 | 5.3688 | 0.5 | 13.2368 | 1.1 | 0.5154 | 1.0 | 0.90 | 2680 | 22 | 2697 | 10 | 2709 | 8 | 2709 | 8 | 99 |
| 39 | 64 | 60689 | 1.2 | 5.3646 | 2.5 | 13.6478 | 2.9 | 0.5310 | 1.4 | 0.48 | 2746 | 31 | 2726 | 27 | 2711 | 42 | 2711 | 42 | 101 |
| 190 | 113 | 66539 | 1.2 | 5.3477 | 1.0 | 13.8627 | 2.5 | 0.5377 | 2.2 | 0.91 | 2774 | 51 | 2740 | 23 | 2716 | 17 | 2716 | 17 | 102 |
| 50 | 98 | 126060 | 2.2 | 5.3010 | 1.4 | 13.6149 | 2.2 | 0.5234 | 1.7 | 0.76 | 2714 | 37 | 2723 | 21 | 2730 | 23 | 2730 | 23 | 99 |
| 160 | 188 | 52127 | 2.8 | 5.2286 | 0.3 | 13.4308 | 2.8 | 0.5093 | 2.8 | 0.99 | 2654 | 61 | 2710 | 26 | 2753 | 5 | 2753 | 5 | 96 |
| 198 | 20 | 21910 | 2.1 | 5.1629 | 2.2 | 14.3150 | 2.9 | 0.5360 | 1.9 | 0.66 | 2767 | 43 | 2771 | 28 | 2774 | 36 | 2774 | 36 | 100 |
| 165 | 99 | 174545 | 1.6 | 4.9962 | 0.6 | 14.2175 | 5.3 | 0.5152 | 5.3 | 0.99 | 2679 | 115 | 2764 | 50 | 2827 | 10 | 2827 | 10 | 95 |
| 17 | 79 | 145404 | 2.5 | 4.7924 | 1.8 | 15.2470 | 4.9 | 0.5300 | 4.6 | 0.93 | 2741 | 102 | 2831 | 47 | 2895 | 29 | 2895 | 29 | 95 |
| 45 | 60 | 105330 | 0.7 | 4.1125 | 1.2 | 21.2011 | 1.8 | 0.6324 | 1.4 | 0.77 | 3159 | 35 | 3148 | 18 | 3141 | 19 | 3141 | 19 | 101 |
| | | | | | | | | | | | | | | | | | | | |
| ***Rejected Analyses: >10% discordant, >5% reversely discordant, >10% 2 sigma uncertainty*** | | | | | | | | | | | | | | | | | | | |
| 170 | 1633 | 2016 | 3.4 | 17.3678 | 3.3 | 0.3628 | 5.9 | 0.0457 | 4.8 | 0.83 | 288 | 14 | 314 | 16 | 514 | 73 | 288 | 14 | 56 |
| 179 | 1011 | 34709 | 3.8 | 18.3124 | 2.9 | 0.4118 | 6.3 | 0.0547 | 5.5 | 0.88 | 343 | 18 | 350 | 19 | 396 | 66 | 343 | 18 | 87 |
| 115 | 1319 | 2133 | 1.5 | 17.3841 | 9.9 | 0.4548 | 11.7 | 0.0573 | 6.2 | 0.53 | 359 | 22 | 381 | 37 | 512 | 219 | 359 | 22 | 70 |
| 164 | 833 | 25715 | 1.3 | 17.5503 | 2.4 | 0.4667 | 8.2 | 0.0594 | 7.8 | 0.95 | 372 | 28 | 389 | 26 | 491 | 54 | 372 | 28 | 76 |
| 41 | 174 | 49370 | 2.2 | 16.0164 | 11.2 | 1.0378 | 11.6 | 0.1206 | 2.9 | 0.25 | 734 | 20 | 723 | 60 | 689 | 240 | 734 | 20 | 106 |
| 33 | 60 | 38184 | 0.9 | 15.0586 | 17.4 | 1.5904 | 18.6 | 0.1737 | 6.5 | 0.35 | 1032 | 62 | 966 | 116 | 819 | 366 | 819 | 366 | 126 |
| 8 | 93 | 33055 | 1.6 | 14.3859 | 13.6 | 1.7270 | 14.2 | 0.1802 | 3.9 | 0.27 | 1068 | 38 | 1019 | 91 | 914 | 282 | 914 | 282 | 117 |
| 73 | 43 | 3264 | 1.1 | 13.5685 | 28.1 | 1.7786 | 29.8 | 0.1750 | 9.9 | 0.33 | 1040 | 95 | 1038 | 196 | 1033 | 579 | 1040 | 95 | 101 |
| 88 | 34 | 17733 | 1.4 | 13.4113 | 28.7 | 2.3554 | 29.5 | 0.2291 | 6.8 | 0.23 | 1330 | 82 | 1229 | 213 | 1057 | 590 | 1057 | 590 | 126 |
| 7 | 32 | 11304 | 0.6 | 13.2856 | 27.0 | 2.1948 | 28.3 | 0.2115 | 8.2 | 0.29 | 1237 | 93 | 1179 | 200 | 1076 | 553 | 1076 | 553 | 115 |
| 167 | 72 | 10028 | 5.0 | 13.139 | 10.05 | 1.95372 | 10.34 | 0.18617 | 2.4 | 0.24 | 1101 | 25 | 1099.7 | 69.5 | 1098 | 202 | 1098 | 202 | 100 |
| 11 | 45 | 6575 | 1.2 | 12.2154 | 21.0 | 2.1009 | 22.1 | 0.1861 | 6.9 | 0.31 | 1100 | 70 | 1149 | 153 | 1242 | 415 | 1100 | 70 | 89 |
| 175 | 992 | 7250 | 2.9 | 13.1086 | 0.9 | 1.5512 | 7.2 | 0.1475 | 7.1 | 0.99 | 887 | 59 | 951 | 44 | 1103 | 17 | 1103 | 17 | 80 |
| 67 | 41 | 20456 | 1.7 | 12.3094 | 15.9 | 2.1831 | 17.4 | 0.1949 | 7.0 | 0.40 | 1148 | 74 | 1176 | 122 | 1227 | 314 | 1148 | 74 | 94 |
| 21 | 32 | 18202 | 1.4 | 13.0930 | 34.5 | 2.0635 | 36.0 | 0.1960 | 10.4 | 0.29 | 1154 | 110 | 1137 | 252 | 1105 | 711 | 1154 | 110 | 104 |
| 69 | 219 | 71140 | 3.1 | 12.2835 | 3.2 | 2.3395 | 3.5 | 0.2084 | 1.3 | 0.38 | 1220 | 15 | 1224 | 25 | 1231 | 63 | 1231 | 63 | 99 |
| 49 | 106 | 66894 | 1.8 | 11.9588 | 8.8 | 2.4924 | 9.9 | 0.2162 | 4.5 | 0.45 | 1262 | 51 | 1270 | 72 | 1284 | 172 | 1284 | 172 | 98 |
| 56 | 80 | 45726 | 2.3 | 11.8939 | 5.6 | 2.6678 | 6.3 | 0.2301 | 2.9 | 0.46 | 1335 | 35 | 1320 | 46 | 1294 | 108 | 1294 | 108 | 103 |
| 79 | 187 | 88691 | 5.0 | 11.6292 | 4.1 | 2.5904 | 4.6 | 0.2185 | 2.1 | 0.45 | 1274 | 24 | 1298 | 34 | 1338 | 80 | 1338 | 80 | 95 |
| 46 | 155 | 33040 | 2.1 | 11.5905 | 5.4 | 2.6079 | 13.8 | 0.2192 | 12.7 | 0.92 | 1278 | 147 | 1303 | 101 | 1344 | 104 | 1344 | 104 | 95 |
| 24 | 159 | 47179 | 1.7 | 11.0391 | 4.6 | 3.1774 | 4.8 | 0.2544 | 1.5 | 0.30 | 1461 | 19 | 1452 | 37 | 1438 | 88 | 1438 | 88 | 102 |
| 96 | 102 | 65540 | 3.4 | 10.8740 | 5.1 | 3.4092 | 5.6 | 0.2689 | 2.4 | 0.43 | 1535 | 33 | 1507 | 44 | 1467 | 96 | 1467 | 96 | 104.7 |
| 123 | 342 | 49630 | 2.2 | 10.8392 | 1.0 | 2.8220 | 2.2 | 0.2218 | 1.9 | 0.88 | 1292 | 23 | 1361 | 16 | 1473 | 19 | 1473 | 19 | 88 |
| 109 | 974 | 2806 | 2.7 | 10.792 | 0.83 | 1.72954 | 18.10 | 0.13537 | 18.1 | 1.00 | 818 | 139 | 1019.6 | 117.0 | 1481 | 16 | 1481 | 16 | 55 |
| 22 | 138 | 114421 | 1.7 | 10.7775 | 4.1 | 3.2378 | 4.8 | 0.2531 | 2.4 | 0.50 | 1454 | 31 | 1466 | 37 | 1483 | 78 | 1483 | 78 | 98 |
| 106 | 591 | 19929 | 3.3 | 10.6205 | 0.6 | 2.7578 | 6.2 | 0.2124 | 6.2 | 1.00 | 1242 | 69 | 1344 | 46 | 1511 | 10 | 1511 | 10 | 82 |
| 38 | 92 | 51998 | 2.3 | 9.7233 | 3.5 | 3.4888 | 4.7 | 0.2460 | 3.1 | 0.66 | 1418 | 39 | 1525 | 37 | 1676 | 64 | 1676 | 64 | 85 |
| 174 | 1646 | 1223 | 1.9 | 9.376 | 3.23 | 1.36325 | 20.73 | 0.09270 | 20.5 | 0.99 | 572 | 112 | 873.3 | 122.0 | 1743 | 59 | 1743 | 59 | 33 |
| 135 | 1570 | 1962 | 3.8 | 9.1606 | 1.7 | 1.0985 | 9.0 | 0.0730 | 8.8 | 0.98 | 454 | 39 | 753 | 48 | 1785 | 31 | 1785 | 31 | 25 |
| 53 | 82 | 77466 | 1.3 | 9.0679 | 5.4 | 4.9502 | 5.9 | 0.3256 | 2.4 | 0.41 | 1817 | 39 | 1811 | 50 | 1804 | 98 | 1804 | 98 | 101 |
| 185 | 49 | 16728 | 1.1 | 9.0533 | 3.1 | 5.2172 | 5.5 | 0.3426 | 4.5 | 0.82 | 1899 | 74 | 1855 | 47 | 1807 | 57 | 1807 | 57 | 105.1 |
| 113 | 29 | 14284 | 1.2 | 8.9870 | 6.4 | 5.0559 | 7.1 | 0.3295 | 2.9 | 0.42 | 1836 | 47 | 1829 | 60 | 1820 | 117 | 1820 | 117 | 101 |
| 144 | 334 | 11333 | 2.8 | 8.947 | 1.08 | 3.35724 | 12.02 | 0.21785 | 12.0 | 1.00 | 1271 | 138 | 1494.5 | 94.3 | 1828 | 19 | 1828 | 19 | 69 |
| 145 | 240 | 7058 | 2.8 | 8.767 | 0.69 | 2.99437 | 5.11 | 0.19039 | 5.1 | 0.99 | 1123 | 52 | 1406.2 | 38.9 | 1865 | 12 | 1865 | 12 | 60 |
| 172 | 756 | 27235 | 2.0 | 8.664 | 4.53 | 1.34104 | 76.35 | 0.08426 | 76.2 | 1.00 | 522 | 382 | 863.7 | 476.2 | 1887 | 82 | 1887 | 82 | 28 |
| 12 | 66 | 96741 | 0.8 | 8.6512 | 7.5 | 5.3025 | 8.0 | 0.3327 | 2.7 | 0.34 | 1851 | 44 | 1869 | 68 | 1889 | 135 | 1889 | 135 | 98 |
| 129 | 193 | 16799 | 1.7 | 8.636 | 5.68 | 6.82933 | 25.24 | 0.42775 | 24.6 | 0.97 | 2296 | 476 | 2089.5 | 227.3 | 1892 | 102 | 1892 | 102 | 121 |
| 141 | 15 | 7741 | 1.2 | 8.5622 | 6.5 | 6.0512 | 8.0 | 0.3758 | 4.7 | 0.58 | 2057 | 83 | 1983 | 70 | 1908 | 117 | 1908 | 117 | 108 |
| 181 | 468 | 20190 | 2.6 | 8.549 | 0.74 | 3.56312 | 8.43 | 0.22093 | 8.4 | 1.00 | 1287 | 98 | 1541.4 | 66.9 | 1910 | 13 | 1910 | 13 | 67 |
| 37 | 54 | 43645 | 0.5 | 8.5408 | 6.2 | 5.3770 | 6.9 | 0.3331 | 3.0 | 0.44 | 1853 | 49 | 1881 | 59 | 1912 | 112 | 1912 | 112 | 97 |
| 4 | 71 | 71807 | 1.5 | 8.4947 | 6.7 | 5.6799 | 7.0 | 0.3499 | 2.2 | 0.32 | 1934 | 38 | 1928 | 61 | 1922 | 120 | 1922 | 120 | 101 |
| 128 | 315 | 752 | 0.9 | 8.330 | 8.81 | 2.37949 | 30.45 | 0.14376 | 29.1 | 0.96 | 866 | 236 | 1236.5 | 221.1 | 1957 | 158 | 1957 | 158 | 44 |
| 99 | 48 | 19361 | 2.1 | 8.3075 | 7.0 | 5.7870 | 7.5 | 0.3487 | 2.7 | 0.36 | 1928 | 45 | 1944 | 65 | 1962 | 126 | 1962 | 126 | 98 |
| 68 | 285 | 6659 | 1.9 | 8.2670 | 1.5 | 3.9229 | 4.7 | 0.2352 | 4.5 | 0.95 | 1362 | 55 | 1618 | 38 | 1970 | 27 | 1970 | 27 | 69 |
| 40 | 50 | 16058 | 0.7 | 8.2282 | 6.0 | 5.7495 | 8.0 | 0.3431 | 5.3 | 0.66 | 1902 | 87 | 1939 | 70 | 1979 | 108 | 1979 | 108 | 96 |
| 2 | 111 | 29098 | 3.3 | 8.0107 | 3.1 | 5.6143 | 5.9 | 0.3262 | 5.1 | 0.86 | 1820 | 81 | 1918 | 51 | 2026 | 54 | 2026 | 54 | 89.8 |
| 184 | 467 | 38899 | 6.4 | 7.985 | 0.79 | 7.68777 | 14.24 | 0.44525 | 14.2 | 1.00 | 2374 | 283 | 2195.2 | 128.6 | 2032 | 14 | 2032 | 14 | 117 |
| 9 | 52 | 37799 | 1.2 | 7.9786 | 5.8 | 6.3724 | 6.3 | 0.3687 | 2.4 | 0.38 | 2024 | 41 | 2028 | 55 | 2034 | 103 | 2034 | 103 | 100 |
| 98 | 268 | 12610 | 1.8 | 7.8095 | 1.1 | 4.9627 | 3.8 | 0.2811 | 3.6 | 0.96 | 1597 | 51 | 1813 | 32 | 2071 | 20 | 2071 | 20 | 77 |
| 101 | 258 | 38710 | 2.0 | 7.7610 | 0.6 | 5.9669 | 4.2 | 0.3359 | 4.1 | 0.99 | 1867 | 67 | 1971 | 36 | 2082 | 11 | 2082 | 11 | 90 |
| 16 | 232 | 22063 | 0.7 | 7.0234 | 2.2 | 6.6541 | 4.4 | 0.3389 | 3.9 | 0.87 | 1882 | 63 | 2067 | 39 | 2256 | 37 | 2256 | 37 | 83 |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 189 | 35 | 7573 | 1.1 | 6.2706 | 2.8 | 10.8478 | 4.0 | 0.4933 | 2.9 | 0.73 | 2585 | 62 | 2510 | 38 | 2450 | 47 | 2450 | 47 | 106 |
| 169 | 511 | 5256 | 1.1 | 5.789 | 2.39 | 7.66643 | 14.71 | 0.32187 | 14.5 | 0.99 | 1799 | 228 | 2192.7 | 132.8 | 2584 | 40 | 2584 | 40 | 70 |
