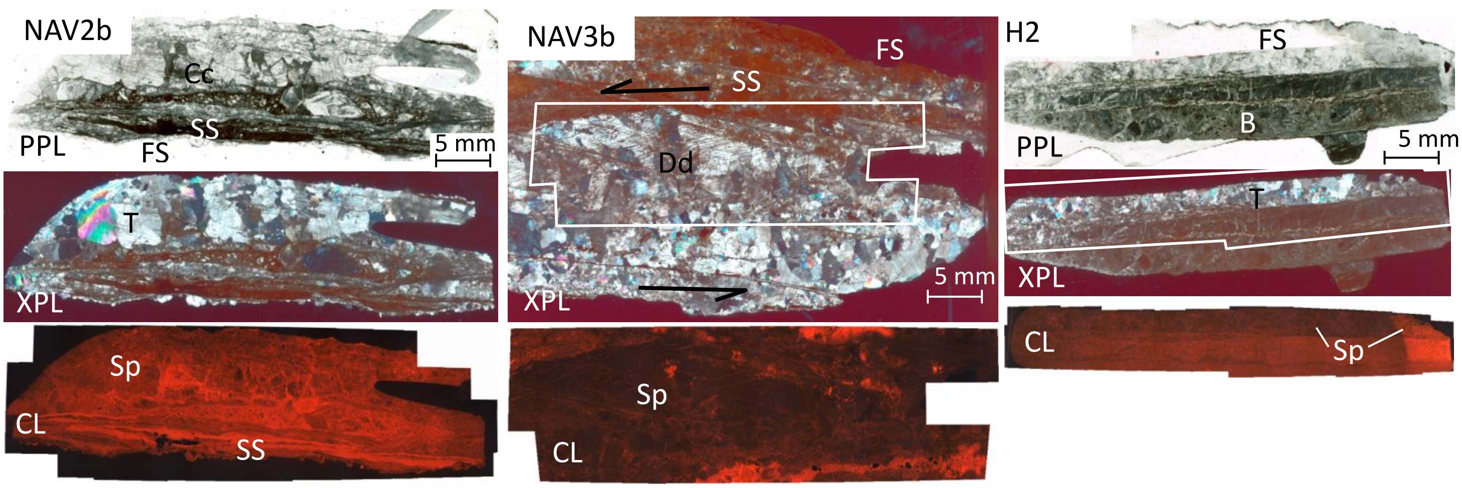
## DR1: Microstructural observations of fault-related calcites

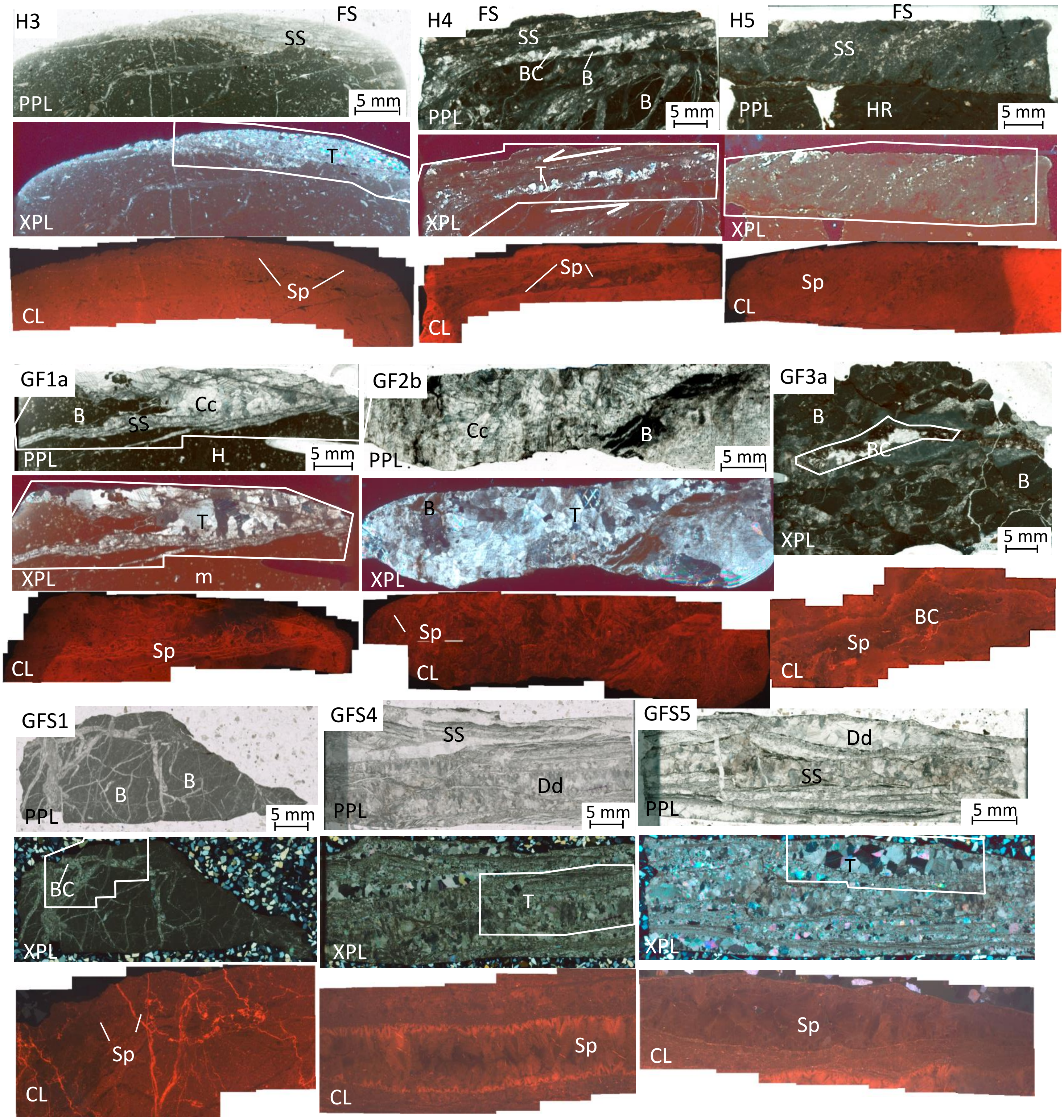
Fault-related calcite precipitates within carbonate-hosting rocks, imaged under the microscope with plane-polarized Light (PPL), cross-polarized light (XPL), and cathodoluminescence light (CL). Secondary calcites are characterized by relatively large crystals (Cc)—many with twins (T)—in comparison to the micritic carbonate (mc) of the host carbonate rock (HR). U-Pb spot analyses (Sp) are within syn-deformational calcite precipitates. Three main kinds of syn-deformational calcite precipitates are documented: (1) calcite within a sheared fault surface (SS), wherein both hosting rock micritic carbonate (mc) and secondary calcite (Cc) are sheared and smeared along fault surface (FS); (2) calcite breccia cement (BC) surrounding angular breccia fragments (B); (3) calcite filling dilation sites that are deformed by small offset or sheared sigmoidal structures (Dd). White outlines indicate areas of CL images.

Thin-sections are oriented perpendicular to the fault surface and projected downward; thus, the shear-sense indicators (e.g. sigmoidal dilation structures) on the thin-section images are correspond to the sense of shear on the fault plane.




**LEGEND**

**Sp** - spot analysis array
**Cc** - calcite crystals
**mc** - micritic carbonates
**HR** - hosting rock
**T** - twins morphology
**SS** - sheared surface
**FS** - fault surface
**BC** - breccia cement
**B** - breccia fragment
**Dd** - deformed dilation site

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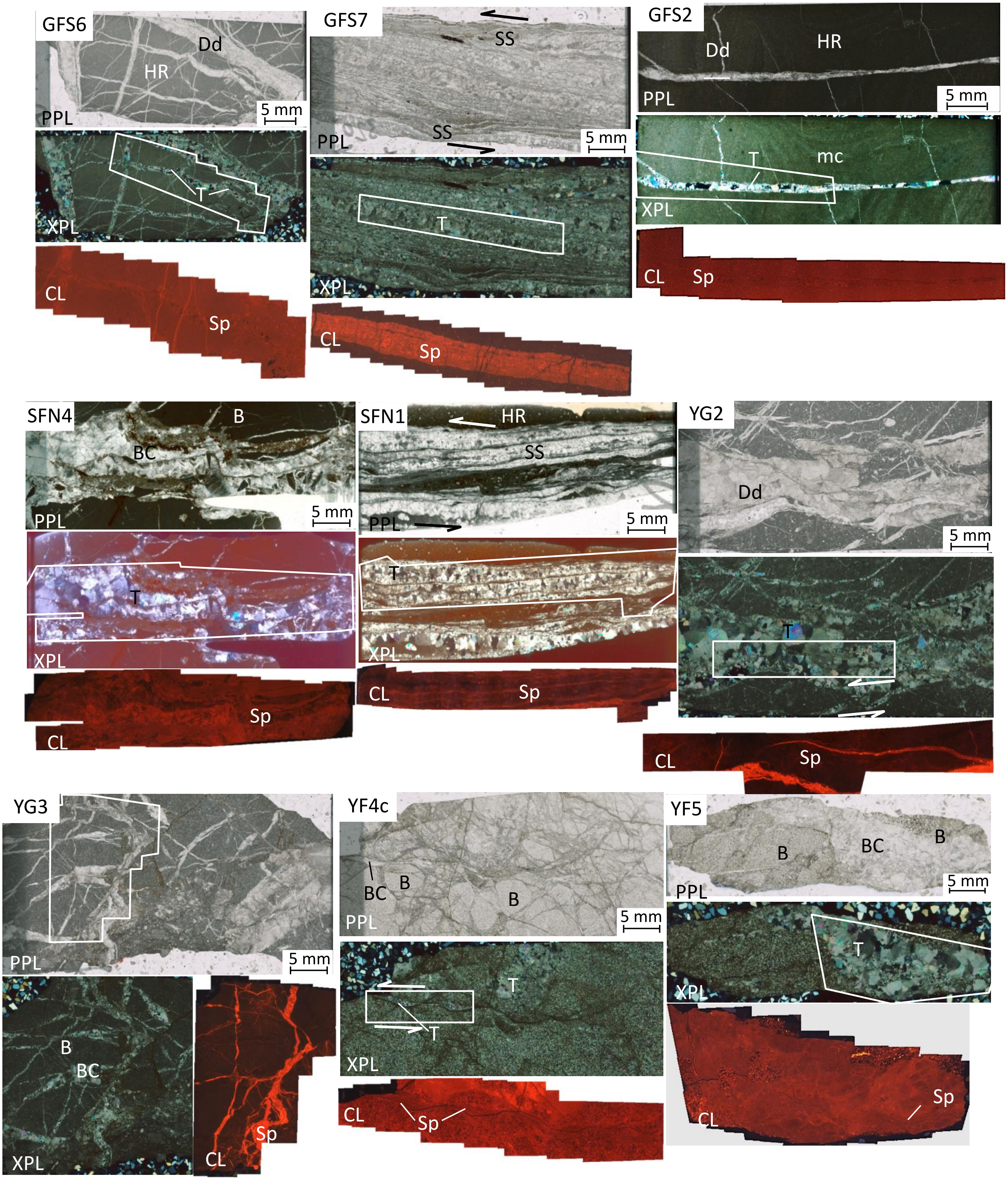


**LEGEND**

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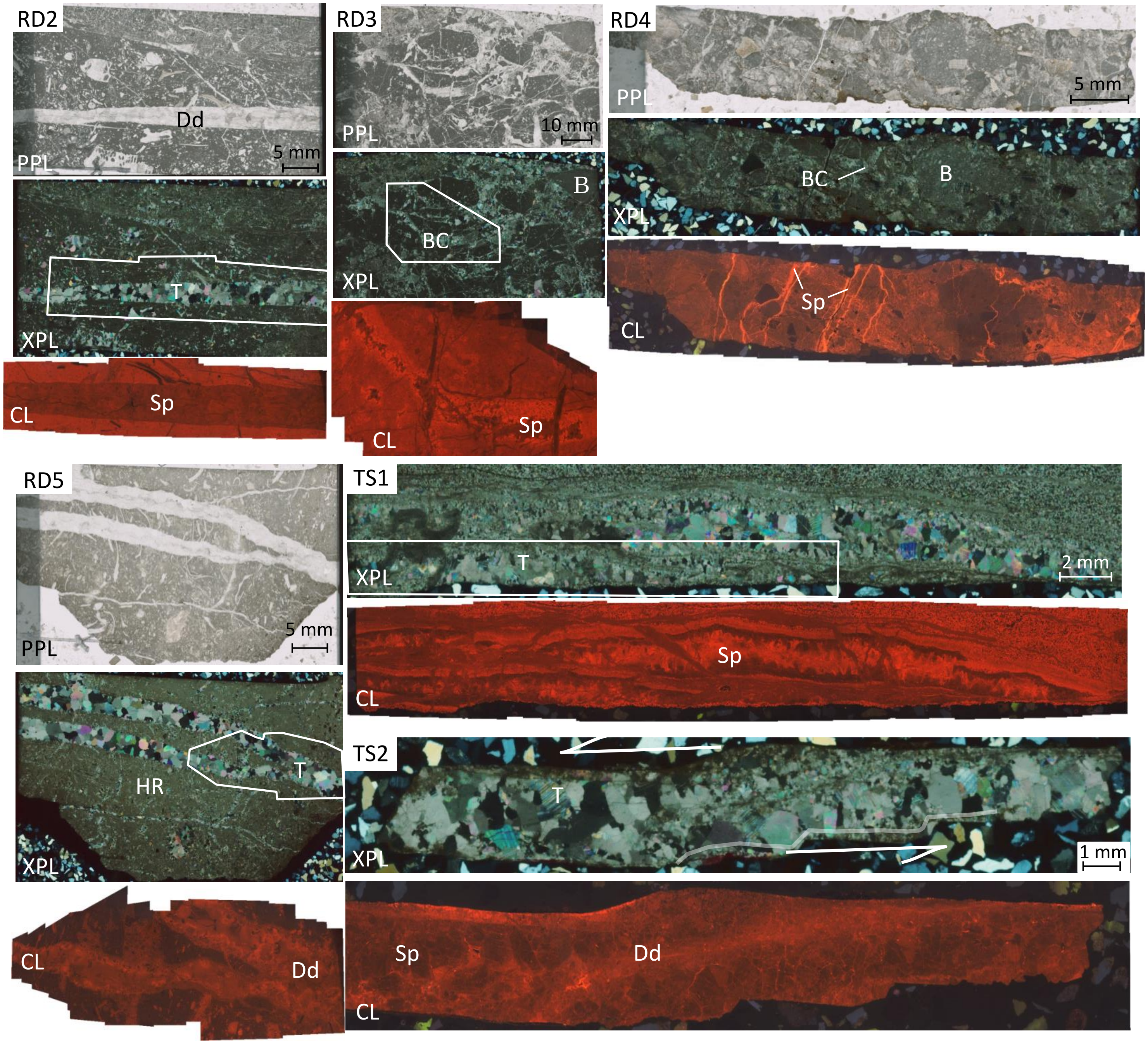


**LEGEND**

**Sp** - spot analysis array
**Cc** - calcite crystals
**mc** - micritic carbonates
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**DR2: Methodology of calcite U-Pb geochronology with LA-ICPMS-MC**

Fault-related calcite precipitates were examined under plane, polarized, and cathodoluminescence (CL) microscopy to identify distinct precipitation phases and their association with syn-faulting microstructures (see DRF1 file). U-Pb analyses of calcite were conducted at the University of California, Santa Barbara following the protocol of Kylander-Clark et al. (2013) with several modifications, specific to calcite work. The protocol is very similar to recent calcite LA U-Pb work reported elsewhere (Li et al., 2014; Coogan et al., 2016; Ring and Gerdes, 2016; Roberts and Walker, 2016), with the exception of using a different calcite reference material for the $^{206}Pb/^{238}U$ mass-bias correction as discussed below.