| 43 | 414 | 7890 | 2.2 | 5.7668 | 0.6 | 6.7099 | 5.4 | 0.2806 | 5.4 | 0.99 | 1595 | 76 | 2074 | 48 | 2591 | 10 | 2591 | 10 | 62 |
| 26 | 198 | 24088 | 2.0 | 5.7057 | 0.6 | 9.9419 | 2.0 | 0.4114 | 1.9 | 0.96 | 2221 | 36 | 2429 | 18 | 2609 | 9 | 2609 | 9 | 85 |
| 47 | 183 | 39235 | 2.1 | 5.6902 | 0.5 | 10.4146 | 1.9 | 0.4298 | 1.8 | 0.97 | 2305 | 35 | 2472 | 17 | 2613 | 8 | 2613 | 8 | 88 |
| 97 | 148 | 14521 | 1.0 | 5.4883 | 1.3 | 11.9010 | 27.6 | 0.4737 | 27.6 | 1.00 | 2500 | 573 | 2597 | 264 | 2673 | 22 | 2673 | 22 | 94 |
| 134 | 104 | 10123 | 1.1 | 5.407 | 0.86 | 11.68002 | 46.63 | 0.45802 | 46.6 | 1.00 | 2431 | 951 | 2579.1 | 466.3 | 2698 | 14 | 2698 | 14 | 90 |
| 114 | 172 | 16967 | 1.3 | 4.916 | 2.04 | 14.69151 | 12.83 | 0.52384 | 12.7 | 0.99 | 2715 | 281 | 2795.5 | 122.6 | 2854 | 33 | 2854 | 33 | 95 |
| 154 | 65 | 70288 | 2.3 | 3.904 | 1.26 | 24.53571 | 11.79 | 0.69478 | 11.7 | 0.99 | 3401 | 310 | 3289.9 | 115.5 | 3223 | 20 | 3223 | 20 | 106 |
| | | | | | | | | | | | | | | | | | | | |
| **J1105 – Kayak Shale (n = 67/75)** | | | | | | | | | | | | | | | | | | | |
| 16 | 210 | 37252 | 1.1 | 17.8379 | 3.4 | 0.5237 | 4.4 | 0.0678 | 2.8 | 0.64 | 423 | 12 | 428 | 15 | 455 | 76 | 423 | 12 | 93 |
| 51 | 157 | 28512 | 2.4 | 17.9059 | 2.5 | 0.5341 | 3.9 | 0.0694 | 3.0 | 0.77 | 432 | 12 | 435 | 14 | 446 | 55 | 432 | 12 | 97 |
| 66 | 132 | 15974 | 1.2 | 18.1862 | 5.5 | 0.5506 | 6.2 | 0.0726 | 2.9 | 0.47 | 452 | 13 | 445 | 22 | 412 | 122 | 452 | 13 | 110 |
| 56 | 424 | 48685 | 1.3 | 17.7112 | 1.8 | 0.5752 | 3.1 | 0.0739 | 2.6 | 0.81 | 460 | 11 | 461 | 12 | 471 | 41 | 460 | 11 | 98 |
| 22 | 408 | 52160 | 1.7 | 16.2861 | 0.8 | 0.8728 | 2.1 | 0.1031 | 1.9 | 0.93 | 632 | 12 | 637 | 10 | 653 | 17 | 632 | 12 | 97 |
| 1 | 161 | 33935 | 1.0 | 14.2683 | 1.7 | 1.4251 | 2.5 | 0.1475 | 1.8 | 0.73 | 887 | 15 | 900 | 15 | 931 | 35 | 887 | 15 | 95 |
| 7 | 297 | 89131 | 1.7 | 14.0197 | 0.7 | 1.5689 | 2.1 | 0.1595 | 2.0 | 0.94 | 954 | 17 | 958 | 13 | 967 | 15 | 954 | 17 | 99 |
| 47 | 342 | 247583 | 9.1 | 13.9446 | 0.7 | 1.5981 | 3.7 | 0.1616 | 3.6 | 0.98 | 966 | 32 | 969 | 23 | 978 | 15 | 966 | 32 | 99 |
| 54 | 88 | 57899 | 11.9 | 13.1855 | 2.5 | 1.8966 | 3.3 | 0.1814 | 2.2 | 0.67 | 1074 | 22 | 1080 | 22 | 1091 | 50 | 1074 | 22 | 98 |
| 50 | 114 | 85365 | 2.5 | 13.0970 | 2.4 | 1.9356 | 2.9 | 0.1839 | 1.7 | 0.58 | 1088 | 17 | 1093 | 19 | 1104 | 47 | 1088 | 17 | 99 |
| 72 | 355 | 205994 | 7.9 | 13.0174 | 0.7 | 1.9730 | 3.1 | 0.1863 | 3.1 | 0.97 | 1101 | 31 | 1106 | 21 | 1117 | 14 | 1101 | 31 | 99 |
| 24 | 518 | 431053 | 3.6 | 12.8882 | 0.2 | 2.0660 | 3.1 | 0.1931 | 3.1 | 1.00 | 1138 | 32 | 1138 | 21 | 1136 | 4 | 1138 | 32 | 100 |
| 61 | 93 | 59177 | 2.6 | 12.8099 | 1.6 | 2.1355 | 2.8 | 0.1984 | 2.3 | 0.81 | 1167 | 24 | 1160 | 20 | 1148 | 33 | 1167 | 24 | 102 |
| 49 | 133 | 43044 | 1.0 | 12.6011 | 1.3 | 2.1920 | 2.2 | 0.2003 | 1.7 | 0.80 | 1177 | 19 | 1179 | 15 | 1181 | 26 | 1177 | 19 | 100 |
| 38 | 78 | 34013 | 3.1 | 12.5387 | 1.8 | 2.2270 | 2.1 | 0.2025 | 1.2 | 0.57 | 1189 | 13 | 1190 | 15 | 1191 | 35 | 1189 | 13 | 100 |
| 34 | 171 | 120490 | 2.1 | 12.3604 | 0.7 | 2.3008 | 1.5 | 0.2063 | 1.3 | 0.88 | 1209 | 15 | 1213 | 11 | 1219 | 15 | 1219 | 15 | 99 |
| 57 | 164 | 177553 | 2.6 | 12.0827 | 0.7 | 2.4538 | 1.5 | 0.2150 | 1.3 | 0.87 | 1256 | 15 | 1259 | 11 | 1264 | 14 | 1264 | 14 | 99 |
| 13 | 159 | 122709 | 2.5 | 11.9270 | 0.9 | 2.5180 | 3.0 | 0.2178 | 2.9 | 0.95 | 1270 | 33 | 1277 | 22 | 1289 | 18 | 1289 | 18 | 99 |
| 69 | 124 | 69885 | 1.1 | 11.7651 | 1.2 | 2.6558 | 3.0 | 0.2266 | 2.7 | 0.92 | 1317 | 32 | 1316 | 22 | 1315 | 23 | 1315 | 23 | 100 |
| 18 | 49 | 57691 | 2.7 | 11.3952 | 2.9 | 2.8137 | 4.1 | 0.2325 | 2.9 | 0.70 | 1348 | 35 | 1359 | 31 | 1377 | 56 | 1377 | 56 | 98 |
| 27 | 147 | 81835 | 1.2 | 11.0245 | 0.8 | 3.0891 | 1.9 | 0.2470 | 1.7 | 0.91 | 1423 | 22 | 1430 | 14 | 1440 | 15 | 1440 | 15 | 99 |
| 73 | 73 | 52303 | 2.4 | 10.9964 | 1.2 | 3.1174 | 5.5 | 0.2486 | 5.4 | 0.98 | 1431 | 70 | 1437 | 43 | 1445 | 22 | 1445 | 22 | 99 |
| 74 | 140 | 140928 | 2.0 | 10.8549 | 0.8 | 3.1848 | 1.3 | 0.2507 | 1.0 | 0.80 | 1442 | 13 | 1453 | 10 | 1470 | 15 | 1470 | 15 | 98 |
| 39 | 63 | 65590 | 1.4 | 11.0258 | 1.8 | 3.1473 | 3.3 | 0.2517 | 2.8 | 0.84 | 1447 | 36 | 1444 | 25 | 1440 | 34 | 1440 | 34 | 100 |
| 59 | 155 | 133772 | 1.4 | 10.8269 | 0.7 | 3.3255 | 2.3 | 0.2611 | 2.2 | 0.95 | 1496 | 29 | 1487 | 18 | 1475 | 14 | 1475 | 14 | 101 |
| 37 | 153 | 243134 | 2.6 | 10.7511 | 0.5 | 3.3523 | 1.9 | 0.2614 | 1.8 | 0.96 | 1497 | 24 | 1493 | 14 | 1488 | 10 | 1488 | 10 | 101 |
| 25 | 172 | 72090 | 1.4 | 10.1298 | 0.5 | 3.8113 | 1.4 | 0.2800 | 1.3 | 0.93 | 1591 | 19 | 1595 | 11 | 1600 | 9 | 1600 | 9 | 99 |
| 29 | 72 | 26512 | 1.1 | 9.9536 | 0.9 | 3.9009 | 3.3 | 0.2816 | 3.2 | 0.96 | 1599 | 45 | 1614 | 26 | 1633 | 16 | 1633 | 16 | 98 |
| 63 | 82 | 168689 | 1.1 | 9.8670 | 0.9 | 4.1025 | 1.8 | 0.2936 | 1.5 | 0.84 | 1659 | 22 | 1655 | 14 | 1649 | 18 | 1649 | 18 | 101 |
| 33 | 251 | 249713 | 1.2 | 9.7722 | 0.3 | 4.1861 | 1.8 | 0.2967 | 1.8 | 0.99 | 1675 | 27 | 1671 | 15 | 1667 | 6 | 1667 | 6 | 100 |
| 75 | 67 | 52326 | 1.5 | 9.2991 | 1.0 | 4.5961 | 1.8 | 0.3100 | 1.5 | 0.84 | 1741 | 23 | 1749 | 15 | 1758 | 18 | 1758 | 18 | 99 |
| 4 | 222 | 191797 | 1.7 | 9.3801 | 0.4 | 4.5937 | 2.2 | 0.3125 | 2.1 | 0.98 | 1753 | 33 | 1748 | 18 | 1742 | 8 | 1742 | 8 | 101 |
| 10 | 317 | 275481 | 1.6 | 8.8167 | 0.2 | 4.9681 | 2.8 | 0.3177 | 2.8 | 1.00 | 1778 | 44 | 1814 | 24 | 1855 | 4 | 1855 | 4 | 96 |
| 12 | 135 | 121273 | 2.2 | 8.8964 | 0.4 | 4.9288 | 4.0 | 0.3180 | 3.9 | 0.99 | 1780 | 61 | 1807 | 33 | 1839 | 8 | 1839 | 8 | 97 |
| 70 | 181 | 372362 | 2.2 | 9.1392 | 0.4 | 4.8461 | 0.9 | 0.3212 | 0.8 | 0.89 | 1796 | 13 | 1793 | 8 | 1790 | 8 | 1790 | 8 | 100 |
| 20 | 35 | 64051 | 1.1 | 8.8897 | 1.4 | 5.0027 | 2.5 | 0.3225 | 2.0 | 0.82 | 1802 | 32 | 1820 | 21 | 1840 | 25 | 1840 | 25 | 98 |
| 41 | 60 | 46143 | 0.8 | 8.8681 | 1.3 | 5.0182 | 3.1 | 0.3228 | 2.9 | 0.91 | 1803 | 45 | 1822 | 27 | 1844 | 23 | 1844 | 23 | 98 |
| 64 | 60 | 5230 | 1.2 | 8.9030 | 1.9 | 5.0416 | 4.8 | 0.3255 | 4.4 | 0.92 | 1817 | 70 | 1826 | 41 | 1837 | 34 | 1837 | 34 | 99 |
| 44 | 152 | 134962 | 1.7 | 8.9067 | 0.5 | 5.0716 | 2.0 | 0.3276 | 1.9 | 0.96 | 1827 | 30 | 1831 | 17 | 1837 | 10 | 1837 | 10 | 99 |
| 71 | 49 | 38999 | 0.5 | 8.6127 | 1.5 | 5.2523 | 2.6 | 0.3281 | 2.1 | 0.82 | 1829 | 34 | 1861 | 22 | 1897 | 26 | 1897 | 26 | 96 |
| 2 | 43 | 32499 | 1.9 | 8.9432 | 2.2 | 5.0728 | 2.7 | 0.3290 | 1.5 | 0.55 | 1834 | 24 | 1832 | 23 | 1829 | 40 | 1829 | 40 | 100 |
| 11 | 56 | 42765 | 1.1 | 8.9316 | 1.6 | 5.1128 | 2.2 | 0.3312 | 1.4 | 0.66 | 1844 | 23 | 1838 | 19 | 1831 | 30 | 1831 | 30 | 101 |
| 48 | 29 | 23031 | 5.1 | 8.8797 | 3.7 | 5.1703 | 3.9 | 0.3330 | 1.1 | 0.28 | 1853 | 17 | 1848 | 33 | 1842 | 67 | 1842 | 67 | 101 |
| 45 | 75 | 185661 | 1.2 | 8.8661 | 1.1 | 5.1884 | 1.8 | 0.3336 | 1.4 | 0.78 | 1856 | 23 | 1851 | 15 | 1845 | 20 | 1845 | 20 | 101 |
| 31 | 88 | 134796 | 0.9 | 8.7925 | 0.9 | 5.2649 | 2.4 | 0.3357 | 2.2 | 0.92 | 1866 | 35 | 1863 | 20 | 1860 | 17 | 1860 | 17 | 100 |
| 6 | 51 | 15833 | 1.4 | 8.1742 | 4.3 | 5.7039 | 4.9 | 0.3382 | 2.4 | 0.49 | 1878 | 39 | 1932 | 43 | 1991 | 76 | 1991 | 76 | 94 |
| 68 | 148 | 370447 | 3.3 | 8.7581 | 0.6 | 5.3310 | 2.9 | 0.3386 | 2.8 | 0.98 | 1880 | 46 | 1874 | 25 | 1867 | 11 | 1867 | 11 | 101 |
| 35 | 43 | 36998 | 1.1 | 8.8371 | 1.6 | 5.2962 | 3.0 | 0.3394 | 2.5 | 0.84 | 1884 | 41 | 1868 | 25 | 1851 | 30 | 1851 | 30 | 102 |
| 65 | 91 | 152387 | 1.7 | 8.8924 | 0.6 | 5.3114 | 2.3 | 0.3426 | 2.2 | 0.97 | 1899 | 36 | 1871 | 20 | 1839 | 10 | 1839 | 10 | 103 |
| 46 | 181 | 147434 | 1.3 | 8.4813 | 0.2 | 5.6603 | 2.4 | 0.3482 | 2.3 | 0.99 | 1926 | 39 | 1925 | 20 | 1925 | 4 | 1925 | 4 | 100 |
| 26 | 104 | 59095 | 1.1 | 8.4846 | 0.9 | 5.7161 | 3.8 | 0.3517 | 3.7 | 0.97 | 1943 | 62 | 1934 | 33 | 1924 | 17 | 1924 | 17 | 101 |
| 5 | 75 | 147098 | 0.5 | 8.5208 | 1.1 | 5.7133 | 2.3 | 0.3531 | 2.1 | 0.89 | 1949 | 35 | 1933 | 20 | 1916 | 19 | 1916 | 19 | 102 |
| 52 | 92 | 134461 | 1.9 | 8.3458 | 1.0 | 5.8374 | 2.7 | 0.3533 | 2.6 | 0.93 | 1951 | 43 | 1952 | 24 | 1954 | 17 | 1954 | 17 | 100 |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 109 | 107653 | 1.2 | 8.3324 | 0.6 | 5.8480 | 2.8 | 0.3534 | 2.7 | 0.98 | 1951 | 46 | 1954 | 24 | 1956 | 10 | 1956 | 10 | 100 |
| 23 | 66 | 63540 | 0.8 | 8.4694 | 0.6 | 5.7902 | 1.9 | 0.3557 | 1.8 | 0.94 | 1962 | 30 | 1945 | 16 | 1927 | 11 | 1927 | 11 | 102 |
| 30 | 239 | 56438 | 4.6 | 7.6371 | 0.3 | 6.6701 | 2.3 | 0.3695 | 2.3 | 0.99 | 2027 | 39 | 2069 | 20 | 2111 | 6 | 2111 | 6 | 96 |
| 58 | 303 | 465708 | 1.5 | 8.0135 | 0.2 | 6.3788 | 1.9 | 0.3707 | 1.9 | 0.99 | 2033 | 33 | 2029 | 17 | 2026 | 4 | 2026 | 4 | 100 |
| 8 | 123 | 121031 | 1.3 | 7.7709 | 0.3 | 6.6655 | 1.8 | 0.3757 | 1.8 | 0.99 | 2056 | 32 | 2068 | 16 | 2080 | 5 | 2080 | 5 | 99 |
| 19 | 69 | 64105 | 0.8 | 7.7310 | 0.6 | 6.7805 | 2.4 | 0.3802 | 2.3 | 0.96 | 2077 | 41 | 2083 | 21 | 2089 | 11 | 2089 | 11 | 99 |
| 21 | 106 | 167904 | 2.7 | 7.6865 | 0.9 | 6.8581 | 2.6 | 0.3823 | 2.5 | 0.94 | 2087 | 44 | 2093 | 23 | 2099 | 16 | 2099 | 16 | 99 |
| 28 | 64 | 138600 | 1.9 | 7.6653 | 0.7 | 6.8796 | 2.2 | 0.3825 | 2.1 | 0.95 | 2088 | 37 | 2096 | 19 | 2104 | 12 | 2104 | 12 | 99 |
| 32 | 129 | 173767 | 2.5 | 7.6922 | 0.4 | 6.8656 | 1.9 | 0.3830 | 1.8 | 0.98 | 2090 | 33 | 2094 | 17 | 2098 | 7 | 2098 | 7 | 100 |
| 3 | 39 | 50204 | 1.7 | 6.5691 | 1.0 | 9.1206 | 3.3 | 0.4345 | 3.2 | 0.95 | 2326 | 62 | 2350 | 30 | 2371 | 17 | 2371 | 17 | 98 |
| 42 | 174 | 166192 | 2.2 | 5.5963 | 0.1 | 12.2165 | 4.2 | 0.4958 | 4.2 | 1.00 | 2596 | 89 | 2621 | 39 | 2641 | 2 | 2641 | 2 | 98 |
| 53 | 75 | 99708 | 1.1 | 5.7075 | 0.3 | 12.0666 | 3.2 | 0.4995 | 3.2 | 0.99 | 2612 | 68 | 2610 | 30 | 2608 | 6 | 2608 | 6 | 100 |
| 67 | 49 | 99011 | 2.6 | 5.3715 | 0.5 | 13.6646 | 2.8 | 0.5323 | 2.8 | 0.99 | 2751 | 62 | 2727 | 27 | 2709 | 8 | 2709 | 8 | 102 |
| 55 | 56 | 89500 | 0.9 | 5.3039 | 0.5 | 13.9008 | 2.3 | 0.5347 | 2.2 | 0.97 | 2761 | 50 | 2743 | 22 | 2729 | 9 | 2729 | 9 | 101 |
| | | | | | | | | | | | | | | | | | | | |
| ***Rejected Analyses: >10% discordant, >5% reversely discordant, >10% 2 sigma uncertainty*** | | | | | | | | | | | | | | | | | | | |
| 43 | 237 | 96244 | 2.6 | 11.4911 | 0.8 | 2.4909 | 2.5 | 0.2076 | 2.4 | 0.94 | 1216 | 26 | 1269 | 18 | 1361 | 16 | 1361 | 16 | 89 |
| 60 | 300 | 31341 | 2.6 | 17.9650 | 2.5 | 0.4617 | 3.1 | 0.0602 | 1.7 | 0.56 | 377 | 6 | 385 | 10 | 439 | 57 | 377 | 6 | 86 |
| 9 | 343 | 4727 | 3.2 | 12.839 | 1.81 | 1.73772 | 2.9 | 0.16181 | 2.3 | 0.78 | 967 | 20 | 1022.6 | 18.7 | 1144 | 36 | 1144 | 36 | 85 |
| 15 | 643 | 5969 | 1.6 | 12.324 | 2.43 | 2.03424 | 4.5 | 0.18182 | 3.7 | 0.84 | 1077 | 37 | 1127.0 | 30.4 | 1225 | 48 | 1225 | 48 | 88 |
| 14 | 322 | 100485 | 1.9 | 8.350 | 14.48 | 5.83979 | 15.8 | 0.35366 | 6.3 | 0.40 | 1952 | 107 | 1952.3 | 137.9 | 1953 | 260 | 1953 | 260 | 100 |
| 17 | 558 | 13713 | 3.2 | 7.362 | 0.42 | 3.61213 | 5.3 | 0.19287 | 5.2 | 1.00 | 1137 | 55 | 1552.2 | 41.8 | 2175 | 7 | 2175 | 7 | 52 |
| 62 | 952 | 3853 | 1.1 | 17.525 | 1.30 | 0.37327 | 3.8 | 0.04744 | 3.6 | 0.94 | 299 | 11 | 322.1 | 10.6 | 494 | 29 | 299 | 11 | 61 |
| 36 | 60 | 1385 | 1.1 | 7.875 | 17.16 | 5.74875 | 18.9 | 0.32835 | 7.9 | 0.42 | 1830 | 126 | 1938.7 | 164.8 | 2057 | 305 | 2057 | 305 | 89 |
| | | | | | | | | | | | | | | | | | | | |
| **J1107 – Mount Weller Group (n = 87/105)** | | | | | | | | | | | | | | | | | | | |
| 4 | 190 | 19391 | 1.4 | 15.2262 | 3.5 | 1.1793 | 3.5 | 0.1302 | 0.8 | 0.22 | 789 | 6 | 791 | 19 | 796 | 72 | 789 | 6 | 99 |
| 90 | 177 | 19632 | 1.3 | 15.1984 | 1.8 | 1.2249 | 2.6 | 0.1350 | 1.9 | 0.71 | 816 | 14 | 812 | 15 | 800 | 39 | 816 | 14 | 102 |
| 79 | 178 | 58104 | 2.8 | 14.5927 | 1.8 | 1.3842 | 2.1 | 0.1465 | 1.2 | 0.56 | 881 | 10 | 882 | 13 | 885 | 37 | 881 | 10 | 100 |
| 73 | 92 | 34462 | 1.4 | 14.4475 | 2.2 | 1.4560 | 2.7 | 0.1526 | 1.6 | 0.58 | 915 | 14 | 912 | 16 | 905 | 45 | 915 | 14 | 101 |
| 6 | 88 | 19527 | 0.9 | 14.0483 | 5.1 | 1.5419 | 5.3 | 0.1571 | 1.4 | 0.26 | 941 | 12 | 947 | 33 | 963 | 105 | 941 | 12 | 98 |
| 54 | 93 | 28113 | 1.1 | 13.9699 | 2.0 | 1.6286 | 2.3 | 0.1650 | 1.0 | 0.44 | 985 | 9 | 981 | 14 | 974 | 42 | 985 | 9 | 101 |
| 19 | 503 | 11234 | 2.2 | 13.4815 | 1.3 | 1.7078 | 3.5 | 0.1670 | 3.3 | 0.93 | 995 | 30 | 1011 | 22 | 1046 | 26 | 995 | 30 | 95 |
| 50 | 39 | 16020 | 2.5 | 13.3081 | 5.4 | 1.7595 | 5.6 | 0.1698 | 1.4 | 0.25 | 1011 | 13 | 1031 | 36 | 1072 | 109 | 1011 | 13 | 94 |
| 45 | 641 | 40253 | 3.9 | 13.3535 | 1.0 | 1.7983 | 2.2 | 0.1742 | 1.9 | 0.88 | 1035 | 18 | 1045 | 14 | 1065 | 21 | 1035 | 18 | 97 |
| 96 | 110 | 40128 | 2.9 | 13.3682 | 1.4 | 1.8402 | 1.6 | 0.1784 | 0.9 | 0.55 | 1058 | 9 | 1060 | 11 | 1063 | 27 | 1058 | 9 | 100 |
| 43 | 484 | 22854 | 3.1 | 13.0985 | 1.3 | 1.8794 | 4.2 | 0.1785 | 4.0 | 0.95 | 1059 | 39 | 1074 | 28 | 1104 | 26 | 1059 | 39 | 96 |
| 58 | 108 | 84926 | 1.6 | 13.2625 | 1.3 | 1.9179 | 3.8 | 0.1845 | 3.6 | 0.94 | 1091 | 36 | 1087 | 26 | 1079 | 26 | 1091 | 36 | 101 |
| 69 | 124 | 55612 | 1.6 | 13.2473 | 1.1 | 1.9343 | 2.2 | 0.1858 | 1.9 | 0.86 | 1099 | 19 | 1093 | 15 | 1082 | 22 | 1099 | 19 | 102 |
| 105 | 41 | 14252 | 1.8 | 12.8324 | 3.9 | 2.0594 | 4.8 | 0.1917 | 2.8 | 0.58 | 1130 | 29 | 1135 | 33 | 1145 | 78 | 1130 | 29 | 99 |
| 51 | 110 | 65392 | 2.4 | 12.5775 | 0.8 | 2.2073 | 2.0 | 0.2014 | 1.8 | 0.91 | 1183 | 19 | 1183 | 14 | 1185 | 16 | 1183 | 19 | 100 |
| 87 | 173 | 91158 | 3.1 | 12.6166 | 0.6 | 2.2210 | 1.8 | 0.2032 | 1.7 | 0.94 | 1193 | 19 | 1188 | 13 | 1179 | 13 | 1193 | 19 | 101 |
| 31 | 411 | 115397 | 4.4 | 11.6310 | 0.8 | 2.7730 | 2.0 | 0.2339 | 1.9 | 0.92 | 1355 | 23 | 1348 | 15 | 1338 | 16 | 1338 | 16 | 101 |
| 86 | 197 | 75085 | 1.8 | 11.6254 | 0.7 | 2.6937 | 2.4 | 0.2271 | 2.3 | 0.96 | 1319 | 27 | 1327 | 18 | 1339 | 13 | 1339 | 13 | 99 |
| 85 | 90 | 60750 | 2.7 | 11.4994 | 1.2 | 2.7715 | 1.6 | 0.2311 | 1.1 | 0.68 | 1341 | 13 | 1348 | 12 | 1360 | 23 | 1360 | 23 | 99 |
| 91 | 144 | 15646 | 1.2 | 11.3842 | 0.8 | 2.9372 | 1.7 | 0.2425 | 1.5 | 0.87 | 1400 | 19 | 1392 | 13 | 1379 | 16 | 1379 | 16 | 102 |
| 103 | 127 | 84745 | 2.3 | 11.3503 | 1.4 | 2.8590 | 2.3 | 0.2354 | 1.8 | 0.78 | 1363 | 22 | 1371 | 17 | 1385 | 27 | 1385 | 27 | 98 |
| 84 | 37 | 10952 | 2.8 | 11.0587 | 2.5 | 3.0731 | 2.6 | 0.2465 | 0.9 | 0.35 | 1420 | 12 | 1426 | 20 | 1435 | 47 | 1435 | 47 | 99 |
| 7 | 131 | 73323 | 4.1 | 11.0135 | 1.8 | 3.1311 | 2.2 | 0.2501 | 1.3 | 0.58 | 1439 | 16 | 1440 | 17 | 1442 | 34 | 1442 | 34 | 100 |
| 102 | 218 | 97469 | 2.5 | 10.9020 | 0.5 | 3.1869 | 2.6 | 0.2520 | 2.6 | 0.98 | 1449 | 34 | 1454 | 20 | 1462 | 9 | 1462 | 9 | 99 |
| 81 | 101 | 59911 | 3.0 | 10.7830 | 1.2 | 3.2321 | 1.4 | 0.2528 | 0.7 | 0.49 | 1453 | 9 | 1465 | 11 | 1483 | 23 | 1483 | 23 | 98 |
| 62 | 74 | 76170 | 1.6 | 10.2131 | 2.0 | 3.3969 | 2.4 | 0.2516 | 1.3 | 0.53 | 1447 | 16 | 1504 | 19 | 1585 | 37 | 1585 | 37 | 91 |
| 55 | 186 | 47692 | 2.9 | 10.2118 | 0.3 | 3.7858 | 1.0 | 0.2804 | 0.9 | 0.94 | 1593 | 13 | 1590 | 8 | 1585 | 6 | 1585 | 6 | 101 |
| 65 | 40 | 22156 | 1.3 | 10.1832 | 2.3 | 3.8185 | 3.0 | 0.2820 | 2.0 | 0.64 | 1602 | 28 | 1597 | 24 | 1590 | 43 | 1590 | 43 | 101 |
| 75 | 41 | 7041 | 1.1 | 9.8700 | 2.4 | 4.0134 | 3.0 | 0.2873 | 1.7 | 0.58 | 1628 | 25 | 1637 | 24 | 1648 | 45 | 1648 | 45 | 99 |
| 64 | 69 | 65236 | 1.7 | 9.2092 | 0.7 | 4.7061 | 1.9 | 0.3143 | 1.8 | 0.94 | 1762 | 28 | 1768 | 16 | 1776 | 12 | 1776 | 12 | 99 |
| 23 | 318 | 270592 | 2.9 | 9.1934 | 0.6 | 4.8895 | 2.1 | 0.3260 | 2.0 | 0.96 | 1819 | 32 | 1800 | 18 | 1779 | 10 | 1779 | 10 | 102 |
| 33 | 50 | 27294 | 1.4 | 9.1506 | 2.0 | 4.7358 | 3.5 | 0.3143 | 2.9 | 0.82 | 1762 | 44 | 1774 | 29 | 1787 | 37 | 1787 | 37 | 99 |
| 28 | 59 | 27990 | 1.2 | 9.0035 | 4.3 | 5.1424 | 4.6 | 0.3358 | 1.5 | 0.34 | 1866 | 25 | 1843 | 39 | 1817 | 79 | 1817 | 79 | 103 |
| 32 | 95 | 43235 | 1.2 | 8.8566 | 1.7 | 5.3266 | 3.2 | 0.3421 | 2.7 | 0.85 | 1897 | 44 | 1873 | 27 | 1847 | 30 | 1847 | 30 | 103 |
| 24 | 116 | 26488 | 2.4 | 8.8222 | 1.0 | 5.2426 | 3.5 | 0.3354 | 3.3 | 0.96 | 1865 | 54 | 1860 | 30 | 1854 | 18 | 1854 | 18 | 101 |
| 80 | 99 | 86530 | 1.9 | 8.8202 | 0.6 | 5.2120 | 1.3 | 0.3334 | 1.1 | 0.87 | 1855 | 18 | 1855 | 11 | 1854 | 12 | 1854 | 12 | 100 |
| 40 | 298 | 182566 | 4.9 | 8.8085 | 0.7 | 5.2180 | 1.4 | 0.3334 | 1.2 | 0.87 | 1855 | 20 | 1856 | 12 | 1857 | 13 | 1857 | 13 | 100 |
| 68 | 107 | 84092 | 2.3 | 8.8081 | 0.9 | 5.3917 | 1.7 | 0.3444 | 1.5 | 0.85 | 1908 | 24 | 1884 | 15 | 1857 | 17 | 1857 | 17 | 103 |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 95 | 145 | 227168 | 1.9 | 8.8036 | 0.5 | 5.2180 | 0.9 | 0.3332 | 0.8 | 0.86 | 1854 | 13 | 1856 | 8 | 1858 | 8 | 1858 | 8 | 100 |
| 89 | 32 | 22953 | 2.1 | 8.7954 | 2.2 | 5.2267 | 2.9 | 0.3334 | 1.9 | 0.64 | 1855 | 30 | 1857 | 25 | 1859 | 40 | 1859 | 40 | 100 |
| 3 | 69 | 26043 | 1.0 | 8.7946 | 2.7 | 5.2128 | 3.0 | 0.3325 | 1.3 | 0.44 | 1850 | 21 | 1855 | 25 | 1859 | 48 | 1859 | 48 | 100 |
| 10 | 199 | 132147 | 2.5 | 8.7943 | 0.6 | 5.3149 | 2.0 | 0.3390 | 1.9 | 0.96 | 1882 | 31 | 1871 | 17 | 1860 | 10 | 1860 | 10 | 101 |