A 193 nm *Photon Machines* laser was employed, using a spot size of either 85 μm or 110 μm, and a fluence corresponding to approximately 60 nm per pulse for calcite (~1 J/cm$^2$). Analyses consisted of 200 pulses at a repetition rate of 10 Hz, preceded and followed by a baseline measurement (approx. 20 sec.). The laser-induced aerosol was carried by He from the sample cell to a mixing bulb in which the sample + He are mixed with Ar to stabilize the aerosol input to the plasma. The He–Ar aerosol is immediately directed to a *Nu Plasma HR* MC-ICPMS. The $^{238}U$ is measured on Faraday cups equipped with $10^{-11}$ ohm resistors, and $^{208}Pb$, $^{207}Pb$, $^{206}Pb$ and $^{204}Pb$ +Hg isotopes are measured on four ETP discrete-dynode electron multipliers. We used sample-standard bracketing to calibrate the Faraday-ion counter gains. U–Pb isotopic ratios and their uncertainties are calculated using *Iolite v.2.5* (Paton et al., 2010). Due to the relative dearth of homogenous calcite U-Pb reference materials (RMs), we used NIST 614 to correct for $^{207}Pb/^{206}Pb$ fractionation and for instrument drift in the $^{206}Pb/^{238}U$ ratio (Woodhead and Hergt, 2001), but not for down-hole fractionation (setting the fractionation slope to zero in *Iolite* is the same as removing the down-hole fractionation correction). We correct the $^{206}Pb/^{238}U$ ratio using a matrix-matched standard, calcite RM ASH15(D), averaging the ratio over the same part of the peak for both standards and unknowns.

The average raw age of ASH15(D) is 3.001 ± 0.012 Ma, using only the fractionation corrected $^{206}Pb/^{238}U$ and $^{207}Pb/^{206}Pb$ ratios of multiple aliquots measured by TIMS (*7*) and (Vaks et al., 2013). Additional bulk analyses of the ASH15(D) RMs based on the $^{235}U$-$^{207}Pb$ system indicate slightly younger ages (2.85 Ma), and is explained by possible elevated initial $^{234}U/^{238}U$ activity ratios of the water and thus excess measured radiogenic $^{206}Pb$ (Mason et al., 2013); however, for mass-bias correction of the $^{206}Pb/^{238}U$ ratio, the measured $^{206}Pb/^{238}U$ age, rather than the $^{234}U$-corrected age, is appropriate. Thus, we used the measured vs. true Tera-Wasserburg intercept age calculated from the

NIST 614-corrected $^{206}Pb/^{238}U$ and $^{207}Pb/^{206}Pb$ ratios (Vaks et al., 2013) and applied a linear correction factor such that the primary RM yields the correct intercept age (i.e., 3.001 Ma; see Fig.1). In all cases, data corrected for instrumental drift—using NIST 614 without a down-hole correction—yield less-scattered discordia arrays of all calcite RMs than without a drift correction (MSWDs are lower for drift-corrected data).

To ensure accuracy, we analyzed several secondary RMs: WC1 (254 Ma) and Duff Brown (64 ± 0.67 Ma), which have been used in other labs for LA mass-bias correction and/or recently dated by TIMS (Li et al., 2014; Coogan et al., 2016; Hill et al., 2016; Ring and Gerdes, 2016; Roberts and Walker, 2016). We also used two in-house carbonates with stratigraphic constraints: GSC-1 (444–419 Ma), and WP21 (35–23 Ma). Because this method is relatively new, and separating the long-term uncertainty of the $^{207}Pb/^{206}Pb$ and $^{206}Pb/^{238}U$ ratios is non trivial with RMs that are inhomogeneous in U and Pb concentrations, we propagate 2% uncertainty in the $^{206}Pb/^{238}U$ and $^{207}Pb/^{206}Pb$ ratios, as that is the minimum uncertainty necessary to propagate when assessing the reproducibility of RMs of more-universal mineral chronometers used in the UCSB LA-ICP lab. Using this method, primary and secondary reference materials yield MSWDs of typically >1, but always <3. Without a homogeneous calcite RM, the uncertainty necessary to propagate is difficult to ascertain; because the least-scattered unknown samples analyzed in this study yield $^{207}Pb/^{206}Pb$–$^{206}Pb/^{238}U$ isochrons with an MSWD near unity, propagation of further uncertainty is unwarranted. For propagation of uncertainty on calculated isochron ages, we add the inaccuracy of secondary reference materials in quadrature to the analytical uncertainty. Throughout the analytical sessions (see Fig. 2), we obtained 262.7 ± 4.0 for WC1 (254 Ma), 69.5 ± 3.5 for Duff Brown (64 Ma), 30.0 ± 2.8 for WP21 (35–23 Ma), and 437 ± 14 Ma for GSC-1 (444–419 Ma). Duff Brown, the most inaccurate, required an additional 5% uncertainty, added in quadrature, to yield an age equivalent to the TIMS age. The ages of the secondary standards may be older than expected because they are polycrystalline, with grain sizes smaller than the laser spot size, unlike both the primary RM (ASH15) and the unknowns; the polycrystalline material ablates more readily yielding greater down-hole fractionation. Indeed the polycrystalline RMs yield higher MSWDs and are skewed toward older ages; because of this, we include a 5% uncertainty to the calculated ages of the unknowns, shown in brackets within this report (see TW plots in Figs. 3-5); Note that *relative* ages of samples in this study may be compared at the 2% level.

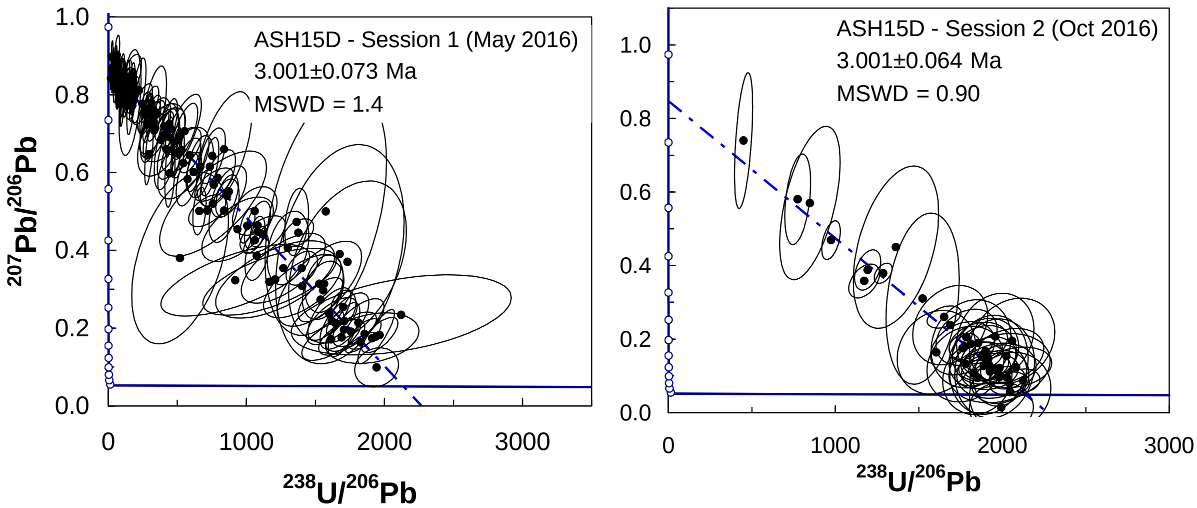



**Fig.1.** Tera–Wasserburg plot of the ASH15(D) RMs for both analytical sessions. $^{206}Pb/^{238}U$ data are corrected such that the lower intercept age is 3.001 Ma. Correction factor for the $^{206}Pb/^{238}U$ ratios in session 1 (May 2016) and 2 (October 2016) is 1.040 and 1.077, respectively.

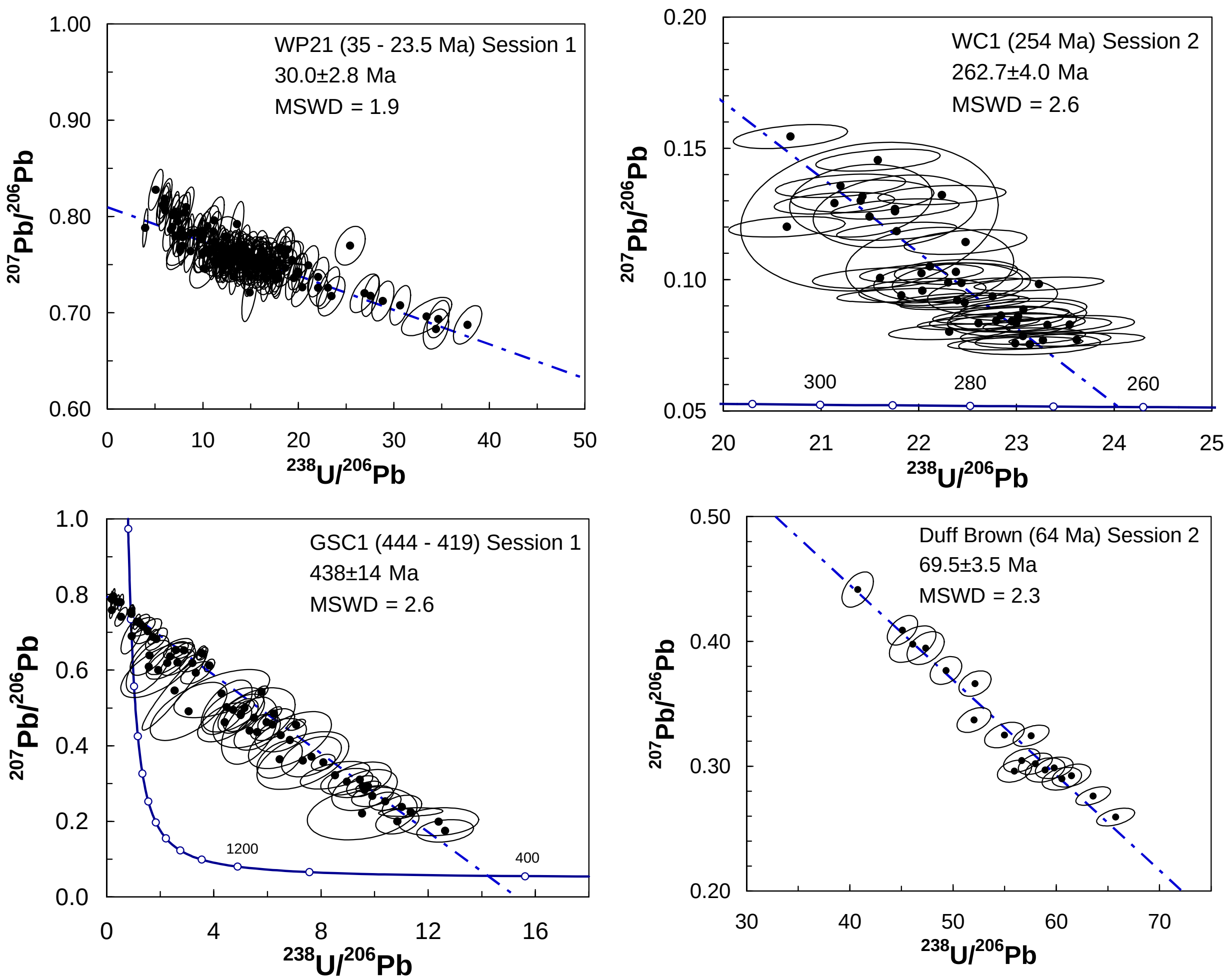



**Fig. 2.** Tera–Wasserburg plots for secondary RMs throughout both analytical sessions. Data are corrected such that the primary RM (ASH15D) yields its TIMS intercept age (Fig. 1).

**Table 1.** Location, structural data, and U-Pb ages of fault-related calcite samples from this study

| # | Sample | Latitude | Longitude | U-Pb (Ma) | ±2σ [+5%] (Ma) | *spots | MSWD | Bedding | Fault | Striation | Vein |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | dip/dip direction | | plunge/ trend | dip/ dip_dirc |
| **Newe Ativ (NA)** | | | | | | | | | | | |
| 1 | NA-V2b | 33.25758 | 35.73450 | **56.6** | 1.9 [4.7] | 26 (2) | 1.5 | 20/215 | - | 271 | 81/001 |
| 2 | NA-V3b | 33.25760 | 35.73419 | **17.13** | 0.3 [1.2] | 26 (2) | 0.64 | 20/215 | - | 319 | 67/049 |
| **Guvta Fault (H)** | | | | | | | | | | | |
| 3 | H2 | 33.27045 | 35.75541 | **14.9** | 2.6 [3.3] | 25 (3) | 0.86 | - | 73/329 | 06/062 | - |
| 4 | H3 | 33.27035 | 35.75540 | **12.74** | 0.7 [1.3] | 25 (3) | 2.2 | - | 64/323 | 04/047 | - |
| 5 | H4 | 33.27043 | 35.75540 | **12.87** | 0.5 [1.1] | 41 (1) | 1.2 | - | 65/324 | 07/050 | - |
| 6 | H5 | 33.27047 | 35.75542 | **12.9** | 0.7 [1.3] | 33 (2) | 1.2 | - | 71/322 | 05/056 | - |
| **Gishron Fault (GF)** | | | | | | | | | | | |
| 7 | GF-1a | 29.58781 | 34.88062 | **18.6** | 2.3 [3.2] | 26 (2) | 11.2 | ~ 0 | 66/198 | - | - |
| 8 | GF-2 | 29.58777 | 34.88057 | **20.08** | 0.8 [1.8] | 26 (2) | 2.9 | ~ 0 | 82/271 | - | - |
| 9 | GF-3b | 29.58749 | 34.88034 | **18.46** | 0.9 [1.8] | 26 (2) | 11.1 | ~ 0 | - | - | - |
| 10 | GFS-1 | 29.54363 | 34.88505 | **14.04** | 0.6 [1.3] | 48 | 0.92 | - | 62 / 078 | - | - |
| 11 | GFS-2 | 29.52918 | 34.88468 | **17.68** | 0.5 [1.4] | 48 | 2.3 | - | 86 / 238 | 10 / 156 | - |
| 12 | GFS-2c | 29.52918 | 34.88468 | **17.76** | 0.7 [1.5] | 30 (5) | 1.04 | - | 81 / 254 | - | - |
| 13 | GFS-3a | 29.52914 | 34.88478 | **18.05** | 0.7 [1.6] | 31 (3) | 0.78 | - | 82 / 254 | - | - |
| 14 | GFS-4 | 29.54439 | 34.88529 | **18.98** | 0.7 [1.6] | 48 | 2.8 | - | 60 / 260 | - | - |
| 15 | GFS-5 | 29.54434 | 34.88532 | **13.37** | 0.2 [0.9] | 43 (5) | 3.6 | - | - | - | 35 / 281 |
| 16 | GFS5b | 29.54434 | 34.88532 | **13.11** | 0.2 [0.8] | 45 (4) | 1.5 | - | - | - | 35 / 281 |
| 17 | GFS-6 | 29.55295 | 34.88237 | **16.74** | 0.9 [1.7] | 32 (6) | 2.1 | - | 80 / 070 | - | - |
| 18 | GFS-7 | 29.55268 | 34.88234 | **20.8** | 2.3 [3.3] | 45 (3) | 3 | - | 61 / 226 | 46 / 292 | - |
| **Shelomo Fault (SF)** | | | | | | | | | | | |
| 19 | SFN-1 | 29.57245 | 34.89114 | **15.83** | 0.4 [1.2] | 26 (2) | 1.6 | ~ 0 | 88/259 | 47/189 | - |
| 20 | SFN-4 | 29.57951 | 34.89433 | **13.65** | 0.5 [1.2] | 16 (4) | 1.2 | ~ 0 | - | - | 69/191 |
| **Yotam Graben (YG)** | | | | | | | | | | | |
| 21 | YG-2 | 29.56795 | 34.91863 | **16.7** | 2.0 [2.8] | 48 | 4.3 | - | - | - | - |
| 22 | YG-3 | 29.56795 | 34.91863 | **16.97** | 0.6 [1.4] | 47 (1) | 2.3 | - | 88 / 093 | - | - |
| **Yehoshafat Fault (YF)** | | | | | | | | | | | |
| 23 | YF-4c | 29.56033 | 34.88808 | **15.53** | 0.5 [1.3] | 47 (1) | 0.89 | - | 85 / 267 | - | - |
| 24 | YF-5 | 29.56106 | 34.88799 | **17.37** | 0.9 [1.8] | 48 | 1.07 | - | 67 / 291 | - | - |
| **Roded Fault (RD)** | | | | | | | | | | | |
| 25 | RD-2 | 29.62661 | 34.92408 | **16.48** | 0.4 [1.2] | 47 (1) | 2 | - | 73 / 088 | 07 / 355 | - |
| 26 | RD-3a | 29.62674 | 34.92399 | **92.26** | 1.0 [5.6] | 27 | 1.07 | - | 86 / 223 | 86 / 247 | - |
| | RD-3b | 29.62674 | 34.92399 | **15.76** | 0.9 [1.7] | 9 | 1.17 | - | 86 / 223 | 86 / 247 | - |
| 27 | RD-4 | 29.62633 | 34.92390 | **17.16** | 0.6 [1.4] | 43 (5) | 1.4 | - | 86 / 281 | - | - |
| 28 | RD-5 | 29.62741 | 34.92413 | **15.71** | 0.4 [1.2] | 31 (4) | 1.4 | - | 70 / 295 | - | - |
| **Tsfahot Fault (TS)** | | | | | | | | | | | |
| 29 | TS-1 | 29.53822 | 34.90251 | **18.5** | 2.1 [3.0] | 31 (4) | 2.1 | - | 80 / 223 | 02 / 315 | - |
| 30 | TS-2 | 29.53837 | 34.90248 | **6.17** | 0.8 [1.1] | 31 (4) | 1.5 | - | 78 / 220 | - | - |