| 83 | 176 | 123373 | 1.3 | 8.7901 | 0.4 | 5.1914 | 0.6 | 0.3310 | 0.4 | 0.67 | 1843 | 6 | 1851 | 5 | 1860 | 8 | 1860 | 8 | 99 |
| 67 | 85 | 51833 | 1.6 | 8.7815 | 0.4 | 5.3138 | 1.9 | 0.3384 | 1.9 | 0.98 | 1879 | 30 | 1871 | 16 | 1862 | 7 | 1862 | 7 | 101 |
| 71 | 114 | 94483 | 0.8 | 8.7685 | 0.7 | 5.0882 | 2.1 | 0.3236 | 2.0 | 0.95 | 1807 | 32 | 1834 | 18 | 1865 | 12 | 1865 | 12 | 97 |
| 100 | 181 | 28644 | 1.8 | 8.7683 | 0.5 | 5.2480 | 0.9 | 0.3337 | 0.7 | 0.83 | 1856 | 12 | 1860 | 8 | 1865 | 9 | 1865 | 9 | 100 |
| 1 | 199 | 127365 | 1.5 | 8.7671 | 0.9 | 5.2204 | 1.7 | 0.3319 | 1.5 | 0.86 | 1848 | 24 | 1856 | 15 | 1865 | 16 | 1865 | 16 | 99 |
| 25 | 52 | 41547 | 1.2 | 8.7496 | 3.9 | 5.3624 | 4.4 | 0.3403 | 2.1 | 0.47 | 1888 | 34 | 1879 | 37 | 1869 | 70 | 1869 | 70 | 101 |
| 49 | 135 | 136309 | 2.1 | 8.7433 | 0.5 | 5.0606 | 0.8 | 0.3209 | 0.6 | 0.81 | 1794 | 10 | 1830 | 7 | 1870 | 8 | 1870 | 8 | 96 |
| 104 | 135 | 5298 | 0.6 | 8.7384 | 1.7 | 5.0073 | 2.3 | 0.3173 | 1.4 | 0.64 | 1777 | 23 | 1821 | 19 | 1871 | 31 | 1871 | 31 | 95 |
| 34 | 212 | 106648 | 2.2 | 8.7371 | 0.8 | 5.3126 | 1.1 | 0.3366 | 0.7 | 0.65 | 1871 | 12 | 1871 | 10 | 1871 | 15 | 1871 | 15 | 100 |
| 82 | 45 | 2893 | 1.6 | 8.7325 | 1.9 | 5.2954 | 3.0 | 0.3354 | 2.3 | 0.76 | 1864 | 37 | 1868 | 26 | 1872 | 35 | 1872 | 35 | 100 |
| 52 | 61 | 40967 | 0.9 | 8.7259 | 0.9 | 5.3617 | 2.1 | 0.3393 | 1.9 | 0.90 | 1883 | 32 | 1879 | 18 | 1874 | 17 | 1874 | 17 | 101 |
| 8 | 86 | 49462 | 2.5 | 8.7202 | 2.7 | 5.2878 | 2.9 | 0.3344 | 1.2 | 0.40 | 1860 | 19 | 1867 | 25 | 1875 | 48 | 1875 | 48 | 99 |
| 30 | 292 | 13977 | 2.6 | 8.7141 | 0.8 | 5.5280 | 3.2 | 0.3494 | 3.1 | 0.97 | 1932 | 51 | 1905 | 27 | 1876 | 14 | 1876 | 14 | 103 |
| 29 | 197 | 121751 | 1.5 | 8.7133 | 0.8 | 5.3941 | 1.2 | 0.3409 | 1.0 | 0.78 | 1891 | 16 | 1884 | 11 | 1876 | 14 | 1876 | 14 | 101 |
| 59 | 17 | 9711 | 0.6 | 8.6981 | 3.2 | 5.5100 | 4.3 | 0.3476 | 2.8 | 0.65 | 1923 | 46 | 1902 | 37 | 1879 | 58 | 1879 | 58 | 102 |
| 88 | 97 | 79289 | 1.7 | 8.6970 | 0.6 | 5.2063 | 2.2 | 0.3284 | 2.1 | 0.96 | 1831 | 34 | 1854 | 19 | 1880 | 11 | 1880 | 11 | 97 |
| 38 | 65 | 49844 | 1.5 | 8.6686 | 1.7 | 5.4520 | 2.8 | 0.3428 | 2.3 | 0.80 | 1900 | 37 | 1893 | 24 | 1885 | 31 | 1885 | 31 | 101 |
| 93 | 99 | 68781 | 2.1 | 8.6161 | 0.7 | 5.5990 | 1.9 | 0.3499 | 1.7 | 0.92 | 1934 | 29 | 1916 | 16 | 1896 | 13 | 1896 | 13 | 102 |
| 53 | 116 | 3472 | 1.6 | 8.5442 | 4.0 | 5.3358 | 4.1 | 0.3306 | 1 | 0.28 | 1842 | 19 | 1875 | 35 | 1911 | 71 | 1911 | 71 | 96 |
| 42 | 86 | 52190 | 2.3 | 8.5094 | 1.5 | 5.5762 | 2.6 | 0.3441 | 2.1 | 0.83 | 1907 | 35 | 1912 | 22 | 1919 | 26 | 1919 | 26 | 99 |
| 20 | 309 | 154536 | 2.3 | 8.4882 | 0.5 | 5.7686 | 1.4 | 0.3551 | 1.2 | 0.92 | 1959 | 21 | 1942 | 12 | 1923 | 10 | 1923 | 10 | 102 |
| 27 | 66 | 36083 | 3.5 | 8.4624 | 1.3 | 5.7238 | 1.9 | 0.3513 | 1.4 | 0.71 | 1941 | 23 | 1935 | 17 | 1929 | 24 | 1929 | 24 | 101 |
| 56 | 147 | 50910 | 1.3 | 8.4399 | 0.3 | 5.7912 | 1.1 | 0.3545 | 1.1 | 0.97 | 1956 | 18 | 1945 | 10 | 1933 | 5 | 1933 | 5 | 101 |
| 44 | 60 | 1668 | 0.6 | 8.4049 | 4.1 | 5.7151 | 5.0 | 0.3484 | 2.8 | 0.56 | 1927 | 47 | 1934 | 43 | 1941 | 74 | 1941 | 74 | 99 |
| 36 | 266 | 183952 | 2.3 | 8.2457 | 0.5 | 5.9828 | 1.4 | 0.3578 | 1.3 | 0.93 | 1972 | 23 | 1973 | 12 | 1975 | 9 | 1975 | 9 | 100 |
| 16 | 121 | 55575 | 1.3 | 8.1812 | 1.4 | 5.8107 | 1.7 | 0.3448 | 1.0 | 0.59 | 1910 | 17 | 1948 | 15 | 1989 | 25 | 1989 | 25 | 96 |
| 2 | 741 | 32639 | 4.6 | 8.1776 | 0.3 | 5.8724 | 0.9 | 0.3483 | 0.8 | 0.93 | 1926 | 14 | 1957 | 8 | 1990 | 6 | 1990 | 6 | 97 |
| 101 | 79 | 39742 | 1.5 | 8.1508 | 0.7 | 6.2087 | 1.9 | 0.3670 | 1.7 | 0.93 | 2015 | 30 | 2006 | 16 | 1996 | 13 | 1996 | 13 | 101 |
| 47 | 277 | 6210 | 1.2 | 8.1336 | 0.3 | 6.0058 | 1.1 | 0.3543 | 1 | 0.97 | 1955 | 19 | 1977 | 10 | 1999 | 5 | 1999 | 5 | 98 |
| 21 | 197 | 248054 | 1.7 | 8.1224 | 0.5 | 6.2381 | 1.1 | 0.3675 | 1.0 | 0.89 | 2018 | 17 | 2010 | 10 | 2002 | 9 | 2002 | 9 | 101 |
| 63 | 167 | 50318 | 2.5 | 8.1163 | 0.5 | 6.3608 | 1.2 | 0.3744 | 1.1 | 0.90 | 2050 | 19 | 2027 | 10 | 2003 | 9 | 2003 | 9 | 102 |
| 17 | 33 | 19858 | 2.7 | 7.9294 | 2.2 | 6.5017 | 4.2 | 0.3739 | 3.5 | 0.85 | 2048 | 62 | 2046 | 37 | 2044 | 39 | 2044 | 39 | 100 |
| 39 | 37 | 25352 | 2.3 | 7.7813 | 2.3 | 6.8865 | 5.2 | 0.3886 | 4.6 | 0.89 | 2117 | 84 | 2097 | 46 | 2078 | 41 | 2078 | 41 | 102 |
| 98 | 47 | 47572 | 1.3 | 6.6589 | 0.9 | 9.1280 | 1.4 | 0.4408 | 1.1 | 0.78 | 2354 | 21 | 2351 | 13 | 2348 | 15 | 2348 | 15 | 100 |
| 97 | 163 | 178657 | 0.8 | 6.3388 | 0.2 | 10.1206 | 2.0 | 0.4653 | 1.9 | 0.99 | 2463 | 40 | 2446 | 18 | 2432 | 4 | 2432 | 4 | 101 |
| 5 | 64 | 69793 | 0.4 | 6.1169 | 0.8 | 10.5733 | 1.1 | 0.4691 | 0.8 | 0.73 | 2479 | 17 | 2486 | 11 | 2492 | 13 | 2492 | 13 | 99 |
| 14 | 514 | 62671 | 5.3 | 5.9675 | 1.7 | 11.1455 | 4.0 | 0.4824 | 3.6 | 0.90 | 2538 | 76 | 2535 | 37 | 2534 | 29 | 2534 | 29 | 100 |
| 94 | 107 | 58612 | 1.0 | 5.9597 | 0.6 | 11.2583 | 1.3 | 0.4866 | 1.1 | 0.88 | 2556 | 23 | 2545 | 12 | 2536 | 10 | 2536 | 10 | 101 |
| 46 | 67 | 84648 | 2.1 | 5.6255 | 0.6 | 12.0500 | 2.9 | 0.4916 | 2.8 | 0.98 | 2578 | 60 | 2608 | 27 | 2632 | 10 | 2632 | 10 | 98 |
| 15 | 34 | 11109 | 0.5 | 5.4109 | 1.1 | 13.0048 | 5.2 | 0.5104 | 5.1 | 0.98 | 2658 | 112 | 2680 | 49 | 2697 | 18 | 2697 | 18 | 99 |
| 22 | 188 | 176821 | 2.3 | 5.3930 | 0.3 | 13.7556 | 1.1 | 0.5380 | 1.1 | 0.97 | 2775 | 24 | 2733 | 10 | 2702 | 5 | 2702 | 5 | 103 |
| 26 | 151 | 86690 | 1.4 | 5.3478 | 0.4 | 13.7060 | 0.8 | 0.5316 | 0.7 | 0.89 | 2748 | 16 | 2730 | 8 | 2716 | 6 | 2716 | 6 | 101 |
| 61 | 21 | 99934 | 0.8 | 5.3072 | 1.1 | 13.8551 | 1.9 | 0.5333 | 1.6 | 0.84 | 2755 | 36 | 2740 | 18 | 2728 | 18 | 2728 | 18 | 101 |
| 11 | 202 | 128070 | 1.5 | 5.2980 | 0.5 | 13.7724 | 1.5 | 0.5292 | 1.4 | 0.94 | 2738 | 32 | 2734 | 14 | 2731 | 9 | 2731 | 9 | 100 |
| 70 | 46 | 64597 | 1.3 | 5.2822 | 0.4 | 14.0713 | 1.6 | 0.5391 | 1.5 | 0.96 | 2780 | 34 | 2755 | 15 | 2736 | 7 | 2736 | 7 | 102 |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| ***Rejected Analyses: >10% discordant, >5% reversely discordant, >10% 2 sigma uncertainty*** | | | | | | | | | | | | | | | | | | | |
| 77 | 54 | 9025 | 1.7 | 14.9472 | 4.9 | 0.1493 | 1.7 | 0.3259 | 897 | 14 | 879 | 30 | 835 | 101 | 798 | 36 | 879 | 30 | 110 |
| 66 | 52 | 14631 | 3.4 | 14.4813 | 5.5 | 0.1591 | 1.8 | 0.3152 | 952 | 16 | 937 | 35 | 900 | 114 | 976 | 81 | 937 | 35 | 96 |
| 9 | 99 | 17076 | 1.9 | 14.3906 | 4.4 | 1.5490 | 6.2 | 0.1617 | 4.3 | 0.70 | 966 | 39 | 950.1 | 38.2 | 913 | 91 | 966 | 39 | 106 |
| 41 | 41 | 18164 | 2.7 | 14.4855 | 9.0 | 1.5074 | 9.9 | 0.1584 | 4.1 | 0.42 | 948 | 37 | 933.4 | 60.7 | 900 | 187 | 948 | 37 | 105 |
| 13 | 94 | 19193 | 2.9 | 13.9922 | 3.6 | 1.7002 | 4.7 | 0.1725 | 3.0 | 0.64 | 1026 | 28 | 1008.6 | 29.9 | 971 | 74 | 1026 | 28 | 106 |
| 76 | 143 | 408 | 1.8 | 12.9818 | 5.3 | 0.1372 | 2.1 | 0.3681 | 829 | 16 | 913 | 34 | 1122 | 106 | 997 | 74 | 913 | 34 | 92 |
| 72 | 572 | 7575 | 2.3 | 11.5880 | 0.4 | 0.2019 | 2.1 | 0.9861 | 1185 | 23 | 1243 | 15 | 1345 | 7 | 989 | 58 | 1243 | 15 | 126 |
| 12 | 18 | 7913 | 1.0 | 9.4051 | 6.8 | 4.9531 | 7.2 | 0.3379 | 2.2 | 0.31 | 1876 | 36 | 1811.4 | 60.8 | 1737 | 126 | 1737 | 126 | 108 |
| 18 | 35 | 14070 | 0.9 | 9.0172 | 5.6 | 5.0551 | 6.1 | 0.3306 | 2.4 | 0.40 | 1841 | 39 | 1829 | 52 | 1814 | 102 | 1814 | 102 | 101 |
| 57 | 75 | 4328 | 1.5 | 8.7325 | 1.3 | 4.4442 | 2.8 | 0.2815 | 2.4 | 0.88 | 1599 | 34 | 1721 | 23 | 1872 | 24 | 1872 | 24 | 85 |
| 99 | 90 | 2932 | 1.5 | 8.6700 | 1.8 | 0.3282 | 1.9 | 0.7390 | 1830 | 31 | 1856 | 22 | 1885 | 32 | 1743 | 198 | 1885 | 32 | 106 |
| 74 | 148 | 20001 | 1.7 | 8.0250 | 4.9 | 0.3428 | 1.6 | 0.3048 | 1900 | 26 | 1960 | 45 | 2023 | 88 | 1605 | 61 | 2023 | 88 | 122 |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 78 | 42 | 5841 | 0.7 | 7.9095 | 23 | 0.2403 | 57 | 0.9299 | 1388 | 717 | 1672 | 553 | 2049 | 405 | 35 | 2608 | 2049 | 405 | 4803 |
| 37 | 63 | 16161 | 0.9 | 7.9001 | 8.7 | 12.5293 | 154 | 0.7179 | 153 | 1.00 | 3488 | 4893 | 2644.9 | #NUM! | 2051 | 154 | 2051 | 154 | 170 |
| 92 | 55 | 156 | 0.8 | 6.9250 | 6.7 | 0.3573 | 4.4 | 0.5521 | 1969 | 75 | 2126 | 71 | 2281 | 115 | 2286 | 456 | 2281 | 115 | 93 |
| 35 | 761 | 1419 | 2.6 | 6.6183 | 0.7 | 4.1629 | 2.2 | 0.1998 | 2.1 | 0.95 | 1174 | 22 | 1666.8 | 17.8 | 2358 | 12 | 2358 | 12 | 50 |
| 48 | 41 | 2965 | 0.7 | 5.4245 | 55 | 0.6861 | 66 | 0.7676 | 3368 | 1771 | 2959 | 1149 | 2692 | 1002 | 9136 | 7560 | 2692 | 1002 | 32 |
| 60 | 158 | 78162 | 1.5 | 5.8394 | 1.3 | 0.4981 | 1.2 | 0.6725 | 2606 | 25 | 2586 | 16 | 2570 | 22 | 2849 | 162 | 2849 | 162 | 91 |

Analyses with >10% uncertainty (1-sigma) in 206Pb/238U age are not included.
Analyses with >10% uncertainty (1-sigma) in 206Pb/207Pb age are not included, unless 206Pb/238U age is <500 Ma.
Best age is determined from 206Pb/238U age for analyses with 206Pb/238U age <1200 Ma and from 206Pb/207Pb age for analyses with 206Pb/238Uage > 1200 Ma.
Concordance is based on 206Pb/238U age / 206Pb/207Pb age.  Value is not reported for 206Pb/238U ages <500 Ma because of large uncertainty in 206Pb/207Pb age.
Analyses with 206Pb/238U age > 500 Ma and with >10% discordance (<90% concordance) are not included.
Analyses with 206Pb/238U age > 500 Ma and with >5% reverse discordance (<105% concordance) are not included.
All uncertainties are reported at the 1-sigma level, and include only measurement errors.
Analyses conducted by LA-MC-ICPMS, as described by Gehrels et al. (2008).
U concentration and U/Th are calibrated relative to Sri Lanka zircon standard and are accurate to ~20%.
Common Pb correction is from measured 204Pb with common Pb composition interpreted from Stacey and Kramers (1975).
Common Pb composition assigned uncertainties of 1.5 for 206Pb/204Pb, 0.3 for 207Pb/204Pb, and 2.0 for 208Pb/204Pb.
U/Pb and 206Pb/207Pb fractionation is calibrated relative to fragments of a large Sri Lanka zircon of 563.5 ± 3.2 Ma (2-sigma).
U decay constants and composition as follows: 235U = 9.8485 x 10-10, 238U = 1.55125 x 10-10, 238U/235U = 137.88.
Weighted mean and concordia plots determined with Isoplot (Ludwig, 2003).