* number of spot analysis. In parenthesis, number of spot that are omitted due to low counts of $^{207}Pb$

**Table 2.** Spot analysis data. Individual spot analysis for each sample are given with estimated $^{238}U$ concentrations (ppm) and corresponding signal (mV). The mass-biased corrected $^{238}U/^{206}Pb$ and $^{207}Pb/^{206}Pb$ ratios are given with their standard error (2σ) and error correlation.

| # | Sample | U ppm | 238 mV | $^{238}U/^{206}Pb$ | 2s | $^{207}Pb/^{206}Pb$ | 2s | rho |
|---|---|---|---|---|---|---|---|---|
| 1 | Nav2b-1 | 0.06 | 0.3 | 33.7 | 4.9 | 0.608 | 0.04 | 0.48 |
| 2 | Nav2b-2 | 0.05 | 0.2 | 4.31 | 0.46 | 0.767 | 0.02 | 0.15 |
| 3 | Nav2b-3 | 0.12 | 0.5 | 44.7 | 2.9 | 0.495 | 0.03 | 0.27 |
| 4 | Nav2b-4 | 0.02 | 0.1 | 2.07 | 0.88 | 0.742 | 0.03 | 0.18 |
| 5 | Nav2b-5 | 0.06 | 0.3 | 2.83 | 0.45 | 0.754 | 0.02 | 0.17 |
| 6 | Nav2b-6 | 0.08 | 0.4 | 53.6 | 5.4 | 0.477 | 0.04 | 0.34 |
| 7 | Nav2b-7 | 0.14 | 0.7 | 61.3 | 3.4 | 0.398 | 0.02 | 0.36 |
| 8 | Nav2b-8 | 0.10 | 0.4 | 54.1 | 4.2 | 0.441 | 0.03 | 0.15 |
| 9 | Nav2b-9 | 0.07 | 0.3 | 24.0 | 4.1 | 0.634 | 0.04 | 0.51 |
| 10 | Nav2b-10 | 0.11 | 0.5 | 47.4 | 4.7 | 0.459 | 0.04 | 0.46 |
| 11 | Nav2b-11 | 0.09 | 0.4 | 41.7 | 3.5 | 0.509 | 0.03 | 0.16 |
| 12 | Nav2b-12 | 0.00 | 0.0 | 0.59 | 0.11 | 0.776 | 0.03 | 0.05 |
| 13 | Nav2b-14 | 0.10 | 0.5 | 52.0 | 4.4 | 0.464 | 0.04 | 0.18 |
| 14 | Nav2b-15 | 0.10 | 0.4 | 48.5 | 3.6 | 0.505 | 0.03 | 0.30 |
| 15 | Nav2b-16 | 0.10 | 0.5 | 18.8 | 2.3 | 0.608 | 0.03 | 0.48 |
| 16 | Nav2b-17 | 0.08 | 0.3 | 37.0 | 4.3 | 0.502 | 0.04 | 0.20 |
| 17 | Nav2b-18 | 0.11 | 0.5 | 41.4 | 3.9 | 0.511 | 0.03 | 0.31 |
| 18 | Nav2b-19 | 0.11 | 0.5 | 40.0 | 2.9 | 0.537 | 0.03 | 0.23 |
| 19 | Nav2b-20 | 0.10 | 0.4 | 15.0 | 1.8 | 0.702 | 0.03 | 0.63 |
| 20 | Nav2b-21 | 0.14 | 0.6 | 10.7 | 1.1 | 0.718 | 0.02 | 0.58 |
| 21 | Nav2b-22 | 0.18 | 0.8 | 11.9 | 1.1 | 0.724 | 0.02 | 0.61 |
| 22 | Nav2b-24 | 0.16 | 0.7 | 67.2 | 4.0 | 0.367 | 0.03 | 0.14 |
| 23 | Nav2b-25 | 0.09 | 0.4 | 69.0 | 7.2 | 0.292 | 0.03 | 0.20 |
| 24 | Nav2b-26 | 0.14 | 0.6 | 26.9 | 4.9 | 0.537 | 0.05 | 0.57 |
| 25 | Nav2b-27 | 0.19 | 0.8 | 82.0 | 4.0 | 0.229 | 0.01 | 0.27 |
| 26 | Nav2b-28 | 0.12 | 0.5 | 57.6 | 4.2 | 0.405 | 0.03 | 0.23 |
| | | | | | | | | |
| 1 | Nav3b-1 | 0.23 | 1.1 | 151 | 9 | 0.491 | 0.04 | 0.41 |
| 2 | Nav3b-2 | 0.23 | 1.1 | 246 | 30 | 0.283 | 0.06 | 0.42 |
| 3 | Nav3b-3 | 0.30 | 1.3 | 330 | 21 | 0.115 | 0.03 | 0.18 |
| 4 | Nav3b-4 | 0.27 | 1.2 | 346 | 20 | 0.144 | 0.04 | 0.17 |
| 5 | Nav3b-5 | 0.30 | 1.4 | 347 | 23 | 0.108 | 0.03 | 0.18 |
| 6 | Nav3b-6 | 0.42 | 1.9 | 280 | 14 | 0.243 | 0.03 | 0.28 |
| 7 | Nav3b-7 | 0.70 | 3.2 | 360 | 14 | 0.082 | 0.02 | 0.13 |
| 8 | Nav3b-8 | 0.73 | 3.3 | 119 | 11 | 0.594 | 0.03 | 0.55 |
| 9 | Nav3b-9 | 0.31 | 1.4 | 100 | 8 | 0.631 | 0.03 | 0.57 |
| 10 | Nav3b-10 | 0.14 | 0.6 | 43.6 | 2.8 | 0.727 | 0.03 | 0.38 |
| 11 | Nav3b-11 | 0.53 | 2.4 | 165 | 10 | 0.478 | 0.03 | 0.47 |
| 12 | Nav3b-12 | 0.38 | 1.7 | 95 | 7 | 0.640 | 0.03 | 0.60 |
| 13 | Nav3b-13 | 0.26 | 1.2 | 273 | 20 | 0.220 | 0.03 | 0.38 |
| 14 | Nav3b-14 | 0.63 | 2.9 | 191 | 9 | 0.406 | 0.02 | 0.46 |
| 15 | Nav3b-15 | 0.29 | 1.3 | 306 | 19 | 0.217 | 0.04 | 0.31 |
| 16 | Nav3b-16 | 0.24 | 1.1 | 205 | 11 | 0.409 | 0.04 | 0.41 |
| 17 | Nav3b-17 | 0.27 | 1.2 | 321 | 19 | 0.160 | 0.03 | 0.17 |
| 18 | Nav3b-18 | 0.27 | 1.2 | 255 | 23 | 0.249 | 0.06 | 0.26 |
| 19 | Nav3b-19 | 0.32 | 1.5 | 135 | 19 | 0.483 | 0.05 | 0.54 |
| 20 | Nav3b-20 | 0.36 | 1.6 | 130 | 5 | 0.573 | 0.03 | 0.44 |
| 21 | Nav3b-22 | 0.08 | 0.4 | 17.1 | 2.6 | 0.774 | 0.03 | 0.54 |
| 22 | Nav3b-23 | 0.46 | 2.1 | 125 | 16 | 0.540 | 0.05 | 0.59 |
| 23 | Nav3b-24 | 0.48 | 2.2 | 263 | 15 | 0.283 | 0.04 | 0.26 |

| # | Sample | U ppm | 238 mV | $^{238}U/^{206}Pb$ | 2s | $^{207}Pb/^{206}Pb$ | 2s | rho |
|---|---|---|---|---|---|---|---|---|
| 24 | Nav3b-26 | 1.02 | 4.6 | 363 | 12 | 0.075 | 0.01 | 0.16 |
| 25 | Nav3b-27 | 0.09 | 0.4 | 4.49 | 0.51 | 0.809 | 0.02 | 0.55 |
| 26 | Nav3b-28 | 0.33 | 1.5 | 82 | 11 | 0.652 | 0.04 | 0.60 |
| | | | | | | | | |
| 1 | H2-1 | 0.19 | 0.8 | 24.7 | 3.4 | 0.762 | 0.03 | 0.64 |
| 2 | H2-2 | 0.13 | 0.5 | 27.7 | 3.3 | 0.796 | 0.03 | 0.61 |
| 3 | H2-3 | 0.22 | 0.9 | 20.8 | 1.6 | 0.788 | 0.02 | 0.61 |
| 4 | H2-4 | 0.16 | 0.6 | 34.6 | 3.6 | 0.729 | 0.03 | 0.55 |
| 5 | H2-5 | 0.20 | 0.8 | 2.71 | 0.58 | 0.813 | 0.02 | 0.70 |
| 6 | H2-6 | 0.19 | 0.8 | 81 | 6 | 0.646 | 0.03 | 0.61 |
| 7 | H2-7 | 0.19 | 0.8 | 3.53 | 0.54 | 0.803 | 0.02 | 0.68 |
| 8 | H2-8 | 0.11 | 0.5 | 5.4 | 0.6 | 0.806 | 0.02 | 0.51 |
| 9 | H2-9 | 0.11 | 0.4 | 3.99 | 0.67 | 0.813 | 0.02 | 0.64 |
| 10 | H2-10 | 0.10 | 0.4 | 4.58 | 0.46 | 0.810 | 0.02 | 0.25 |
| 11 | H2-11 | 0.04 | 0.1 | 17.4 | 7.6 | 0.801 | 0.07 | 0.23 |
| 12 | H2-12 | 0.10 | 0.4 | 6.2 | 0.6 | 0.802 | 0.02 | 0.51 |
| 13 | H2-13 | 0.17 | 0.7 | 21.7 | 2.1 | 0.785 | 0.02 | 0.66 |
| 14 | H2-15 | 0.21 | 0.9 | 17.4 | 5.1 | 0.794 | 0.02 | 0.68 |
| 15 | H2-16 | 0.04 | 0.2 | 10.8 | 3.2 | 0.788 | 0.06 | 0.16 |
| 16 | H2-18 | 0.07 | 0.3 | 21.6 | 3.3 | 0.777 | 0.04 | 0.44 |
| 17 | H2-20 | 0.12 | 0.5 | 10.4 | 1.2 | 0.812 | 0.02 | 0.60 |
| 18 | H2-21 | 0.07 | 0.3 | 106 | 15 | 0.612 | 0.07 | 0.28 |
| 19 | H2-22 | 0.05 | 0.2 | 1.66 | 0.66 | 0.819 | 0.03 | 0.60 |
| 20 | H2-23 | 0.14 | 0.6 | 77 | 6 | 0.732 | 0.05 | 0.44 |
| 21 | H2-24 | 0.11 | 0.5 | 4.29 | 0.30 | 0.813 | 0.02 | 0.45 |
| 22 | H2-25 | 0.12 | 0.5 | 2.25 | 0.24 | 0.818 | 0.02 | 0.55 |
| 23 | H2-26 | 0.17 | 0.7 | 28.8 | 2.3 | 0.803 | 0.03 | 0.55 |
| 24 | H2-27 | 0.06 | 0.3 | 80 | 26 | 0.700 | 0.10 | 0.56 |
| 25 | H2-28 | 0.09 | 0.4 | 21.5 | 2.2 | 0.775 | 0.03 | 0.17 |
| | | | | | | | | |
| 1 | H3-1 | 0.41 | 1.7 | 2.16 | 0.06 | 0.828 | 0.02 | 0.44 |
| 2 | H3-2 | 0.42 | 1.7 | 12.7 | 0.4 | 0.795 | 0.02 | 0.47 |
| 3 | H3-3 | 0.64 | 2.7 | 78 | 3 | 0.724 | 0.03 | 0.51 |
| 4 | H3-4 | 0.27 | 1.1 | 6.4 | 0.3 | 0.799 | 0.02 | 0.38 |
| 5 | H3-5 | 0.52 | 2.2 | 2.53 | 0.23 | 0.838 | 0.02 | 0.64 |
| 6 | H3-6 | 0.27 | 1.1 | 2.31 | 0.09 | 0.838 | 0.02 | 0.24 |
| 7 | H3-7 | 0.67 | 2.8 | 25.6 | 0.9 | 0.777 | 0.02 | 0.64 |
| 8 | H3-8 | 0.48 | 2.0 | 74 | 2 | 0.725 | 0.02 | 0.43 |
| 9 | H3-9 | 0.22 | 0.9 | 4.13 | 0.21 | 0.849 | 0.02 | 0.49 |
| 10 | H3-10 | 0.74 | 3.1 | 45.2 | 1.3 | 0.751 | 0.02 | 0.56 |
| 11 | H3-11 | 0.44 | 1.8 | 21.1 | 1.5 | 0.793 | 0.02 | 0.66 |
| 12 | H3-12 | 0.75 | 3.1 | 58 | 2 | 0.756 | 0.02 | 0.59 |
| 13 | H3-13 | 0.50 | 2.1 | 85 | 8 | 0.682 | 0.03 | 0.64 |
| 14 | H3-14 | 0.41 | 1.7 | 23.3 | 1.4 | 0.787 | 0.02 | 0.67 |
| 15 | H3-15 | 0.46 | 1.9 | 57 | 10 | 0.683 | 0.03 | 0.66 |
| 16 | H3-16 | 0.92 | 3.9 | 18.6 | 2.3 | 0.810 | 0.02 | 0.68 |
| 17 | H3-17 | 0.72 | 3.0 | 138 | 15 | 0.607 | 0.02 | 0.62 |
| 18 | H3-18 | 0.77 | 3.2 | 218 | 13 | 0.515 | 0.03 | 0.48 |
| 19 | H3-22 | 0.52 | 2.2 | 5.2 | 0.3 | 0.834 | 0.02 | 0.68 |
| 20 | H3-23 | 0.48 | 2.0 | 24.3 | 0.7 | 0.780 | 0.02 | 0.44 |

| # | Sample | U ppm | 238 mV | $^{238}U/^{206}Pb$ | 2s | $^{207}Pb/^{206}Pb$ | 2s | rho |
|---|---|---|---|---|---|---|---|---|
| 21 | H3-24 | 1.02 | 4.4 | 70 | 2 | 0.755 | 0.02 | 0.59 |
| 22 | H3-25 | 1.73 | 7.4 | 382 | 17 | 0.252 | 0.02 | 0.41 |
| 23 | H3-26 | 2.09 | 8.9 | 271 | 29 | 0.392 | 0.05 | 0.45 |
| 24 | H3-27 | 0.37 | 1.6 | 27.3 | 2.0 | 0.800 | 0.02 | 0.64 |
| 25 | H3-28 | 0.52 | 2.2 | 23.9 | 2.5 | 0.806 | 0.02 | 0.69 |
| | | | | | | | | |
| 1 | H4-1 | 0.34 | 1.3 | 90 | 4 | 0.689 | 0.03 | 0.44 |
| 2 | H4-2 | 0.70 | 2.8 | 76 | 5 | 0.667 | 0.02 | 0.62 |
| 3 | H4-3 | 0.57 | 2.3 | 62 | 3 | 0.710 | 0.02 | 0.44 |
| 4 | H4-4 | 0.45 | 1.8 | 54 | 3 | 0.704 | 0.02 | 0.59 |
| 5 | H4-5 | 0.63 | 2.5 | 358 | 19 | 0.281 | 0.03 | 0.33 |
| 6 | H4-6 | 0.73 | 2.9 | 141 | 8 | 0.610 | 0.02 | 0.59 |
| 7 | H4-7 | 0.69 | 2.8 | 44.0 | 1.5 | 0.728 | 0.02 | 0.37 |
| 8 | H4-9 | 0.40 | 1.6 | 73 | 3 | 0.697 | 0.03 | 0.50 |
| 9 | H4-10 | 0.50 | 2.0 | 273 | 11 | 0.426 | 0.03 | 0.34 |
| 10 | H4-11 | 0.79 | 3.2 | 127 | 5 | 0.612 | 0.02 | 0.54 |
| 11 | H4-12 | 0.48 | 1.9 | 225 | 10 | 0.464 | 0.02 | 0.51 |
| 12 | H4-13 | 0.64 | 2.6 | 133 | 17 | 0.614 | 0.03 | 0.63 |
| 13 | H4-14 | 0.20 | 0.8 | 12.8 | 1.7 | 0.790 | 0.02 | 0.65 |
| 14 | H4-15 | 0.75 | 3.0 | 40.8 | 3.3 | 0.747 | 0.02 | 0.66 |
| 15 | H4-16 | 0.19 | 0.8 | 4.85 | 0.28 | 0.807 | 0.02 | 0.16 |
| 16 | H4-17 | 0.12 | 0.5 | 13.5 | 0.9 | 0.794 | 0.02 | 0.17 |
| 17 | H4-18 | 0.13 | 0.5 | 11.5 | 1.6 | 0.754 | 0.02 | 0.15 |
| 18 | H4-19 | 0.55 | 2.2 | 103 | 5 | 0.635 | 0.03 | 0.55 |
| 19 | H4-20 | 0.16 | 0.7 | 63 | 15 | 0.658 | 0.04 | 0.69 |
| 20 | H4-21 | 0.48 | 2.0 | 40.9 | 3.7 | 0.743 | 0.02 | 0.67 |
| 21 | H4-22 | 0.21 | 0.8 | 10.6 | 0.7 | 0.785 | 0.02 | 0.46 |
| 22 | H4-23 | 0.75 | 3.0 | 34.2 | 1.3 | 0.758 | 0.02 | 0.56 |
| 23 | H4-24 | 0.26 | 1.0 | 14.0 | 1.3 | 0.770 | 0.02 | 0.63 |
| 24 | H4-25 | 0.58 | 2.4 | 8.5 | 1.4 | 0.802 | 0.02 | 0.70 |
| 25 | H4-26 | 0.45 | 1.8 | 170 | 13 | 0.519 | 0.04 | 0.54 |
| 26 | H4-27 | 0.56 | 2.3 | 82 | 3 | 0.681 | 0.02 | 0.39 |
| 27 | H4-28 | 0.62 | 2.5 | 9.0 | 0.4 | 0.796 | 0.02 | 0.60 |
| 28 | H4-2-1 | 0.37 | 1.7 | 10.7 | 3.5 | 0.765 | 0.02 | 0.70 |
| 29 | H4-2-2 | 0.42 | 2.0 | 97 | 8 | 0.651 | 0.03 | 0.16 |
| 30 | H4-2-3 | 0.29 | 1.4 | 13.1 | 0.5 | 0.795 | 0.02 | 0.35 |
| 31 | H4-2-4 | 0.31 | 1.4 | 52 | 2 | 0.734 | 0.02 | 0.41 |
| 32 | H4-2-5 | 0.37 | 1.8 | 50 | 2 | 0.704 | 0.02 | 0.35 |
| 33 | H4-2-6 | 0.53 | 2.5 | 157 | 6 | 0.540 | 0.02 | 0.37 |
| 34 | H4-2-7 | 0.36 | 1.7 | 17.6 | 1.5 | 0.774 | 0.02 | 0.67 |
| 35 | H4-2-8 | 0.10 | 0.5 | 5.1 | 0.4 | 0.798 | 0.02 | 0.16 |
| 36 | H4-2-9 | 0.68 | 3.2 | 65 | 8 | 0.694 | 0.02 | 0.64 |
| 37 | H4-2-10 | 0.56 | 2.6 | 123 | 5 | 0.621 | 0.02 | 0.59 |
| 38 | H4-2-11 | 0.60 | 2.8 | 145 | 5 | 0.570 | 0.02 | 0.50 |
| 39 | H4-2-12 | 0.28 | 1.3 | 11.7 | 1.9 | 0.771 | 0.02 | 0.68 |
| 40 | H4-2-13 | 0.31 | 1.4 | 200 | 12 | 0.497 | 0.03 | 0.46 |
| 41 | H4-2-14 | 0.49 | 2.3 | 39.8 | 1.3 | 0.734 | 0.02 | 0.53 |
| | | | | | | | | |
| 1 | H5-1 | 0.34 | 1.4 | 14.3 | 0.5 | 0.783 | 0.02 | 0.25 |
| 2 | H5-2 | 0.52 | 2.1 | 125 | 6 | 0.647 | 0.03 | 0.52 |

| # | Sample | U ppm | 238 mV | $^{238}U/^{206}Pb$ | 2s | $^{207}Pb/^{206}Pb$ | 2s | rho |
|---|---|---|---|---|---|---|---|---|
| 3 | H5-3 | 0.43 | 1.7 | 43.1 | 1.6 | 0.720 | 0.02 | 0.33 |
| 4 | H5-4 | 0.53 | 2.1 | 83 | 3 | 0.696 | 0.03 | 0.47 |
| 5 | H5-5 | 1.30 | 5.3 | 114 | 4 | 0.646 | 0.02 | 0.62 |
| 6 | H5-6 | 0.58 | 2.4 | 10.7 | 1.2 | 0.790 | 0.02 | 0.69 |
| 7 | H5-7 | 0.23 | 0.9 | 20.8 | 1.7 | 0.770 | 0.02 | 0.53 |
| 8 | H5-8 | 0.16 | 0.7 | 6.4 | 0.5 | 0.806 | 0.02 | 0.61 |
| 9 | H5-9 | 0.11 | 0.4 | 32.6 | 2.9 | 0.719 | 0.03 | 0.41 |
| 10 | H5-10 | 0.18 | 0.7 | 10.9 | 0.6 | 0.795 | 0.02 | 0.46 |
| 11 | H5-11 | 0.20 | 0.8 | 49.4 | 2.4 | 0.725 | 0.03 | 0.37 |
| 12 | H5-12 | 0.31 | 1.3 | 18.1 | 0.7 | 0.768 | 0.02 | 0.33 |
| 13 | H5-13 | 0.59 | 2.4 | 51 | 2 | 0.745 | 0.02 | 0.38 |
| 14 | H5-14 | 0.84 | 3.4 | 249 | 9 | 0.401 | 0.02 | 0.39 |
| 15 | H5-15 | 0.71 | 2.9 | 145 | 4 | 0.608 | 0.02 | 0.48 |
| 16 | H5-16 | 0.16 | 0.6 | 27.7 | 2.0 | 0.751 | 0.03 | 0.17 |
| 17 | H5-17 | 1.01 | 4.1 | 61 | 18 | 0.680 | 0.03 | 0.62 |
| 18 | H5-18 | 0.49 | 2.0 | 17.4 | 0.9 | 0.778 | 0.02 | 0.53 |
| 19 | H5-19 | 0.60 | 2.5 | 70 | 3 | 0.695 | 0.02 | 0.50 |
| 20 | H5-20 | 0.38 | 1.6 | 11.3 | 0.5 | 0.791 | 0.02 | 0.55 |
| 21 | H5-21 | 0.48 | 2.0 | 42.1 | 2.3 | 0.724 | 0.02 | 0.17 |
| 22 | H5-22 | 1.59 | 6.5 | 100 | 20 | 0.634 | 0.03 | 0.57 |
| 23 | H5-23 | 0.68 | 2.8 | 28.5 | 6.7 | 0.752 | 0.02 | 0.56 |
| 24 | H5-24 | 0.74 | 3.0 | 108 | 9 | 0.646 | 0.02 | 0.59 |
| 25 | H5-26 | 0.32 | 1.3 | 36.8 | 6.2 | 0.763 | 0.03 | 0.67 |
| 26 | H5-27 | 0.81 | 3.3 | 90 | 5 | 0.671 | 0.02 | 0.65 |
| 27 | H5-29 | 0.19 | 0.8 | 16.7 | 1.3 | 0.789 | 0.02 | 0.55 |
| 28 | H5-30 | 0.24 | 1.0 | 46.0 | 3.3 | 0.752 | 0.03 | 0.42 |
| 29 | H5-31 | 0.31 | 1.3 | 7.0 | 0.3 | 0.805 | 0.02 | 0.22 |
| 30 | H5-32 | 1.05 | 4.3 | 42.0 | 1.2 | 0.748 | 0.02 | 0.44 |
| 31 | H5-33 | 0.51 | 2.1 | 46.4 | 1.5 | 0.744 | 0.02 | 0.45 |
| 32 | H5-34 | 1.41 | 5.8 | 98 | 3 | 0.655 | 0.02 | 0.63 |
| 33 | H5-35 | 0.65 | 2.7 | 48.9 | 1.5 | 0.730 | 0.02 | 0.37 |
| 1 | GF1a-1 | 0.08 | 0.4 | 69 | 16 | 0.527 | 0.05 | 0.28 |
| 2 | GF1a-2 | 0.13 | 0.6 | 120 | 7 | 0.473 | 0.04 | 0.24 |
| 3 | GF1a-3 | 0.14 | 0.7 | 74 | 10 | 0.525 | 0.04 | 0.49 |
| 4 | GF1a-5 | 0.03 | 0.1 | 26.3 | 9.6 | 0.599 | 0.05 | 0.15 |
| 5 | GF1a-6 | 0.09 | 0.4 | 63 | 8 | 0.601 | 0.04 | 0.44 |
| 6 | GF1a-8 | 0.05 | 0.2 | 25.8 | 2.9 | 0.623 | 0.03 | 0.17 |
| 7 | GF1a-9 | 0.21 | 1.0 | 106 | 6 | 0.304 | 0.02 | 0.35 |
| 8 | GF1a-10 | 0.04 | 0.2 | 42.6 | 6.6 | 0.670 | 0.10 | 0.09 |
| 9 | GF1a-11 | 0.16 | 0.7 | 216 | 16 | 0.345 | 0.04 | 0.31 |
| 10 | GF1a-12 | 0.14 | 0.7 | 255 | 18 | 0.189 | 0.04 | 0.25 |
| 11 | GF1a-13 | 0.20 | 1.0 | 246 | 15 | 0.243 | 0.03 | 0.28 |
| 12 | GF1a-14 | 0.09 | 0.4 | 49.2 | 4.4 | 0.598 | 0.03 | 0.21 |
| 13 | GF1a-15 | 0.05 | 0.3 | 30.3 | 8.1 | 0.722 | 0.04 | 0.21 |
| 14 | GF1a-16 | 0.17 | 0.8 | 260 | 27 | 0.234 | 0.04 | 0.33 |
| 15 | GF1a-17 | 0.05 | 0.2 | 37.9 | 9.5 | 0.567 | 0.04 | 0.15 |
| 16 | GF1a-18 | 0.26 | 1.3 | 168 | 9 | 0.355 | 0.03 | 0.31 |
| 17 | GF1a-19 | 0.22 | 1.1 | 281 | 17 | 0.154 | 0.03 | 0.18 |
| 18 | GF1a-20 | 0.04 | 0.2 | 33.8 | 6.1 | 0.585 | 0.09 | 0.13 |