Table DR5 . Lu-Hf isotopic data from pre-Mississippian strata of the North Slope subterrane, NE Brooks Range, Alaska.

| Order | Sample | ($^{176}$Yb + $^{176}$Lu) / $^{176}$Hf (%) | Volts Hf | $^{176}$Hf/$^{177}$Hf | ± (1σ) | $^{176}$Lu/$^{177}$Hf | $^{176}$Hf/$^{177}$Hf (T) | E-Hf (0) | E-Hf (0) ± (1σ) | E-Hf (T) | Age (Ma) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | F624A-9 | 13.4 | 3.1 | 0.282072 | 0.000032 | 0.000754 | 0.282062 | -25.2 | 1.1 | -9.5 | 719 |
| 8 | F624A-14 | 5.6 | 3.8 | 0.282081 | 0.000028 | 0.000290 | 0.282077 | -24.9 | 1.0 | -9.0 | 719 |
| 3 | F624A-6 | 21.2 | 3.6 | 0.282118 | 0.000030 | 0.001335 | 0.282100 | -23.6 | 1.0 | -8.2 | 719 |
| 1 | F624A-3 | 23.4 | 3.7 | 0.282070 | 0.000028 | 0.001312 | 0.282053 | -25.3 | 1.0 | -9.9 | 719 |
| 19 | F624A-51 | 18.2 | 3.6 | 0.282002 | 0.000029 | 0.001029 | 0.281988 | -27.7 | 1.0 | -12.1 | 719 |
| 2 | F624A-4 | 2.4 | 3.3 | 0.282098 | 0.000026 | 0.000122 | 0.282096 | -24.3 | 0.9 | -8.3 | 719 |
| 20 | F624A-73 | 9.5 | 2.6 | 0.282310 | 0.000030 | 0.000566 | 0.282302 | -16.8 | 1.1 | -1.0 | 719 |
| 7 | F624A-12 | 14.0 | 3.2 | 0.282018 | 0.000031 | 0.000763 | 0.282008 | -27.1 | 1.1 | -11.5 | 719 |
| 13 | F624A-40 | 9.7 | 3.3 | 0.282092 | 0.000025 | 0.000538 | 0.282084 | -24.5 | 0.9 | -8.7 | 719 |
| 16 | F624A-48 | 16.9 | 3.3 | 0.282060 | 0.000028 | 0.000969 | 0.282047 | -25.6 | 1.0 | -10.1 | 719 |
| 21 | F624A-74 | 9.5 | 3.0 | 0.282204 | 0.000030 | 0.000554 | 0.282193 | -20.5 | 1.1 | 2.6 | 1052 |
| 18 | F624A-64 | 13.3 | 2.9 | 0.282229 | 0.000025 | 0.000814 | 0.282212 | -19.7 | 0.9 | 3.7 | 1068 |
| 9 | F624A-18 | 9.0 | 2.9 | 0.282074 | 0.000031 | 0.000533 | 0.282062 | -25.1 | 1.1 | 1.9 | 1222 |
| 23 | F624A-83 | 14.9 | 2.6 | 0.282094 | 0.000030 | 0.000883 | 0.282072 | -24.4 | 1.0 | 4.0 | 1300 |
| 6 | F624A-10 | 45.7 | 2.1 | 0.282059 | 0.000040 | 0.002722 | 0.281991 | -25.7 | 1.4 | 1.4 | 1313 |
| 22 | F624A-76 | 12.2 | 2.3 | 0.282095 | 0.000032 | 0.000747 | 0.282077 | -24.4 | 1.1 | 4.8 | 1327 |
| 15 | F624A-97 | 6.8 | 4.1 | 0.281521 | 0.000026 | 0.000444 | 0.281510 | -44.7 | 0.9 | -14.2 | 1376 |
| 10 | F624A-23 | 14.5 | 3.2 | 0.282041 | 0.000034 | 0.000862 | 0.282017 | -26.3 | 1.2 | 5.9 | 1471 |
| 17 | F624A-61 | 21.3 | 2.6 | 0.282026 | 0.000037 | 0.001232 | 0.281991 | -26.9 | 1.3 | 5.2 | 1479 |
| 12 | F624A-39 | 2.0 | 3.3 | 0.281850 | 0.000031 | 0.000132 | 0.281846 | -33.1 | 1.1 | 0.2 | 1486 |
| 24 | F624A-86 | 10.6 | 2.6 | 0.281602 | 0.000030 | 0.000611 | 0.281581 | -41.8 | 1.1 | -1.3 | 1829 |
| 11 | F624A-21 | 11.5 | 2.8 | 0.281399 | 0.000030 | 0.000669 | 0.281375 | -49.0 | 1.1 | -6.7 | 1914 |
| 14 | F624A-34 | 17.3 | 2.4 | 0.281305 | 0.000033 | 0.001179 | 0.281250 | -52.3 | 1.2 | 0.8 | 2428 |
| 4 | F624A-7 | 7.4 | 3.6 | 0.280985 | 0.000026 | 0.000451 | 0.280960 | -63.7 | 0.9 | -1.2 | 2781 |
| | | | | | | | | | | | |
| 9 | F1145-21 | 13.5 | 2.1 | 0.282083 | 0.000033 | 0.000739 | 0.282071 | -24.8 | 1.2 | -5.4 | 886 |
| 17 | F1145-35 | 12.1 | 2.3 | 0.282269 | 0.000031 | 0.000671 | 0.282258 | -18.2 | 1.1 | 1.3 | 891 |
| 16 | F1145-34 | 11.0 | 2.4 | 0.282493 | 0.000025 | 0.000625 | 0.282482 | -10.3 | 0.9 | 9.9 | 919 |
| 22 | F1145-52 | 17.9 | 2.2 | 0.282267 | 0.000036 | 0.001026 | 0.282248 | -18.3 | 1.3 | 2.7 | 967 |
| 7 | F1145-18 | 21.7 | 2.6 | 0.282261 | 0.000034 | 0.001128 | 0.282238 | -18.5 | 1.2 | 5.6 | 1110 |
| 2 | F1145-4 | 7.6 | 1.9 | 0.282344 | 0.000038 | 0.000479 | 0.282334 | -15.6 | 1.4 | 9.2 | 1119 |
| 23 | F1145-56 | 18.4 | 2.0 | 0.282414 | 0.000032 | 0.000977 | 0.282393 | -13.1 | 1.1 | 11.5 | 1128 |
| 19 | F1145-38 | 11.0 | 2.2 | 0.282134 | 0.000033 | 0.000602 | 0.282121 | -23.0 | 1.2 | 1.8 | 1128 |
| 30 | F1145-71 | 13.5 | 2.1 | 0.282293 | 0.000035 | 0.000758 | 0.282277 | -17.4 | 1.2 | 7.9 | 1152 |
| 3 | F1145-7 | 12.1 | 2.6 | 0.282120 | 0.000030 | 0.000673 | 0.282106 | -23.5 | 1.1 | 2.0 | 1162 |
| 40 | F1145-94 | 22.0 | 2.0 | 0.282148 | 0.000043 | 0.001094 | 0.282123 | -22.5 | 1.5 | 4.3 | 1234 |
| 24 | F1145-57 | 26.0 | 2.3 | 0.282215 | 0.000045 | 0.001623 | 0.282174 | -20.2 | 1.6 | 8.4 | 1333 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | F1145-44 | 14.8 | 2.6 | 0.281979 | 0.000040 | 0.001239 | 0.281948 | -28.5 | 1.4 | 0.6 | 1345 |
| 4 | F1145-11 | 11.5 | 2.4 | 0.281999 | 0.000034 | 0.000618 | 0.281983 | -27.8 | 1.2 | 2.1 | 1357 |
| 26 | F1145-62 | 15.9 | 2.1 | 0.282010 | 0.000034 | 0.000864 | 0.281986 | -27.4 | 1.2 | 4.6 | 1462 |
| 33 | F1145-76 | 10.2 | 2.2 | 0.281931 | 0.000034 | 0.000614 | 0.281914 | -30.2 | 1.2 | 2.7 | 1488 |
| 12 | F1145-26 | 26.6 | 1.9 | 0.281895 | 0.000034 | 0.001447 | 0.281854 | -31.5 | 1.2 | 0.7 | 1493 |
| 10 | F1145-23 | 15.3 | 2.7 | 0.281801 | 0.000045 | 0.000829 | 0.281776 | -34.8 | 1.6 | 1.3 | 1642 |
| 32 | F1145-75 | 27.6 | 1.6 | 0.281832 | 0.000038 | 0.001545 | 0.281781 | -33.7 | 1.4 | 3.2 | 1714 |
| 14 | F1145-30 | 8.2 | 2.6 | 0.281546 | 0.000032 | 0.000542 | 0.281528 | -43.8 | 1.1 | -5.2 | 1741 |
| 34 | F1145-78 | 18.8 | 1.7 | 0.281612 | 0.000034 | 0.001030 | 0.281576 | -41.5 | 1.2 | -0.9 | 1854 |
| 15 | F1145-33 | 14.5 | 2.3 | 0.281603 | 0.000033 | 0.000772 | 0.281576 | -41.8 | 1.2 | -0.8 | 1857 |
| 18 | F1145-37 | 11.2 | 2.1 | 0.281548 | 0.000036 | 0.000607 | 0.281527 | -43.7 | 1.3 | -2.6 | 1859 |
| 5 | F1145-15 | 10.8 | 2.2 | 0.281660 | 0.000032 | 0.000604 | 0.281639 | -39.8 | 1.1 | 1.5 | 1863 |
| 38 | F1145-83 | 7.4 | 2.1 | 0.281419 | 0.000039 | 0.000462 | 0.281403 | -48.3 | 1.4 | -6.6 | 1872 |
| 37 | F1145-81 | 17.5 | 2.3 | 0.281613 | 0.000036 | 0.000946 | 0.281579 | -41.5 | 1.3 | -0.3 | 1875 |
| 27 | F1145-65 | 15.6 | 2.2 | 0.281482 | 0.000033 | 0.000842 | 0.281451 | -46.1 | 1.2 | -4.0 | 1914 |
| 39 | F1145-86 | 3.9 | 2.4 | 0.281426 | 0.000041 | 0.000243 | 0.281417 | -48.1 | 1.4 | -4.5 | 1943 |
| 35 | F1145-79 | 3.8 | 2.2 | 0.281637 | 0.000041 | 0.000235 | 0.281628 | -40.6 | 1.5 | 4.1 | 1989 |
| 11 | F1145-24 | 8.6 | 2.1 | 0.281615 | 0.000040 | 0.000548 | 0.281594 | -41.4 | 1.4 | 3.1 | 1999 |
| 31 | F1145-74 | 6.8 | 2.2 | 0.281654 | 0.000040 | 0.000386 | 0.281639 | -40.0 | 1.4 | 4.7 | 2001 |
| 25 | F1145-63 | 12.6 | 2.1 | 0.281494 | 0.000033 | 0.000670 | 0.281468 | -45.6 | 1.2 | -0.6 | 2033 |
| 8 | F1145-19 | 14.1 | 2.2 | 0.281652 | 0.000040 | 0.000807 | 0.281621 | -40.1 | 1.4 | 4.9 | 2036 |
| 1 | F1145-1 | 2.5 | 2.2 | 0.281343 | 0.000032 | 0.000147 | 0.281336 | -51.0 | 1.1 | 6.0 | 2519 |
| 28 | F1145-69 | 6.0 | 2.9 | 0.281111 | 0.000031 | 0.000334 | 0.281095 | -59.2 | 1.1 | -1.9 | 2546 |
| 41 | F1145-5 | 13.8 | 1.7 | 0.281146 | 0.000046 | 0.000777 | 0.281108 | -57.9 | 1.6 | -1.0 | 2563 |
| 6 | F1145-16 | 11.1 | 1.9 | 0.281044 | 0.000037 | 0.000600 | 0.281013 | -61.6 | 1.3 | -0.4 | 2737 |
| 36 | F1145-80 | 7.2 | 2.3 | 0.280901 | 0.000041 | 0.000427 | 0.280879 | -66.6 | 1.5 | -5.0 | 2744 |
| 29 | F1145-70 | 5.3 | 2.2 | 0.280869 | 0.000041 | 0.000396 | 0.280848 | -67.8 | 1.4 | -5.9 | 2752 |
| 21 | F1145-46 | 21.0 | 1.8 | 0.281085 | 0.000041 | 0.001160 | 0.281022 | -60.1 | 1.5 | 1.6 | 2808 |
| 13 | F1145-29 | 7.4 | 2.6 | 0.281005 | 0.000039 | 0.000475 | 0.280979 | -62.9 | 1.4 | 2.6 | 2917 |
| | | | | | | | | | | | |
| 29 | J1107A-4 | 32.1 | 1.6 | 0.282150 | 0.000050 | 0.001651 | 0.282126 | -22.4 | 1.8 | -5.7 | 789 |
| 21 | J1107B-45 | 13.2 | 3.2 | 0.282131 | 0.000021 | 0.000844 | 0.282118 | -23.1 | 0.8 | -5.3 | 816 |
| 23 | J1107B-34 | 13.3 | 3.6 | 0.282187 | 0.000034 | 0.000722 | 0.282175 | -21.1 | 1.2 | -1.9 | 879 |
| 19 | J1107B-28 | 10.9 | 3.3 | 0.282176 | 0.000028 | 0.000675 | 0.282165 | -21.5 | 1.0 | -1.6 | 908 |
| 7 | J1107B-9 | 31.9 | 2.5 | 0.282223 | 0.000033 | 0.001962 | 0.282187 | -19.9 | 1.2 | 0.7 | 974 |
| 3 | J1107B-51 | 17.0 | 3.2 | 0.282301 | 0.000029 | 0.001025 | 0.282281 | -17.1 | 1.0 | 6.0 | 1063 |
| 40 | J1107A-45 | 22.5 | 1.7 | 0.282035 | 0.000041 | 0.001514 | 0.282005 | -26.5 | 1.5 | -3.7 | 1065 |
| 1 | J1107B-5 | 8.5 | 2.5 | 0.282157 | 0.000037 | 0.000511 | 0.282146 | -22.2 | 1.3 | 1.4 | 1072 |
| 11 | J1107B-24 | 13.0 | 3.1 | 0.282177 | 0.000033 | 0.000830 | 0.282160 | -21.5 | 1.2 | 2.2 | 1083 |
| 8 | J1107B-6 | 10.9 | 2.6 | 0.282198 | 0.000041 | 0.000659 | 0.282183 | -20.8 | 1.4 | 5.3 | 1185 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36 | J1107A-31 | 9.4 | 3.3 | 0.281941 | 0.000032 | 0.000533 | 0.281928 | -29.8 | 1.1 | -0.3 | 1338 |
| 22 | J1107B-57 | 14.5 | 3.4 | 0.282100 | 0.000035 | 0.000916 | 0.282074 | -24.2 | 1.2 | 7.8 | 1462 |
| 6 | J1107B-10 | 28.4 | 3.4 | 0.281835 | 0.000036 | 0.001744 | 0.281783 | -33.6 | 1.3 | 0.3 | 1585 |
| 16 | J1107B-17 | 6.2 | 2.3 | 0.281779 | 0.000034 | 0.000381 | 0.281768 | -35.6 | 1.2 | -0.3 | 1585 |
| 13 | J1107B-20 | 18.3 | 2.3 | 0.281462 | 0.000039 | 0.001020 | 0.281432 | -46.8 | 1.4 | -12.1 | 1591 |
| 37 | J1107A-33 | 13.9 | 2.1 | 0.281570 | 0.000036 | 0.000742 | 0.281545 | -43.0 | 1.3 | -3.6 | 1787 |
| 24 | J1107B-35 | 19.2 | 2.0 | 0.281566 | 0.000035 | 0.001117 | 0.281527 | -43.1 | 1.2 | -2.6 | 1856 |
| 27 | J1107B-50 | 7.0 | 3.2 | 0.281621 | 0.000025 | 0.000425 | 0.281606 | -41.2 | 0.9 | 0.2 | 1858 |
| 10 | J1107B-23 | 10.6 | 3.1 | 0.281762 | 0.000031 | 0.000670 | 0.281738 | -36.2 | 1.1 | 4.9 | 1858 |
| 25 | J1107B-38 | 4.8 | 3.3 | 0.281498 | 0.000031 | 0.000303 | 0.281488 | -45.5 | 1.1 | -3.9 | 1860 |
| 9 | J1107B-22 | 6.6 | 3.4 | 0.281464 | 0.000031 | 0.000426 | 0.281449 | -46.7 | 1.1 | -5.2 | 1863 |
| 17 | J1107B-55 | 19.2 | 2.6 | 0.281645 | 0.000027 | 0.001085 | 0.281607 | -40.3 | 0.9 | 0.4 | 1865 |
| 20 | J1107B-26 | 15.6 | 2.6 | 0.281311 | 0.000034 | 0.000937 | 0.281278 | -52.1 | 1.2 | -11.2 | 1866 |
| 2 | J1107B-4 | 13.9 | 2.8 | 0.281500 | 0.000026 | 0.000882 | 0.281469 | -45.4 | 0.9 | -4.3 | 1870 |
| 18 | J1107B-59 | 14.8 | 2.0 | 0.281212 | 0.000028 | 0.000987 | 0.281177 | -55.6 | 1.0 | -14.7 | 1871 |
| 38 | J1107A-34 | 11.3 | 2.5 | 0.281593 | 0.000038 | 0.000625 | 0.281571 | -42.1 | 1.3 | -0.7 | 1871 |
| 35 | J1107A-30 | 50.5 | 2.0 | 0.281411 | 0.000058 | 0.002912 | 0.281307 | -48.6 | 2.1 | -10.0 | 1876 |
| 33 | J1107A-20 | 18.1 | 2.2 | 0.281171 | 0.000033 | 0.001073 | 0.281132 | -57.1 | 1.2 | -15.1 | 1923 |
| 39 | J1107A-36 | 13.0 | 2.3 | 0.281552 | 0.000029 | 0.000802 | 0.281522 | -43.6 | 1.0 | 0.0 | 1975 |
| 28 | J1107A-2 | 9.4 | 2.4 | 0.281679 | 0.000036 | 0.000676 | 0.281653 | -39.1 | 1.3 | 5.0 | 1990 |
| 31 | J1107A-21 | 13.2 | 2.1 | 0.281613 | 0.000041 | 0.000747 | 0.281584 | -41.4 | 1.4 | 2.8 | 2002 |
| 14 | J1107B-18 | 13.0 | 2.5 | 0.281534 | 0.000033 | 0.000767 | 0.281505 | -44.2 | 1.2 | 0.0 | 2004 |
| 30 | J1107A-17 | 17.2 | 1.9 | 0.281624 | 0.000043 | 0.001083 | 0.281582 | -41.0 | 1.5 | 3.7 | 2044 |
| 5 | J1107B-52 | 13.2 | 3.2 | 0.281348 | 0.000032 | 0.000807 | 0.281310 | -50.8 | 1.1 | 3.1 | 2432 |
| 26 | J1107B-49 | 12.4 | 2.5 | 0.281262 | 0.000040 | 0.000791 | 0.281224 | -53.8 | 1.4 | 2.4 | 2536 |
| 4 | J1107B-1 | 6.2 | 3.0 | 0.281156 | 0.000024 | 0.000376 | 0.281137 | -57.6 | 0.9 | 1.6 | 2632 |
| 32 | J1107A-22 | 15.0 | 1.9 | 0.281124 | 0.000042 | 0.000829 | 0.281081 | -58.7 | 1.5 | 1.2 | 2702 |
| 34 | J1107A-26 | 8.1 | 2.8 | 0.281044 | 0.000033 | 0.000564 | 0.281015 | -61.6 | 1.2 | -0.8 | 2716 |
| 15 | J1107B-16 | 10.6 | 2.4 | 0.280973 | 0.000030 | 0.000673 | 0.280938 | -64.1 | 1.1 | -3.2 | 2729 |
| 12 | J1107B-25 | 11.4 | 2.5 | 0.281053 | 0.000041 | 0.000667 | 0.281018 | -61.2 | 1.5 | -0.2 | 2737 |
| | | | | | | | | | | | |
| 36 | J1005-144B-50 | 12.4 | 3.8 | 0.282329 | 0.000026 | 0.000776 | 0.282315 | -16.1 | 0.9 | 4.5 | 941 |
| 18 | J1005-144B-97 | 10.1 | 2.8 | 0.282341 | 0.000041 | 0.000678 | 0.282326 | -15.7 | 1.4 | 9.1 | 1128 |
| 31 | J1005-144B-36 | 13.7 | 3.4 | 0.282188 | 0.000029 | 0.000858 | 0.282170 | -21.1 | 1.0 | 4.0 | 1149 |
| 10 | J1005-144B-10 | 15.7 | 3.3 | 0.282261 | 0.000025 | 0.001061 | 0.282238 | -18.5 | 0.9 | 6.5 | 1153 |
| 6 | J1005-144B-5 | 11.2 | 3.4 | 0.282151 | 0.000027 | 0.000766 | 0.282134 | -22.4 | 1.0 | 3.1 | 1167 |
| 11 | J1005-144B-8 | 11.7 | 4.1 | 0.282108 | 0.000032 | 0.000823 | 0.282089 | -23.9 | 1.1 | 1.9 | 1182 |
| 37 | J1005-144B-48 | 28.2 | 3.5 | 0.282271 | 0.000031 | 0.001693 | 0.282231 | -18.2 | 1.1 | 8.2 | 1239 |
| 32 | J1005-144B-39 | 13.7 | 3.6 | 0.282082 | 0.000029 | 0.000847 | 0.282062 | -24.9 | 1.0 | 2.3 | 1241 |
| 8 | J1005-144B-3 | 21.6 | 3.3 | 0.282310 | 0.000034 | 0.001436 | 0.282276 | -16.8 | 1.2 | 10.1 | 1249 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 41 | J1005-144B-58 | 14.4 | 3.7 | 0.282137 | 0.000031 | 0.000951 | 0.282111 | -22.9 | 1.1 | 8.4 | 1431 |
| 30 | J1005-144B-40 | 13.2 | 2.9 | 0.281968 | 0.000033 | 0.000871 | 0.281944 | -28.9 | 1.2 | 2.5 | 1432 |
| 29 | J1005-144B-33 | 13.5 | 2.7 | 0.282053 | 0.000030 | 0.001004 | 0.282026 | -25.9 | 1.0 | 5.7 | 1446 |
| 39 | J1005-144B-55 | 25.5 | 3.2 | 0.282119 | 0.000024 | 0.001740 | 0.282072 | -23.5 | 0.9 | 7.5 | 1453 |
| 20 | J1005-144B-19 | 17.5 | 2.9 | 0.282156 | 0.000037 | 0.001267 | 0.282121 | -22.2 | 1.3 | 9.6 | 1471 |
| 2 | J1005-144A-30 | 21.9 | 2.0 | 0.281863 | 0.000043 | 0.001221 | 0.281825 | -32.6 | 1.5 | 3.3 | 1652 |
| 4 | J1005-144A-86 | 46.1 | 2.4 | 0.281900 | 0.000034 | 0.002790 | 0.281811 | -31.3 | 1.2 | 3.4 | 1681 |
| 1 | J1005-144A-25 | 13.9 | 1.3 | 0.281931 | 0.000056 | 0.000912 | 0.281900 | -30.2 | 2.0 | 8.6 | 1768 |
| 24 | J1005-144B-22 | 4.5 | 1.9 | 0.281292 | 0.000053 | 0.000306 | 0.281281 | -52.8 | 1.9 | -11.8 | 1836 |
| 22 | J1005-144B-17 | 8.0 | 2.9 | 0.281420 | 0.000036 | 0.000529 | 0.281402 | -48.3 | 1.3 | -7.5 | 1836 |
| 7 | J1005-144B-38 | 3.9 | 3.7 | 0.281233 | 0.000023 | 0.000290 | 0.281223 | -54.9 | 0.8 | -13.7 | 1846 |
| 44 | J1005-144B-61 | 12.3 | 1.7 | 0.281447 | 0.000065 | 0.000828 | 0.281418 | -47.3 | 2.3 | -6.7 | 1846 |
| 15 | J1005-144B-80 | 19.1 | 3.5 | 0.281797 | 0.000033 | 0.001216 | 0.281755 | -34.9 | 1.2 | 5.3 | 1849 |
| 40 | J1005-144B-87 | 9.4 | 3.5 | 0.281500 | 0.000039 | 0.000670 | 0.281477 | -45.4 | 1.4 | -4.2 | 1864 |
| 27 | J1005-144B-27 | 9.8 | 3.5 | 0.281655 | 0.000025 | 0.000634 | 0.281633 | -40.0 | 0.9 | 1.4 | 1869 |
| 34 | J1005-144B-47 | 13.6 | 2.7 | 0.281617 | 0.000034 | 0.000921 | 0.281584 | -41.3 | 1.2 | -0.1 | 1877 |
| 12 | J1005-144B-11 | 9.4 | 3.6 | 0.281490 | 0.000027 | 0.000650 | 0.281466 | -45.8 | 1.0 | -2.6 | 1949 |
| 43 | J1005-144B-56 | 28.2 | 2.9 | 0.281575 | 0.000035 | 0.001687 | 0.281512 | -42.8 | 1.2 | -0.8 | 1956 |
| 25 | J1005-144B-25 | 12.9 | 3.8 | 0.281517 | 0.000039 | 0.000869 | 0.281484 | -44.9 | 1.4 | -1.7 | 1962 |
| 26 | J1005-144B-21 | 12.3 | 3.6 | 0.281660 | 0.000028 | 0.000818 | 0.281629 | -39.8 | 1.0 | 4.0 | 1986 |
| 35 | J1005-144B-46 | 10.6 | 3.6 | 0.281409 | 0.000035 | 0.000804 | 0.281378 | -48.7 | 1.2 | -4.4 | 2008 |
| 9 | J1005-144B-7 | 9.9 | 3.9 | 0.281475 | 0.000028 | 0.000648 | 0.281449 | -46.3 | 1.0 | -0.2 | 2079 |
| 23 | J1005-144B-18 | 23.3 | 3.0 | 0.281388 | 0.000033 | 0.001592 | 0.281325 | -49.4 | 1.2 | -4.4 | 2089 |
| 21 | J1005-144B-20 | 13.6 | 3.2 | 0.281446 | 0.000026 | 0.000826 | 0.281413 | -47.3 | 0.9 | -1.1 | 2096 |
| 16 | J1005-144B-78 | 11.1 | 3.8 | 0.281231 | 0.000027 | 0.000709 | 0.281200 | -55.0 | 0.9 | -3.8 | 2306 |
| 33 | J1005-144B-43 | 8.2 | 3.2 | 0.281192 | 0.000030 | 0.000575 | 0.281164 | -56.3 | 1.1 | 0.6 | 2547 |
| 28 | J1005-144B-26 | 14.0 | 3.5 | 0.281170 | 0.000025 | 0.000931 | 0.281123 | -57.1 | 0.9 | 0.5 | 2605 |
| 17 | J1005-144B-96 | 7.8 | 4.0 | 0.281127 | 0.000031 | 0.000516 | 0.281102 | -58.6 | 1.1 | -0.2 | 2609 |
| 13 | J1005-144B-77 | 7.1 | 3.6 | 0.281217 | 0.000030 | 0.000549 | 0.281189 | -55.4 | 1.1 | 4.2 | 2663 |
| 5 | J1005-144B-93 | 5.9 | 2.8 | 0.280994 | 0.000039 | 0.000457 | 0.280970 | -63.3 | 1.4 | -2.5 | 2709 |
| 42 | J1005-144B-90 | 4.9 | 1.0 | 0.281100 | 0.000120 | 0.000318 | 0.281083 | -59.6 | 4.3 | 1.6 | 2716 |
| 45 | J1005-144B-98 | 3.1 | 3.3 | 0.281092 | 0.000031 | 0.000220 | 0.281081 | -59.9 | 1.1 | 2.9 | 2774 |
| 38 | J1005-144B-65 | 8.2 | 3.5 | 0.280975 | 0.000026 | 0.000565 | 0.280945 | -64.0 | 0.9 | -0.7 | 2827 |
| 3 | J1005-144A-45 | 11.5 | 3.0 | 0.280620 | 0.000028 | 0.000717 | 0.280577 | -76.6 | 1.0 | -6.4 | 3141 |
| | | | | | | | | | | | |
| 7 | J1105-16 | 11.5 | 3.7 | 0.282378 | 0.000025 | 0.000740 | 0.282372 | -14.4 | 0.9 | -5.2 | 423 |
| 19 | J1105-51 | 12.7 | 4.1 | 0.282806 | 0.000024 | 0.000840 | 0.282800 | 0.8 | 0.8 | 10.2 | 432 |
| 20 | J1105-56 | 14.6 | 4.4 | 0.282554 | 0.000021 | 0.000999 | 0.282545 | -8.2 | 0.7 | 1.8 | 460 |
| 8 | J1105-22 | 21.3 | 3.3 | 0.282281 | 0.000019 | 0.001225 | 0.282267 | -17.8 | 0.7 | -4.2 | 632 |
| 1 | J1105-1 | 27.1 | 3.9 | 0.282383 | 0.000026 | 0.001634 | 0.282354 | -14.2 | 0.9 | 5.6 | 931 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | J1105-7 | 27.7 | 3.6 | 0.282204 | 0.000026 | 0.001814 | 0.282171 | -20.6 | 0.9 | -0.1 | 967 |
| 16 | J1105-47 | 10.2 | 5.2 | 0.282191 | 0.000019 | 0.000674 | 0.282179 | -21.0 | 0.7 | 0.5 | 978 |
| 9 | J1105-24 | 41.7 | 3.2 | 0.282363 | 0.000032 | 0.002492 | 0.282309 | -14.9 | 1.1 | 8.7 | 1136 |
| 13 | J1105-39 | 13.0 | 3.0 | 0.281776 | 0.000026 | 0.000978 | 0.281749 | -35.7 | 0.9 | -3.6 | 1470 |
| 21 | J1105-59 | 16.8 | 2.0 | 0.282084 | 0.000035 | 0.001116 | 0.282053 | -24.8 | 1.2 | 7.3 | 1475 |
| 12 | J1105-37 | 24.6 | 4.1 | 0.281935 | 0.000020 | 0.001516 | 0.281892 | -30.1 | 0.7 | 1.9 | 1488 |
| 2 | J1105-75 | 12.6 | 3.4 | 0.281806 | 0.000025 | 0.000785 | 0.281780 | -34.6 | 0.9 | 3.8 | 1742 |
| 6 | J1105-20 | 7.7 | 4.0 | 0.281480 | 0.000021 | 0.000542 | 0.281461 | -46.1 | 0.8 | -5.4 | 1837 |
| 23 | J1105-64 | 19.3 | 3.7 | 0.281511 | 0.000024 | 0.001164 | 0.281471 | -45.0 | 0.8 | -5.0 | 1839 |
| 14 | J1105-44 | 9.6 | 3.2 | 0.281488 | 0.000035 | 0.000707 | 0.281463 | -45.9 | 1.2 | -5.2 | 1839 |
| 17 | J1105-48 | 10.9 | 3.5 | 0.281505 | 0.000026 | 0.000698 | 0.281480 | -45.3 | 0.9 | -4.5 | 1845 |
| 11 | J1105-31 | 19.8 | 2.9 | 0.281689 | 0.000041 | 0.001295 | 0.281643 | -38.8 | 1.4 | 1.5 | 1855 |
| 3 | J1105-6 | 16.1 | 3.3 | 0.281687 | 0.000032 | 0.001023 | 0.281650 | -38.8 | 1.1 | 1.9 | 1860 |
| 15 | J1105-46 | 10.9 | 3.3 | 0.281443 | 0.000027 | 0.000710 | 0.281417 | -47.4 | 1.0 | -4.9 | 1924 |
| 10 | J1105-30 | 46.4 | 3.2 | 0.281661 | 0.000031 | 0.002836 | 0.281552 | -39.7 | 1.1 | 2.2 | 2026 |
| 18 | J1105-58 | 18.9 | 3.7 | 0.281560 | 0.000027 | 0.001251 | 0.281511 | -43.3 | 1.0 | 2.0 | 2080 |
| 5 | J1105-19 | 10.2 | 2.2 | 0.281473 | 0.000021 | 0.000760 | 0.281442 | -46.4 | 0.7 | 0.0 | 2098 |
| 22 | J1105-53 | 6.2 | 5.0 | 0.281164 | 0.000021 | 0.000443 | 0.281141 | -57.3 | 0.7 | 1.9 | 2641 |