| # | Sample | U ppm | 238 mV | $^{238}U/^{206}Pb$ | 2s | $^{207}Pb/^{206}Pb$ | 2s | rho |
|---|---|---|---|---|---|---|---|---|
| 19 | GF1a-21 | 0.30 | 1.4 | 258 | 12 | 0.223 | 0.02 | 0.26 |
| 20 | GF1a-22 | 0.15 | 0.7 | 145 | 15 | 0.518 | 0.05 | 0.51 |
| 21 | GF1a-23 | 0.24 | 1.1 | 218 | 13 | 0.314 | 0.03 | 0.39 |
| 22 | GF1a-24 | 0.13 | 0.6 | 72 | 5 | 0.581 | 0.04 | 0.35 |
| 23 | GF1a-25 | 0.17 | 0.8 | 175 | 11 | 0.413 | 0.03 | 0.43 |
| 24 | GF1a-26 | 0.27 | 1.3 | 136 | 6 | 0.509 | 0.03 | 0.29 |
| 25 | GF1a-27 | 0.23 | 1.1 | 310 | 21 | 0.121 | 0.03 | 0.17 |
| 26 | GF1a-28 | 0.24 | 1.1 | 302 | 18 | 0.152 | 0.03 | 0.20 |
| | | | | | | | | |
| 1 | GF2-1 | 0.15 | 0.8 | 113 | 6 | 0.469 | 0.03 | 0.24 |
| 2 | GF2-2 | 0.12 | 0.6 | 132 | 9 | 0.411 | 0.05 | 0.16 |
| 3 | GF2-3 | 0.16 | 0.8 | 221 | 18 | 0.277 | 0.03 | 0.35 |
| 4 | GF2-4 | 0.27 | 1.4 | 190 | 10 | 0.338 | 0.03 | 0.34 |
| 5 | GF2-5 | 0.44 | 2.3 | 263 | 10 | 0.193 | 0.02 | 0.28 |
| 6 | GF2-6 | 0.27 | 1.4 | 216 | 10 | 0.279 | 0.03 | 0.24 |
| 7 | GF2-7 | 0.11 | 0.6 | 151 | 16 | 0.384 | 0.04 | 0.20 |
| 8 | GF2-8 | 0.11 | 0.6 | 94 | 8 | 0.544 | 0.03 | 0.43 |
| 9 | GF2-9 | 0.28 | 1.4 | 206 | 11 | 0.253 | 0.02 | 0.32 |
| 10 | GF2-10 | 0.40 | 2.1 | 237 | 8 | 0.248 | 0.02 | 0.34 |
| 11 | GF2-11 | 0.35 | 1.8 | 219 | 9 | 0.245 | 0.02 | 0.37 |
| 12 | GF2-12 | 0.57 | 2.9 | 275 | 11 | 0.161 | 0.02 | 0.18 |
| 13 | GF2-13 | 0.35 | 1.8 | 242 | 9 | 0.219 | 0.02 | 0.24 |
| 14 | GF2-14 | 0.65 | 3.3 | 256 | 10 | 0.200 | 0.02 | 0.29 |
| 15 | GF2-15 | 0.23 | 1.2 | 174 | 9 | 0.355 | 0.03 | 0.37 |
| 16 | GF2-16 | 0.24 | 1.2 | 195 | 12 | 0.288 | 0.03 | 0.33 |
| 17 | GF2-17 | 0.39 | 2.0 | 139 | 5 | 0.474 | 0.02 | 0.50 |
| 18 | GF2-18 | 0.19 | 0.9 | 98 | 6 | 0.556 | 0.03 | 0.39 |
| 19 | GF2-19 | 0.06 | 0.3 | 23.6 | 4.4 | 0.650 | 0.03 | 0.20 |
| 20 | GF2-20 | 0.38 | 1.9 | 66 | 5 | 0.644 | 0.02 | 0.57 |
| 21 | GF2-21 | 0.08 | 0.4 | 34.7 | 3.3 | 0.687 | 0.03 | 0.41 |
| 22 | GF2-22 | 0.15 | 0.7 | 91 | 5 | 0.630 | 0.04 | 0.59 |
| 23 | GF2-23 | 0.54 | 2.7 | 190 | 6 | 0.376 | 0.02 | 0.40 |
| 24 | GF2-24 | 0.07 | 0.3 | 58 | 6 | 0.610 | 0.04 | 0.34 |
| 25 | GF2-26 | 0.08 | 0.4 | 47.2 | 4.7 | 0.672 | 0.03 | 0.37 |
| 26 | GF2-28 | 0.02 | 0.1 | 4.31 | 2.07 | 0.851 | 0.07 | 0.23 |
| | | | | | | | | |
| 1 | GF3b-1 | 1.34 | 6.8 | 159 | 4 | 0.346 | 0.01 | 0.22 |
| 2 | GF3b-2 | 0.42 | 2.1 | 129 | 7 | 0.367 | 0.02 | 0.46 |
| 3 | GF3b-3 | 0.20 | 1.0 | 70 | 7 | 0.432 | 0.02 | 0.49 |
| 4 | GF3b-4 | 1.90 | 9.6 | 194 | 25 | 0.272 | 0.02 | 0.38 |
| 5 | GF3b-5 | 1.34 | 6.8 | 280 | 8 | 0.100 | 0.01 | 0.20 |
| 6 | GF3b-6 | 2.87 | 14.5 | 313 | 8 | 0.096 | 0.01 | 0.22 |
| 7 | GF3b-7 | 0.30 | 1.5 | 142 | 5 | 0.333 | 0.02 | 0.29 |
| 8 | GF3b-8 | 0.21 | 1.1 | 118 | 5 | 0.299 | 0.02 | 0.32 |
| 9 | GF3b-9 | 0.15 | 0.7 | 71 | 5 | 0.346 | 0.03 | 0.24 |
| 10 | GF3b-10 | 0.11 | 0.5 | 49.2 | 7.5 | 0.490 | 0.04 | 0.53 |
| 11 | GF3b-11 | 1.15 | 5.7 | 244 | 7 | 0.193 | 0.01 | 0.29 |
| 12 | GF3b-12 | 1.33 | 6.6 | 253 | 8 | 0.198 | 0.01 | 0.35 |
| 13 | GF3b-13 | 1.45 | 7.2 | 148 | 34 | 0.300 | 0.04 | 0.53 |
| 14 | GF3b-14 | 1.74 | 8.7 | 293 | 8 | 0.118 | 0.01 | 0.15 |

| # | Sample | U ppm | 238 mV | $^{238}$U/ $^{206}$Pb | 2s | $^{207}$Pb/ $^{206}$Pb | 2s | rho |
|---|---|---|---|---|---|---|---|---|
| 15 | GF3b-15 | 2.76 | 13.8 | 322 | 9 | 0.093 | 0.01 | 0.12 |
| 16 | GF3b-16 | 2.93 | 14.6 | 298 | 9 | 0.160 | 0.02 | 0.23 |
| 17 | GF3b-17 | 1.23 | 6.1 | 174 | 4 | 0.344 | 0.01 | 0.37 |
| 18 | GF3b-18 | 2.34 | 11.6 | 285 | 9 | 0.155 | 0.01 | 0.13 |
| 19 | GF3b-19 | 0.26 | 1.3 | 278 | 16 | 0.156 | 0.04 | 0.21 |
| 20 | GF3b-20 | 0.48 | 2.4 | 275 | 13 | 0.139 | 0.02 | 0.27 |
| 21 | GF3b-21 | 2.17 | 10.7 | 313 | 9 | 0.090 | 0.01 | 0.24 |
| 22 | GF3b-22 | 2.11 | 10.4 | 279 | 8 | 0.147 | 0.01 | 0.25 |
| 23 | GF3b-23 | 0.77 | 3.8 | 271 | 11 | 0.212 | 0.03 | 0.25 |
| 24 | GF3b-24 | 1.14 | 5.6 | 269 | 9 | 0.217 | 0.02 | 0.26 |
| 25 | GF3b-25 | 0.21 | 1.0 | 91 | 17 | 0.548 | 0.06 | 0.60 |
| 26 | GF3b-26 | 0.17 | 0.8 | 116 | 9 | 0.574 | 0.04 | 0.53 |
| 27 | GF3b-27 | 4.27 | 21.0 | 181 | 15 | 0.319 | 0.02 | 0.45 |
| 28 | GF3b-28 | 1.05 | 5.1 | 223 | 10 | 0.237 | 0.02 | 0.31 |
| 1 | GFS1-1 | 1.02 | 3.2 | 232 | 22 | 0.427 | 0.05 | 0.40 |
| 2 | GFS1-2 | 0.49 | 1.6 | 10.8 | 0.7 | 0.761 | 0.02 | 0.61 |
| 3 | GFS1-3 | 0.37 | 1.2 | 274 | 24 | 0.321 | 0.05 | 0.40 |
| 4 | GFS1-4 | 0.59 | 1.9 | 284 | 18 | 0.358 | 0.04 | 0.36 |
| 5 | GFS1-5 | 0.54 | 1.7 | 68 | 3 | 0.695 | 0.02 | 0.56 |
| 6 | GFS1-6 | 0.44 | 1.4 | 34.7 | 11.6 | 0.717 | 0.04 | 0.70 |
| 7 | GFS1-7 | 0.44 | 1.4 | 4.05 | 0.21 | 0.800 | 0.02 | 0.61 |
| 8 | GFS1-8 | 0.41 | 1.3 | 2.94 | 0.22 | 0.801 | 0.02 | 0.63 |
| 9 | GFS1-9 | 1.13 | 3.7 | 173 | 32 | 0.495 | 0.07 | 0.52 |
| 10 | GFS1-10 | 0.19 | 0.6 | 76 | 14 | 0.703 | 0.06 | 0.73 |
| 11 | GFS1-11 | 1.26 | 4.1 | 210 | 41 | 0.413 | 0.06 | 0.43 |
| 12 | GFS1-12 | 0.87 | 2.8 | 83 | 11 | 0.669 | 0.04 | 0.60 |
| 13 | GFS1-13 | 1.16 | 3.8 | 79 | 7 | 0.683 | 0.02 | 0.58 |
| 14 | GFS1-14 | 0.50 | 1.6 | 106 | 10 | 0.633 | 0.03 | 0.57 |
| 15 | GFS1-15 | 0.33 | 1.1 | 173 | 11 | 0.488 | 0.03 | 0.53 |
| 16 | GFS1-16 | 0.24 | 0.8 | 0.96 | 0.07 | 0.803 | 0.02 | 0.47 |
| 17 | GFS1-17 | 0.29 | 1.0 | 35.4 | 2.3 | 0.767 | 0.03 | 0.53 |
| 18 | GFS1-18 | 0.45 | 1.5 | 18.4 | 0.8 | 0.776 | 0.02 | 0.50 |
| 19 | GFS1-19 | 0.19 | 0.6 | 0.83 | 0.04 | 0.810 | 0.02 | 0.46 |
| 20 | GFS1-20 | 0.34 | 1.2 | 104 | 4 | 0.639 | 0.03 | 0.45 |
| 21 | GFS1-21 | 0.37 | 1.3 | 99 | 5 | 0.675 | 0.04 | 0.43 |
| 22 | GFS1-22 | 0.34 | 1.2 | 59 | 5 | 0.710 | 0.03 | 0.60 |
| 23 | GFS1-23 | 0.19 | 0.6 | 31.4 | 3.9 | 0.714 | 0.04 | 0.56 |
| 24 | GFS1-24 | 0.72 | 2.5 | 19.0 | 0.7 | 0.765 | 0.02 | 0.52 |
| 25 | GFS1-25 | 1.21 | 4.2 | 6.5 | 0.3 | 0.803 | 0.02 | 0.39 |
| 26 | GFS1-26 | 1.21 | 4.2 | 22.4 | 2.2 | 0.780 | 0.02 | 0.64 |
| 27 | GFS1-27 | 0.68 | 2.3 | 10.6 | 0.5 | 0.791 | 0.02 | 0.39 |
| 28 | GFS1-28 | 0.12 | 0.4 | 4.97 | 0.93 | 0.783 | 0.02 | 0.56 |
| 29 | GFS1-29 | 0.66 | 2.3 | 41.8 | 7.4 | 0.709 | 0.02 | 0.57 |
| 30 | GFS1-30 | 0.42 | 1.5 | 14.9 | 0.9 | 0.788 | 0.02 | 0.57 |
| 31 | GFS1-31 | 0.42 | 1.5 | 2.82 | 0.21 | 0.807 | 0.02 | 0.64 |
| 32 | GFS1-32 | 0.30 | 1.0 | 1.70 | 0.42 | 0.810 | 0.02 | 0.67 |
| 33 | GFS1-33 | 0.34 | 1.2 | 46.8 | 3.3 | 0.738 | 0.03 | 0.35 |
| 34 | GFS1-34 | 1.10 | 3.8 | 84 | 7 | 0.654 | 0.03 | 0.47 |
| 35 | GFS1-35 | 0.30 | 1.0 | 34.3 | 2.7 | 0.736 | 0.03 | 0.71 |

| # | Sample | U ppm | 238 mV | $^{238}U/^{206}Pb$ | 2s | $^{207}Pb/^{206}Pb$ | 2s | rho |
|---|---|---|---|---|---|---|---|---|
| 36 | GFS1-36 | 0.44 | 1.5 | 152 | 9 | 0.556 | 0.04 | 0.39 |
| 37 | GFS1-37 | 0.33 | 1.1 | 94 | 7 | 0.625 | 0.03 | 0.42 |
| 38 | GFS1-38 | 0.30 | 1.1 | 213 | 20 | 0.437 | 0.06 | 0.13 |
| 39 | GFS1-39 | 0.30 | 1.1 | 130 | 9 | 0.621 | 0.05 | 0.47 |
| 40 | GFS1-40 | 0.22 | 0.8 | 76 | 4 | 0.650 | 0.05 | 0.52 |
| 41 | GFS1-41 | 0.08 | 0.3 | 79 | 9 | 0.639 | 0.08 | 0.20 |
| 42 | GFS1-42 | 0.22 | 0.8 | 43.3 | 4.1 | 0.714 | 0.04 | 0.57 |
| 43 | GFS1-43 | 0.21 | 0.7 | 141 | 13 | 0.549 | 0.05 | 0.52 |
| 44 | GFS1-44 | 0.10 | 0.3 | 90 | 10 | 0.608 | 0.06 | 0.23 |
| 45 | GFS1-45 | 0.10 | 0.4 | 99 | 17 | 0.667 | 0.05 | 0.27 |
| 46 | GFS1-46 | 0.42 | 1.5 | 286 | 15 | 0.367 | 0.05 | 0.34 |
| 47 | GFS1-47 | 0.20 | 0.7 | 197 | 16 | 0.492 | 0.06 | 0.43 |
| 48 | GFS1-48 | 0.76 | 2.7 | 384 | 25 | 0.194 | 0.03 | 0.29 |
| 1 | GFS2-1 | 0.31 | 1.0 | 4.50 | 0.38 | 0.801 | 0.02 | 0.62 |
| 2 | GFS2-2 | 0.41 | 1.4 | 215 | 23 | 0.363 | 0.06 | 0.38 |
| 3 | GFS2-3 | 0.19 | 0.7 | 254 | 20 | 0.264 | 0.04 | 0.31 |
| 4 | GFS2-4 | 1.22 | 4.3 | 375 | 15 | 0.082 | 0.01 | 0.10 |
| 5 | GFS2-5 | 0.96 | 3.4 | 395 | 24 | 0.074 | 0.02 | 0.21 |
| 6 | GFS2-6 | 0.39 | 1.4 | 271 | 13 | 0.230 | 0.03 | 0.31 |
| 7 | GFS2-7 | 0.24 | 0.9 | 245 | 17 | 0.263 | 0.06 | 0.15 |
| 8 | GFS2-8 | 0.14 | 0.5 | 215 | 34 | 0.306 | 0.06 | 0.53 |
| 9 | GFS2-9 | 0.38 | 1.5 | 6.2 | 1.5 | 0.786 | 0.02 | 0.69 |
| 10 | GFS2-10 | 0.06 | 0.2 | 6.5 | 8.9 | 0.687 | 0.09 | 0.69 |
| 11 | GFS2-11 | 0.15 | 0.6 | 233 | 23 | 0.275 | 0.05 | 0.22 |
| 12 | GFS2-12 | 0.11 | 0.4 | 127 | 12 | 0.594 | 0.06 | 0.27 |
| 13 | GFS2-13 | 0.32 | 1.3 | 282 | 21 | 0.241 | 0.05 | 0.36 |
| 14 | GFS2-14 | 0.16 | 0.6 | 196 | 15 | 0.436 | 0.08 | 0.42 |
| 15 | GFS2-15 | 0.23 | 0.9 | 68 | 4 | 0.648 | 0.04 | 0.34 |
| 16 | GFS2-16 | 0.21 | 0.8 | 14.0 | 2.1 | 0.773 | 0.02 | 0.63 |
| 17 | GFS2-17 | 0.06 | 0.2 | 17.0 | 8.7 | 0.723 | 0.05 | 0.67 |
| 18 | GFS2-18 | 0.38 | 1.5 | 265 | 11 | 0.216 | 0.04 | 0.16 |
| 19 | GFS2-19 | 0.12 | 0.5 | 218 | 38 | 0.259 | 0.05 | 0.26 |
| 20 | GFS2-20 | 0.26 | 1.1 | 106 | 13 | 0.534 | 0.04 | 0.54 |
| 21 | GFS2-21 | 0.28 | 1.1 | 328 | 22 | 0.175 | 0.06 | 0.17 |
| 22 | GFS2-22 | 0.31 | 1.3 | 294 | 22 | 0.094 | 0.04 | 0.21 |
| 23 | GFS2-23 | 0.21 | 0.8 | 269 | 20 | 0.233 | 0.04 | 0.27 |
| 24 | GFS2-24 | 0.17 | 0.7 | 138 | 9 | 0.563 | 0.05 | 0.25 |
| 25 | GFS2-25 | 0.05 | 0.2 | 137 | 24 | 0.450 | 0.11 | 0.26 |
| 26 | GFS2-26 | 0.31 | 1.2 | 304 | 25 | 0.137 | 0.02 | 0.29 |
| 27 | GFS2-27 | 0.26 | 1.0 | 246 | 22 | 0.238 | 0.04 | 0.28 |
| 28 | GFS2-28 | 0.35 | 1.4 | 207 | 13 | 0.360 | 0.03 | 0.37 |
| 29 | GFS2-29 | 0.11 | 0.5 | 98 | 10 | 0.572 | 0.04 | 0.31 |
| 30 | GFS2-30 | 0.23 | 0.9 | 230 | 17 | 0.400 | 0.06 | 0.50 |
| 31 | GFS2-31 | 0.27 | 1.1 | 203 | 22 | 0.396 | 0.05 | 0.46 |
| 32 | GFS2-32 | 0.13 | 0.5 | 94 | 9 | 0.524 | 0.04 | 0.31 |
| 33 | GFS2-33 | 0.29 | 1.2 | 48.4 | 3.7 | 0.737 | 0.02 | 0.67 |
| 34 | GFS2-34 | 0.34 | 1.4 | 24.8 | 8.9 | 0.729 | 0.05 | 0.69 |
| 35 | GFS2-35 | 0.19 | 0.8 | 197 | 22 | 0.438 | 0.05 | 0.38 |
| 36 | GFS2-36 | 0.45 | 1.8 | 294 | 18 | 0.166 | 0.03 | 0.31 |

| # | Sample | U ppm | 238 mV | $^{238}U/^{206}Pb$ | 2s | $^{207}Pb/^{206}Pb$ | 2s | rho |
|---|---|---|---|---|---|---|---|---|
| 37 | GFS2-37 | 0.24 | 1.0 | 193 | 10 | 0.396 | 0.04 | 0.28 |
| 38 | GFS2-38 | 0.09 | 0.4 | 6.0 | 1.0 | 0.824 | 0.03 | 0.51 |
| 39 | GFS2-39 | 0.36 | 1.5 | 274 | 18 | 0.202 | 0.03 | 0.26 |
| 40 | GFS2-40 | 0.18 | 0.7 | 1.55 | 0.39 | 0.784 | 0.02 | 0.69 |
| 41 | GFS2-41 | 0.33 | 1.3 | 204 | 10 | 0.358 | 0.04 | 0.15 |
| 42 | GFS2-42 | 0.23 | 1.0 | 253 | 20 | 0.348 | 0.08 | 0.34 |
| 43 | GFS2-43 | 0.14 | 0.6 | 116 | 18 | 0.541 | 0.08 | 0.79 |
| 44 | GFS2-44 | 0.26 | 1.1 | 322 | 27 | 0.121 | 0.05 | 0.22 |
| 45 | GFS2-45 | 0.31 | 1.3 | 306 | 28 | 0.159 | 0.04 | 0.29 |
| 46 | GFS2-46 | 0.33 | 1.3 | 290 | 22 | 0.229 | 0.04 | 0.25 |
| 47 | GFS2-47 | 0.20 | 0.8 | 286 | 26 | 0.200 | 0.05 | 0.25 |
| 48 | GFS2-48 | 0.17 | 0.7 | 235 | 19 | 0.277 | 0.07 | 0.22 |
| 1 | GFS2c-3 | 0.76 | 2.3 | 204 | 72 | 0.314 | 0.05 | 0.46 |
| 2 | GFS2c-4 | 0.21 | 0.6 | 24.8 | 5.9 | 0.731 | 0.04 | 0.68 |
| 3 | GFS2c-5 | 0.56 | 1.7 | 32.5 | 13.2 | 0.677 | 0.06 | 0.66 |
| 4 | GFS2c-8 | 0.44 | 1.3 | 125 | 18 | 0.595 | 0.05 | 0.52 |
| 5 | GFS2c-10 | 0.50 | 1.5 | 29.6 | 7.7 | 0.726 | 0.06 | 0.55 |
| 6 | GFS2c-11 | 0.90 | 2.7 | 87 | 34 | 0.602 | 0.06 | 0.60 |
| 7 | GFS2c-14 | 0.68 | 2.1 | 129 | 11 | 0.548 | 0.03 | 0.49 |
| 8 | GFS2c-18 | 0.37 | 1.1 | 131 | 15 | 0.556 | 0.08 | 0.46 |
| 9 | GFS2c-19 | 0.84 | 2.6 | 283 | 10 | 0.220 | 0.03 | 0.28 |
| 10 | GFS2c-20 | 0.78 | 2.4 | 265 | 13 | 0.253 | 0.03 | 0.39 |
| 11 | GFS2c-21 | 0.43 | 1.3 | 154 | 11 | 0.529 | 0.04 | 0.68 |
| 12 | GFS2c-22 | 0.19 | 0.6 | 61 | 3 | 0.693 | 0.05 | 0.38 |
| 13 | GFS2c-23 | 0.77 | 2.4 | 223 | 17 | 0.296 | 0.02 | 0.53 |
| 14 | GFS2c-25 | 0.05 | 0.2 | 30.2 | 7.3 | 0.695 | 0.07 | 0.21 |
| 15 | GFS2c-26 | 0.05 | 0.1 | 17.6 | 8.7 | 0.803 | 0.06 | 0.36 |
| 16 | GFS2c-28 | 0.22 | 0.7 | 68 | 12 | 0.643 | 0.04 | 0.32 |
| 17 | GFS2c-29 | 0.42 | 1.3 | 209 | 18 | 0.353 | 0.04 | 0.42 |
| 18 | GFS2c-32 | 0.08 | 0.2 | 53 | 9 | 0.703 | 0.08 | 0.39 |
| 19 | GFS2c-33 | 0.09 | 0.3 | 57 | 16 | 0.640 | 0.10 | 0.39 |
| 20 | GFS2c-34 | 0.12 | 0.4 | 52 | 10 | 0.796 | 0.08 | 0.36 |
| 21 | GFS2c-37 | 0.18 | 0.6 | 73 | 9 | 0.718 | 0.06 | 0.56 |
| 22 | GFS2c-40 | 0.47 | 1.5 | 303 | 20 | 0.184 | 0.04 | 0.38 |
| 23 | GFS2c-41 | 0.67 | 2.2 | 214 | 40 | 0.316 | 0.06 | 0.45 |
| 24 | GFS2c-42 | 0.07 | 0.2 | 13.5 | 5.8 | 0.751 | 0.04 | 0.58 |
| 25 | GFS2c-43 | 0.31 | 1.0 | 57 | 13 | 0.664 | 0.05 | 0.61 |
| 26 | GFS2c-44 | 0.23 | 0.7 | 231 | 22 | 0.255 | 0.06 | 0.31 |
| 27 | GFS2c-45 | 0.64 | 2.1 | 310 | 25 | 0.173 | 0.03 | 0.45 |
| 28 | GFS2c-46 | 0.52 | 1.7 | 319 | 27 | 0.161 | 0.07 | 0.36 |
| 29 | GFS2c-47 | 0.34 | 1.1 | 88 | 8 | 0.611 | 0.03 | 0.40 |
| 30 | GFS2c-48 | 0.45 | 1.5 | 225 | 26 | 0.300 | 0.05 | 0.48 |
| 1 | GFS3a-2 | 0.20 | 0.6 | 256 | 18 | 0.296 | 0.08 | 0.22 |
| 2 | GFS3a-3 | 0.16 | 0.5 | 170 | 36 | 0.359 | 0.09 | 0.50 |
| 3 | GFS3a-4 | 0.13 | 0.4 | 229 | 26 | 0.285 | 0.09 | 0.30 |
| 4 | GFS3a-5 | 0.06 | 0.2 | 103 | 32 | 0.610 | 0.11 | 0.36 |
| 5 | GFS3a-6 | 0.05 | 0.2 | 51 | 10 | 0.607 | 0.07 | 0.39 |
| 6 | GFS3a-7 | 0.32 | 1.0 | 227 | 37 | 0.262 | 0.08 | 0.29 |

| # | Sample | U ppm | 238 mV | $^{238}U/^{206}Pb$ | 2s | $^{207}Pb/^{206}Pb$ | 2s | rho |
|---|---|---|---|---|---|---|---|---|
| 7 | GFS3a-8 | 0.04 | 0.1 | 76 | 46 | 0.600 | 0.14 | 0.85 |
| 8 | GFS3a-9 | 0.10 | 0.3 | 254 | 39 | 0.270 | 0.10 | 0.30 |
| 9 | GFS3a-10 | 0.08 | 0.3 | 234 | 50 | 0.220 | 0.13 | 0.21 |
| 10 | GFS3a-11 | 0.09 | 0.3 | 243 | 41 | 0.261 | 0.09 | 0.29 |
| 11 | GFS3a-12 | 0.06 | 0.2 | 179 | 46 | 0.410 | 0.14 | 0.39 |
| 12 | GFS3a-13 | 0.06 | 0.2 | 158 | 36 | 0.560 | 0.12 | 0.50 |
| 13 | GFS3a-15 | 0.19 | 0.7 | 27.4 | 13.7 | 0.715 | 0.05 | 0.67 |
| 14 | GFS3a-17 | 0.11 | 0.4 | 187 | 26 | 0.346 | 0.07 | 0.28 |
| 15 | GFS3a-18 | 0.08 | 0.3 | 265 | 61 | 0.160 | 0.16 | 0.21 |
| 16 | GFS3a-19 | 0.06 | 0.2 | 331 | 72 | 0.370 | 0.15 | 0.21 |
| 17 | GFS3a-20 | 0.06 | 0.2 | 49.5 | 54.2 | 0.190 | 0.12 | 0.62 |
| 18 | GFS3a-21 | 0.05 | 0.2 | 13.0 | 4.4 | 0.704 | 0.05 | 0.67 |
| 19 | GFS3a-22 | 0.04 | 0.1 | 91 | 39 | 0.260 | 0.15 | 0.10 |
| 20 | GFS3a-25 | 0.05 | 0.2 | 9.1 | 4.1 | 0.540 | 0.12 | 0.69 |
| 21 | GFS3a-31 | 0.08 | 0.3 | 8.7 | 9.4 | 0.480 | 0.15 | 0.48 |
| 22 | GFS3a-34 | 0.18 | 0.6 | 237 | 22 | 0.278 | 0.08 | 0.18 |
| 23 | GFS3a-35 | 0.15 | 0.5 | 277 | 24 | 0.203 | 0.05 | 0.18 |
| 24 | GFS3a-36 | 0.58 | 1.9 | 317 | 15 | 0.139 | 0.02 | 0.24 |
| 25 | GFS3a-37 | 0.37 | 1.2 | 317 | 21 | 0.117 | 0.02 | 0.20 |
| 26 | GFS3a-38 | 0.17 | 0.6 | 255 | 43 | 0.162 | 0.06 | 0.27 |
| 27 | GFS3a-39 | 0.44 | 1.5 | 323 | 22 | 0.094 | 0.03 | 0.15 |
| 28 | GFS3a-40 | 0.33 | 1.1 | 187 | 15 | 0.407 | 0.05 | 0.30 |
| 29 | GFS3a-41 | 0.23 | 0.7 | 144 | 34 | 0.251 | 0.05 | 0.62 |
| 30 | GFS3a-42 | 0.04 | 0.1 | 116 | 41 | 0.580 | 0.16 | 0.29 |
| 31 | GFS3a-43 | 0.08 | 0.3 | 103 | 14 | 0.571 | 0.08 | 0.25 |
| | | | | | | | | |
| 1 | GFS4-1 | 0.48 | 1.97 | 243 | 12 | 0.221 | 0.04 | 0.19 |
| 2 | GFS4-2 | 0.85 | 3.49 | 255 | 7 | 0.197 | 0.03 | 0.19 |
| 3 | GFS4-3 | 0.54 | 2.24 | 110 | 9 | 0.474 | 0.03 | 0.50 |
| 4 | GFS4-4 | 0.17 | 0.68 | 120 | 10 | 0.466 | 0.05 | 0.34 |
| 5 | GFS4-5 | 0.52 | 2.16 | 228 | 13 | 0.238 | 0.04 | 0.36 |
| 6 | GFS4-6 | 0.85 | 3.50 | 257 | 12 | 0.184 | 0.03 | 0.35 |
| 7 | GFS4-7 | 0.71 | 2.92 | 283 | 11 | 0.195 | 0.01 | 0.51 |
| 8 | GFS4-8 | 0.28 | 1.17 | 189 | 12 | 0.356 | 0.04 | 0.66 |
| 9 | GFS4-9 | 0.27 | 1.14 | 180 | 7 | 0.428 | 0.05 | 0.46 |
| 10 | GFS4-10 | 0.54 | 2.23 | 245 | 12 | 0.230 | 0.03 | 0.28 |
| 11 | GFS4-11 | 0.27 | 1.11 | 224 | 10 | 0.335 | 0.06 | 0.27 |
| 12 | GFS4-12 | 0.20 | 0.84 | 218 | 16 | 0.310 | 0.11 | 0.16 |
| 13 | GFS4-13 | 0.04 | 0.17 | 105 | 41 | 0.480 | 0.21 | 0.44 |
| 14 | GFS4-14 | 0.55 | 2.29 | 296 | 16 | 0.111 | 0.03 | 0.13 |
| 15 | GFS4-15 | 0.14 | 0.60 | 215 | 29 | 0.510 | 0.12 | 0.38 |
| 16 | GFS4-16 | 0.16 | 0.65 | 247 | 34 | 0.237 | 0.09 | 0.11 |
| 17 | GFS4-17 | 0.60 | 2.50 | 309 | 13 | 0.123 | 0.03 | 0.20 |
| 18 | GFS4-18 | 0.25 | 1.07 | 286 | 29 | 0.234 | 0.08 | 0.22 |
| 19 | GFS4-19 | 0.26 | 1.10 | 271 | 22 | 0.238 | 0.08 | 0.14 |
| 20 | GFS4-20 | 0.29 | 1.23 | 267 | 14 | 0.167 | 0.04 | 0.19 |
| 21 | GFS4-21 | 0.64 | 2.72 | 219 | 14 | 0.338 | 0.02 | 0.46 |
| 22 | GFS4-22 | 0.41 | 1.72 | 239 | 14 | 0.330 | 0.05 | 0.21 |
| 23 | GFS4-23 | 0.60 | 2.55 | 331 | 12 | 0.081 | 0.03 | 0.09 |
| 24 | GFS4-24 | 0.52 | 2.22 | 279 | 15 | 0.125 | 0.04 | 0.13 |