Data reduction methodology is from Woodhead et al. (2004)

Analytical methods described in detail by Gehrels and Pecha (2014)

(176Yb + 176Lu) / 176Hf (%) expresses the proportion of 176 due to 176Yb + 176Lu versus the proportion due to 176Hf, in %.

Volts Hf is the sum of voltages of all Hf isotopes.

176Hf/177Hf is the measured 176Hf/177Hf, corrected for fractionation and interfences. Shown with uncertainty expressed at 1-sigma.

176Lu/177Hf is the intensity of 176Lu, calculated from the measured instensity of 175Lu and 176Lu/175Lu=0.02653 (from Patchett, 1983), compared to the measured intensity of 177Hf.

Fractionation of Lu isotopes is assumed to be the same as fractionation of Yb isotopes.

176Hf/177Hf (T) is the 176Hf/177Hf corrected to the time of crystallization using a decay constant of 1.867e-11 (from Scherer et al., 2001 and Soderland et al., 2004)

E-Hf (0) is the present-day epsilon Hf value using 176Hf/177Hf=0.282785 and 176Lu/177Hf=0.0336 (from Bouvier et al., 2008). The uncertainty is expressed at 1-sigma.

E-Hf (T) is the epsilon Hf value at the time of crystallization. The uncertainty is expressed at 1-sigma.

U-Pb ages are based on 206/238 for ages younger than ~1.2 Ga, and on 206/207 for ages older than ~1.2 Ga.

Isotope ratios as follows:

| | | |
|---|---|---|
| 180/177 | 1.88666 | Patchett (1983) |
| 179/177 | 0.7325 | Patchett & Tatsumoto (1980) |
| 178/177 | 1.46718 | Patchett (1983) |
| 176/177 | 0.28216 | Patchett (1983) |
| 174/177 | 0.00871 | Patchett (1983) |
| 176/175 | 0.02653 | Patchett (1983) |
| 176/171 | 0.901691 | Vervoort et al. (2004) |
| 173/171 | 1.1323569 | Vervoort et al. (2004) |
| 172/171 | 1.531736 | Vervoort et al. (2004) |