| # | Sample | U ppm | 238 mV | $^{238}U/^{206}Pb$ | 2s | $^{207}Pb/^{206}Pb$ | 2s | rho |
|---|---|---|---|---|---|---|---|---|
| 25 | GFS4-25 | 0.45 | 1.90 | 319 | 27 | 0.215 | 0.03 | 0.35 |
| 26 | GFS4-26 | 0.36 | 1.54 | 275 | 29 | 0.213 | 0.07 | 0.26 |
| 27 | GFS4-27 | 0.06 | 0.24 | 312 | 64 | 0.360 | 0.19 | 0.09 |
| 28 | GFS4-28 | 0.55 | 2.33 | 307 | 24 | 0.119 | 0.04 | 0.11 |
| 29 | GFS4-29 | 0.50 | 2.13 | 296 | 18 | 0.136 | 0.03 | 0.16 |
| 30 | GFS4-30 | 0.38 | 1.61 | 193 | 12 | 0.396 | 0.05 | 0.32 |
| 31 | GFS4-31 | 0.48 | 2.06 | 100 | 9 | 0.560 | 0.03 | 0.55 |
| 32 | GFS4-32 | 0.63 | 2.67 | 234 | 27 | 0.229 | 0.05 | 0.30 |
| 33 | GFS4-33 | 0.05 | 0.21 | 77 | 25 | 0.440 | 0.12 | 0.57 |
| 34 | GFS4-34 | 0.91 | 3.91 | 293 | 18 | 0.167 | 0.03 | 0.15 |
| 35 | GFS4-35 | 0.58 | 2.48 | 247 | 10 | 0.256 | 0.03 | 0.20 |
| 36 | GFS4-36 | 0.43 | 1.83 | 306 | 12 | 0.160 | 0.05 | 0.09 |
| 37 | GFS4-37 | 0.57 | 2.44 | 271 | 14 | 0.157 | 0.03 | 0.27 |
| 38 | GFS4-38 | 0.40 | 1.73 | 286 | 19 | 0.149 | 0.03 | 0.07 |
| 39 | GFS4-39 | 0.29 | 1.25 | 232 | 9 | 0.168 | 0.03 | 0.28 |
| 40 | GFS4-40 | 0.73 | 3.14 | 231 | 14 | 0.243 | 0.04 | 0.20 |
| 41 | GFS4-41 | 0.36 | 1.58 | 172 | 22 | 0.326 | 0.06 | 0.46 |
| 42 | GFS4-42 | 0.61 | 2.64 | 210 | 29 | 0.215 | 0.06 | 0.32 |
| 43 | GFS4-43 | 0.29 | 1.25 | 242 | 25 | 0.226 | 0.04 | 0.48 |
| 44 | GFS4-44 | 0.89 | 3.88 | 317 | 15 | 0.116 | 0.02 | 0.37 |
| 45 | GFS4-45 | 0.80 | 3.47 | 320 | 17 | 0.089 | 0.02 | 0.09 |
| 46 | GFS4-46 | 0.44 | 1.89 | 279 | 16 | 0.095 | 0.03 | 0.13 |
| 47 | GFS4-47 | 0.51 | 2.20 | 274 | 17 | 0.157 | 0.05 | 0.26 |
| 48 | GFS4-48 | 0.12 | 0.53 | 212 | 24 | 0.220 | 0.08 | 0.31 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 | GFS5-1 | 0.08 | 0.4 | 235 | 52 | 0.450 | 0.11 | 0.46 |
| 2 | GFS5-2 | 0.48 | 2.2 | 426 | 39 | 0.118 | 0.03 | 0.31 |
| 3 | GFS5-3 | 3.60 | 16.7 | 490 | 14 | 0.058 | 0.00 | 0.38 |
| 4 | GFS5-4 | 3.61 | 16.8 | 460 | 18 | 0.092 | 0.01 | 0.30 |
| 5 | GFS5-5 | 3.65 | 17.0 | 486 | 14 | 0.051 | 0.01 | 0.17 |
| 6 | GFS5-6 | 2.91 | 13.5 | 491 | 13 | 0.067 | 0.01 | 0.24 |
| 7 | GFS5-8 | 0.70 | 3.3 | 479 | 37 | 0.116 | 0.02 | 0.24 |
| 8 | GFS5-9 | 4.70 | 21.9 | 501 | 17 | 0.058 | 0.00 | 0.41 |
| 9 | GFS5-10 | 0.29 | 1.4 | 405 | 39 | 0.207 | 0.06 | 0.11 |
| 10 | GFS5-12 | 1.06 | 5.0 | 526 | 21 | 0.084 | 0.01 | 0.35 |
| 11 | GFS5-13 | 0.24 | 1.1 | 395 | 33 | 0.178 | 0.05 | 0.22 |
| 12 | GFS5-14 | 0.43 | 2.0 | 479 | 45 | 0.188 | 0.06 | 0.20 |
| 13 | GFS5-15 | 0.43 | 2.0 | 406 | 30 | 0.187 | 0.07 | 0.15 |
| 14 | GFS5-19 | 0.24 | 1.1 | 475 | 32 | 0.142 | 0.08 | 0.12 |
| 15 | GFS5-20 | 0.25 | 1.1 | 371 | 38 | 0.219 | 0.05 | 0.15 |
| 16 | GFS5-21 | 1.19 | 5.6 | 462 | 22 | 0.096 | 0.03 | 0.12 |
| 17 | GFS5-22 | 0.69 | 3.2 | 455 | 19 | 0.099 | 0.02 | 0.16 |
| 18 | GFS5-23 | 0.70 | 3.3 | 479 | 22 | 0.130 | 0.03 | 0.21 |
| 19 | GFS5-24 | 2.63 | 12.3 | 476 | 18 | 0.058 | 0.01 | 0.28 |
| 20 | GFS5-25 | 0.30 | 1.4 | 405 | 42 | 0.123 | 0.04 | 0.26 |
| 21 | GFS5-26 | 1.12 | 5.3 | 470 | 27 | 0.090 | 0.03 | 0.18 |
| 22 | GFS5-27 | 3.08 | 14.5 | 484 | 13 | 0.061 | 0.01 | 0.25 |
| 23 | GFS5-28 | 6.86 | 32.3 | 474 | 15 | 0.055 | 0.00 | 0.36 |
| 24 | GFS5-29 | 0.63 | 3.0 | 446 | 30 | 0.098 | 0.02 | 0.25 |
| 25 | GFS5-30 | 2.78 | 13.1 | 480 | 16 | 0.054 | 0.01 | 0.21 |

| # | Sample | U ppm | 238 mV | $^{238}U/^{206}Pb$ | 2s | $^{207}Pb/^{206}Pb$ | 2s | rho |
|---|---|---|---|---|---|---|---|---|
| 26 | GFS5-31 | 3.82 | 18.0 | 477 | 18 | 0.057 | 0.01 | 0.30 |
| 27 | GFS5-32 | 2.98 | 14.0 | 476 | 18 | 0.052 | 0.01 | 0.25 |
| 28 | GFS5-33 | 2.66 | 12.5 | 479 | 17 | 0.061 | 0.01 | 0.19 |
| 29 | GFS5-34 | 1.33 | 6.3 | 475 | 17 | 0.081 | 0.03 | 0.07 |
| 30 | GFS5-35 | 1.68 | 7.9 | 501 | 18 | 0.067 | 0.01 | 0.17 |
| 31 | GFS5-36 | 0.08 | 0.4 | 311 | 72 | 0.300 | 0.18 | 0.23 |
| 32 | GFS5-37 | 0.80 | 3.8 | 495 | 30 | 0.079 | 0.02 | 0.10 |
| 33 | GFS5-38 | 1.40 | 6.6 | 464 | 16 | 0.044 | 0.01 | 0.04 |
| 34 | GFS5-39 | 0.19 | 0.9 | 452 | 33 | 0.095 | 0.10 | 0.07 |
| 35 | GFS5-40 | 0.84 | 4.0 | 536 | 32 | 0.063 | 0.04 | 0.14 |
| 36 | GFS5-41 | 4.06 | 19.2 | 499 | 13 | 0.055 | 0.01 | 0.09 |
| 37 | GFS5-42 | 4.12 | 19.5 | 497 | 15 | 0.054 | 0.01 | 0.32 |
| 38 | GFS5-43 | 4.62 | 21.9 | 477 | 13 | 0.054 | 0.01 | 0.26 |
| 39 | GFS5-44 | 4.22 | 20.0 | 477 | 17 | 0.054 | 0.00 | 0.27 |
| 40 | GFS5-45 | 2.26 | 10.7 | 453 | 19 | 0.087 | 0.01 | 0.32 |
| 41 | GFS5-46 | 2.54 | 12.0 | 454 | 18 | 0.081 | 0.01 | 0.23 |
| 42 | GFS5-47 | 2.56 | 12.1 | 445 | 15 | 0.073 | 0.01 | 0.26 |
| 43 | GFS5-48 | 4.78 | 22.6 | 371 | 11 | 0.201 | 0.01 | 0.39 |
| | | | | | | | | |
| 1 | GFS5b-1 | 2.35 | 7.7 | 465 | 16 | 0.088 | 0.02 | 0.14 |
| 2 | GFS5b-2 | 3.39 | 11.1 | 472 | 16 | 0.067 | 0.01 | 0.24 |
| 3 | GFS5b-3 | 1.54 | 5.0 | 497 | 30 | 0.078 | 0.02 | 0.15 |
| 4 | GFS5b-4 | 1.99 | 6.5 | 423 | 22 | 0.135 | 0.02 | 0.30 |
| 5 | GFS5b-5 | 0.19 | 0.6 | 347 | 127 | 0.170 | 0.12 | 0.32 |
| 6 | GFS5b-6 | 0.98 | 3.2 | 423 | 51 | 0.104 | 0.02 | 0.18 |
| 7 | GFS5b-7 | 4.14 | 13.5 | 394 | 34 | 0.170 | 0.03 | 0.37 |
| 8 | GFS5b-8 | 6.76 | 22.1 | 484 | 19 | 0.067 | 0.01 | 0.23 |
| 9 | GFS5b-9 | 3.40 | 11.1 | 460 | 15 | 0.068 | 0.01 | 0.26 |
| 10 | GFS5b-10 | 0.30 | 1.0 | 351 | 22 | 0.271 | 0.06 | 0.35 |
| 11 | GFS5b-11 | 7.24 | 23.7 | 200 | 50 | 0.365 | 0.07 | 0.53 |
| 12 | GFS5b-12 | 5.68 | 18.6 | 389 | 34 | 0.161 | 0.03 | 0.31 |
| 13 | GFS5b-13 | 4.19 | 13.7 | 433 | 30 | 0.109 | 0.02 | 0.23 |
| 14 | GFS5b-14 | 3.28 | 10.7 | 450 | 17 | 0.078 | 0.01 | 0.24 |
| 15 | GFS5b-15 | 6.59 | 21.6 | 493 | 19 | 0.053 | 0.00 | 0.17 |
| 16 | GFS5b-17 | 4.26 | 14.0 | 431 | 21 | 0.110 | 0.02 | 0.15 |
| 17 | GFS5b-18 | 0.52 | 1.7 | 365 | 29 | 0.196 | 0.04 | 0.20 |
| 18 | GFS5b-19 | 3.70 | 12.1 | 507 | 20 | 0.071 | 0.01 | 0.21 |
| 19 | GFS5b-20 | 1.74 | 5.7 | 475 | 22 | 0.073 | 0.01 | 0.23 |
| 20 | GFS5b-21 | 1.60 | 5.2 | 481 | 26 | 0.102 | 0.02 | 0.25 |
| 21 | GFS5b-22 | 3.97 | 13.0 | 502 | 24 | 0.074 | 0.01 | 0.31 |
| 22 | GFS5b-23 | 5.55 | 18.2 | 198 | 35 | 0.397 | 0.04 | 0.51 |
| 23 | GFS5b-24 | 1.93 | 6.3 | 477 | 23 | 0.078 | 0.01 | 0.27 |
| 24 | GFS5b-25 | 4.17 | 13.7 | 486 | 27 | 0.058 | 0.01 | 0.36 |
| 25 | GFS5b-26 | 2.92 | 9.6 | 444 | 23 | 0.081 | 0.01 | 0.16 |
| 26 | GFS5b-27 | 7.19 | 23.6 | 473 | 22 | 0.056 | 0.01 | 0.33 |
| 27 | GFS5b-28 | 2.71 | 8.9 | 473 | 18 | 0.058 | 0.01 | 0.16 |
| 28 | GFS5b-29 | 0.95 | 3.1 | 322 | 14 | 0.277 | 0.02 | 0.31 |
| 29 | GFS5b-30 | 1.07 | 3.5 | 433 | 19 | 0.104 | 0.03 | 0.07 |
| 30 | GFS5b-31 | 2.61 | 8.5 | 478 | 15 | 0.060 | 0.01 | 0.14 |
| 31 | GFS5b-32 | 3.28 | 10.8 | 488 | 22 | 0.071 | 0.01 | 0.24 |

| # | Sample | U ppm | 238 mV | $^{238}U/^{206}Pb$ | 2s | $^{207}Pb/^{206}Pb$ | 2s | rho |
|---|---|---|---|---|---|---|---|---|
| 32 | GFS5b-33 | 7.15 | 23.4 | 485 | 20 | 0.062 | 0.01 | 0.28 |
| 33 | GFS5b-34 | 6.41 | 21.0 | 469 | 12 | 0.050 | 0.01 | 0.20 |
| 34 | GFS5b-35 | 2.93 | 9.6 | 490 | 19 | 0.059 | 0.01 | 0.22 |
| 35 | GFS5b-36 | 1.76 | 5.7 | 452 | 21 | 0.090 | 0.02 | 0.16 |
| 36 | GFS5b-37 | 1.82 | 6.0 | 464 | 23 | 0.083 | 0.02 | 0.15 |
| 37 | GFS5b-38 | 1.88 | 6.2 | 405 | 33 | 0.168 | 0.06 | 0.14 |
| 38 | GFS5b-39 | 1.88 | 6.2 | 495 | 28 | 0.084 | 0.02 | 0.22 |
| 39 | GFS5b-40 | 0.75 | 2.5 | 416 | 20 | 0.116 | 0.02 | 0.28 |
| 40 | GFS5b-41 | 0.63 | 2.1 | 389 | 32 | 0.215 | 0.03 | 0.40 |
| 41 | GFS5b-42 | 1.66 | 5.4 | 342 | 13 | 0.221 | 0.01 | 0.34 |
| 42 | GFS5b-43 | 3.72 | 12.1 | 473 | 21 | 0.060 | 0.01 | 0.27 |
| 43 | GFS5b-44 | 2.98 | 9.7 | 444 | 19 | 0.077 | 0.02 | 0.21 |
| 44 | GFS5b-45 | 2.68 | 8.7 | 470 | 21 | 0.089 | 0.01 | 0.33 |
| 45 | GFS5b-49 | 5.70 | 18.6 | 431 | 39 | 0.113 | 0.04 | 0.19 |
| | | | | | | | | |
| 1 | GFS6-1 | 0.09 | 0.4 | 85 | 6 | 0.594 | 0.06 | 0.24 |
| 2 | GFS6-2 | 0.55 | 2.4 | 344 | 24 | 0.087 | 0.03 | 0.26 |
| 3 | GFS6-3 | 0.14 | 0.6 | 135 | 13 | 0.403 | 0.03 | 0.40 |
| 4 | GFS6-4 | 0.24 | 1.1 | 193 | 15 | 0.403 | 0.04 | 0.35 |
| 5 | GFS6-5 | 0.23 | 1.0 | 255 | 24 | 0.298 | 0.05 | 0.38 |
| 6 | GFS6-6 | 0.17 | 0.8 | 203 | 14 | 0.320 | 0.09 | 0.38 |
| 9 | GFS6-9 | 0.26 | 1.2 | 195 | 13 | 0.386 | 0.07 | 0.27 |
| 10 | GFS6-10 | 0.46 | 2.1 | 256 | 13 | 0.200 | 0.05 | 0.23 |
| 11 | GFS6-11 | 0.53 | 2.3 | 328 | 22 | 0.166 | 0.03 | 0.31 |
| 12 | GFS6-12 | 0.03 | 0.1 | 48.1 | 10.7 | 0.525 | 0.05 | 0.25 |
| 14 | GFS6-14 | 0.16 | 0.7 | 227 | 20 | 0.363 | 0.08 | 0.38 |
| 15 | GFS6-15 | 0.30 | 1.3 | 319 | 27 | 0.147 | 0.05 | 0.19 |
| 19 | GFS6-19 | 0.24 | 1.1 | 261 | 10 | 0.246 | 0.05 | 0.30 |
| 20 | GFS6-20 | 0.09 | 0.4 | 79 | 19 | 0.660 | 0.11 | 0.35 |
| 22 | GFS6-22 | 0.22 | 1.0 | 333 | 32 | 0.087 | 0.07 | 0.15 |
| 23 | GFS6-23 | 0.35 | 1.6 | 327 | 29 | 0.131 | 0.04 | 0.14 |
| 26 | GFS6-26 | 0.46 | 2.1 | 343 | 19 | 0.108 | 0.02 | 0.15 |
| 28 | GFS6-28 | 0.11 | 0.5 | 87 | 11 | 0.533 | 0.05 | 0.37 |
| 29 | GFS6-29 | 0.26 | 1.2 | 274 | 23 | 0.258 | 0.08 | 0.17 |
| 35 | GFS6-35 | 0.20 | 0.9 | 175 | 18 | 0.379 | 0.07 | 0.38 |
| 36 | GFS6-36 | 0.20 | 0.9 | 81 | 23 | 0.598 | 0.08 | 0.62 |
| 37 | GFS6-37 | 0.23 | 1.1 | 140 | 17 | 0.458 | 0.09 | 0.66 |
| 38 | GFS6-38 | 0.18 | 0.8 | 103 | 8 | 0.562 | 0.06 | 0.37 |
| 39 | GFS6-39 | 0.06 | 0.3 | 34.7 | 11.6 | 0.593 | 0.10 | 0.58 |
| 40 | GFS6-40 | 0.13 | 0.6 | 167 | 20 | 0.450 | 0.04 | 0.67 |
| 41 | GFS6-41 | 0.14 | 0.6 | 160 | 18 | 0.408 | 0.05 | 0.30 |
| 42 | GFS6-42 | 0.41 | 1.9 | 279 | 20 | 0.245 | 0.05 | 0.42 |
| 43 | GFS6-43 | 0.14 | 0.7 | 249 | 17 | 0.333 | 0.06 | 0.27 |
| 44 | GFS6-44 | 0.13 | 0.6 | 168 | 16 | 0.482 | 0.07 | 0.53 |
| 46 | GFS6-46 | 0.38 | 1.8 | 261 | 15 | 0.347 | 0.04 | 0.33 |
| 47 | GFS6-47 | 0.16 | 0.7 | 163 | 13 | 0.350 | 0.06 | 0.35 |
| 48 | GFS6-48 | 0.29 | 1.3 | 284 | 22 | 0.178 | 0.04 | 0.32 |
| | | | | | | | | |
| 1 | GFS7-1 | 0.08 | 0.4 | 127 | 16 | 0.353 | 0.04 | 0.33 |
| 2 | GFS7-2 | 0.10 | 0.5 | 166 | 15 | 0.430 | 0.10 | 0.37 |

| # | Sample | U ppm | 238 mV | $^{238}U/^{206}Pb$ | 2s | $^{207}Pb/^{206}Pb$ | 2s | rho |
|---|---|---|---|---|---|---|---|---|
| 3 | GFS7-3 | 0.04 | 0.2 | 33.5 | 10.8 | 0.513 | 0.09 | 0.31 |
| 4 | GFS7-4 | 0.03 | 0.1 | 99 | 30 | 0.440 | 0.23 | 0.25 |
| 5 | GFS7-5 | 0.13 | 0.6 | 121 | 13 | 0.354 | 0.05 | 0.17 |
| 6 | GFS7-6 | 0.23 | 1.1 | 194 | 17 | 0.260 | 0.06 | 0.20 |
| 7 | GFS7-7 | 0.81 | 3.8 | 90 | 10 | 0.449 | 0.02 | 0.43 |
| 8 | GFS7-8 | 0.11 | 0.5 | 84 | 11 | 0.392 | 0.03 | 0.52 |
| 9 | GFS7-9 | 0.16 | 0.7 | 62 | 7 | 0.579 | 0.04 | 0.46 |
| 10 | GFS7-10 | 0.63 | 3.0 | 73 | 6 | 0.590 | 0.02 | 0.53 |
| 11 | GFS7-11 | 0.10 | 0.5 | 186 | 40 | 0.317 | 0.08 | 0.38 |
| 12 | GFS7-13 | 0.10 | 0.5 | 194 | 24 | 0.300 | 0.04 | 0.47 |
| 13 | GFS7-14 | 0.04 | 0.2 | 105 | 39 | 0.410 | 0.20 | 0.24 |
| 14 | GFS7-15 | 0.07 | 0.3 | 113 | 22 | 0.458 | 0.08 | 0.44 |
| 15 | GFS7-16 | 0.05 | 0.2 | 62 | 21 | 0.511 | 0.07 | 0.35 |
| 16 | GFS7-17 | 0.09 | 0.4 | 160 | 35 | 0.344 | 0.07 | 0.46 |
| 17 | GFS7-19 | 0.07 | 0.4 | 169 | 24 | 0.285 | 0.10 | 0.25 |
| 18 | GFS7-20 | 0.09 | 0.4 | 171 | 19 | 0.300 | 0.12 | 0.18 |
| 19 | GFS7-21 | 0.10 | 0.5 | 123 | 14 | 0.494 | 0.10 | 0.16 |
| 20 | GFS7-22 | 0.09 | 0.4 | 244 | 30 | 0.249 | 0.10 | 0.18 |
| 21 | GFS7-23 | 0.03 | 0.2 | 108 | 16 | 0.560 | 0.15 | 0.47 |
| 22 | GFS7-24 | 0.14 | 0.7 | 280 | 25 | 0.064 | 0.05 | 0.13 |
| 23 | GFS7-25 | 0.07 | 0.3 | 204 | 40 | 0.290 | 0.10 | 0.33 |
| 24 | GFS7-26 | 0.10 | 0.5 | 230 | 23 | 0.215 | 0.07 | 0.29 |
| 25 | GFS7-27 | 0.26 | 1.3 | 47.3 | 3.6 | 0.574 | 0.04 | 0.58 |
| 26 | GFS7-28 | 0.07 | 0.3 | 139 | 24 | 0.477 | 0.08 | 0.61 |
| 27 | GFS7-29 | 0.15 | 0.7 | 241 | 30 | 0.272 | 0.07 | 0.44 |
| 28 | GFS7-30 | 0.19 | 0.9 | 34.5 | 7.6 | 0.552 | 0.05 | 0.54 |
| 29 | GFS7-31 | 0.03 | 0.1 | 122 | 43 | 0.270 | 0.13 | 0.17 |
| 30 | GFS7-32 | 0.10 | 0.5 | 19.6 | 7.4 | 0.546 | 0.03 | 0.67 |
| 31 | GFS7-33 | 0.08 | 0.4 | 82 | 6 | 0.450 | 0.04 | 0.57 |
| 32 | GFS7-34 | 0.04 | 0.2 | 48.8 | 12.9 | 0.499 | 0.06 | 0.16 |
| 33 | GFS7-35 | 0.08 | 0.4 | 66 | 12 | 0.497 | 0.09 | 0.32 |
| 34 | GFS7-36 | 0.09 | 0.4 | 75 | 14 | 0.451 | 0.04 | 0.43 |
| 35 | GFS7-37 | 0.03 | 0.2 | 53 | 17 | 0.492 | 0.06 | 0.23 |
| 36 | GFS7-38 | 0.20 | 1.0 | 41.6 | 8.4 | 0.516 | 0.03 | 0.64 |
| 37 | GFS7-39 | 0.04 | 0.2 | 89 | 21 | 0.445 | 0.06 | 0.50 |
| 38 | GFS7-40 | 0.17 | 0.8 | 238 | 22 | 0.163 | 0.07 | 0.31 |
| 39 | GFS7-41 | 0.06 | 0.3 | 137 | 24 | 0.510 | 0.10 | 0.30 |
| 40 | GFS7-43 | 0.07 | 0.3 | 250 | 48 | 0.210 | 0.16 | 0.16 |
| 41 | GFS7-44 | 0.09 | 0.5 | 269 | 37 | 0.135 | 0.07 | 0.25 |
| 42 | GFS7-45 | 0.05 | 0.2 | 122 | 36 | 0.574 | 0.09 | 0.16 |
| 43 | GFS7-46 | 0.04 | 0.2 | 202 | 30 | 0.260 | 0.11 | 0.32 |
| 44 | GFS7-47 | 0.11 | 0.5 | 56 | 8 | 0.536 | 0.05 | 0.53 |
| 45 | GFS7-48 | 0.12 | 0.6 | 102 | 9 | 0.445 | 0.06 | 0.31 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 | SFN1--1 | 0.10 | 0.4 | 99 | 16 | 0.610 | 0.07 | 0.52 |
| 2 | SFN1--2 | 0.90 | 4.0 | 314 | 14 | 0.198 | 0.03 | 0.22 |
| 3 | SFN1--3 | 0.81 | 3.6 | 128 | 20 | 0.553 | 0.04 | 0.52 |
| 4 | SFN1--4 | 0.34 | 1.5 | 116 | 20 | 0.513 | 0.06 | 0.57 |
| 5 | SFN1--5 | 0.80 | 3.6 | 243 | 26 | 0.335 | 0.05 | 0.39 |
| 6 | SFN1--6 | 0.83 | 3.7 | 22.7 | 1.6 | 0.735 | 0.02 | 0.64 |

| # | Sample | U ppm | 238 mV | $^{238}U/^{206}Pb$ | 2s | $^{207}Pb/^{206}Pb$ | 2s | rho |
|---|---|---|---|---|---|---|---|---|
| 7 | SFN1--7 | 1.53 | 6.8 | 49.4 | 4.9 | 0.726 | 0.02 | 0.63 |
| 8 | SFN1--8 | 0.86 | 3.8 | 37.5 | 3.9 | 0.720 | 0.02 | 0.66 |
| 9 | SFN1--9 | 0.79 | 3.5 | 40.8 | 5.9 | 0.696 | 0.02 | 0.64 |
| 10 | SFN1--11 | 0.28 | 1.2 | 18.6 | 3.9 | 0.778 | 0.02 | 0.64 |
| 11 | SFN1--12 | 0.52 | 2.3 | 305 | 18 | 0.237 | 0.03 | 0.33 |
| 12 | SFN1--13 | 0.35 | 1.6 | 168 | 16 | 0.463 | 0.04 | 0.53 |
| 13 | SFN1--14 | 0.40 | 1.8 | 20.7 | 2.5 | 0.753 | 0.02 | 0.68 |
| 14 | SFN1--15 | 0.77 | 3.4 | 308 | 16 | 0.230 | 0.03 | 0.32 |
| 15 | SFN1--16 | 0.69 | 3.1 | 268 | 20 | 0.312 | 0.04 | 0.39 |
| 16 | SFN1--17 | 1.40 | 6.2 | 12.2 | 1.5 | 0.807 | 0.02 | 0.69 |
| 17 | SFN1--18 | 1.10 | 4.9 | 138 | 7 | 0.570 | 0.02 | 0.58 |
| 18 | SFN1--19 | 0.80 | 3.6 | 306 | 15 | 0.220 | 0.02 | 0.31 |
| 19 | SFN1--20 | 0.71 | 3.2 | 88 | 17 | 0.598 | 0.04 | 0.62 |
| 20 | SFN1--21 | 1.12 | 4.9 | 31.7 | 13.1 | 0.726 | 0.03 | 0.67 |
| 21 | SFN1--22 | 1.10 | 4.9 | 381 | 11 | 0.082 | 0.01 | 0.12 |
| 22 | SFN1--23 | 0.51 | 2.3 | 117 | 8 | 0.595 | 0.02 | 0.57 |
| 23 | SFN1--24 | 0.73 | 3.2 | 231 | 10 | 0.402 | 0.03 | 0.46 |
| 24 | SFN1--25 | 0.75 | 3.3 | 102 | 13 | 0.604 | 0.04 | 0.57 |
| 25 | SFN1--27 | 0.70 | 3.1 | 406 | 12 | 0.065 | 0.01 | 0.09 |
| 26 | SFN1--28 | 0.54 | 2.4 | 390 | 16 | 0.079 | 0.02 | 0.17 |
| | | | | | | | | |
| 1 | SFN4-2 | 0.08 | 0.4 | 285 | 43 | 0.325 | 0.08 | 0.32 |
| 2 | SFN4-4 | 0.10 | 0.4 | 170 | 18 | 0.510 | 0.07 | 0.27 |
| 3 | SFN4-6 | 0.18 | 0.8 | 422 | 36 | 0.107 | 0.05 | 0.11 |
| 4 | SFN4-13 | 0.25 | 1.1 | 409 | 26 | 0.156 | 0.04 | 0.14 |
| 5 | SFN4-14 | 0.14 | 0.6 | 460 | 38 | 0.111 | 0.04 | 0.18 |
| 6 | SFN4-16 | 0.27 | 1.2 | 344 | 46 | 0.177 | 0.05 | 0.26 |
| 7 | SFN4-17 | 0.08 | 0.3 | 88 | 20 | 0.630 | 0.07 | 0.62 |
| 8 | SFN4-18 | 0.12 | 0.5 | 186 | 18 | 0.595 | 0.06 | 0.36 |
| 9 | SFN4-19 | 0.19 | 0.8 | 402 | 34 | 0.139 | 0.06 | 0.14 |
| 10 | SFN4-20 | 0.03 | 0.1 | 17.4 | 5.9 | 0.825 | 0.07 | 0.19 |
| 11 | SFN4-22 | 0.77 | 3.4 | 317 | 15 | 0.303 | 0.02 | 0.37 |
| 12 | SFN4-23 | 0.35 | 1.5 | 297 | 20 | 0.362 | 0.03 | 0.38 |
| 13 | SFN4-24 | 0.46 | 2.0 | 329 | 17 | 0.296 | 0.03 | 0.34 |
| 14 | SFN4-25 | 0.13 | 0.6 | 67 | 15 | 0.669 | 0.06 | 0.64 |
| 15 | SFN4-26 | 0.09 | 0.4 | 92 | 13 | 0.735 | 0.06 | 0.48 |
| 16 | SFN4-28 | 0.17 | 0.8 | 392 | 39 | 0.218 | 0.06 | 0.30 |
| | | | | | | | | |
| 1 | YG2-1 | 0.13 | 0.7 | 145 | 10 | 0.489 | 0.04 | 0.63 |
| 2 | YG2-2 | 0.07 | 0.4 | 120 | 13 | 0.368 | 0.04 | 0.72 |
| 3 | YG2-3 | 0.06 | 0.3 | 83 | 19 | 0.514 | 0.09 | 0.56 |
| 4 | YG2-4 | 0.10 | 0.5 | 117 | 13 | 0.550 | 0.06 | 0.60 |
| 5 | YG2-5 | 0.12 | 0.6 | 109 | 5 | 0.539 | 0.03 | 0.70 |
| 6 | YG2-6 | 0.15 | 0.8 | 134 | 8 | 0.398 | 0.04 | 0.78 |
| 7 | YG2-7 | 0.13 | 0.7 | 144 | 11 | 0.444 | 0.04 | 0.69 |
| 8 | YG2-8 | 0.08 | 0.4 | 193 | 23 | 0.412 | 0.09 | 0.70 |
| 9 | YG2-9 | 0.04 | 0.2 | 37.3 | 5.7 | 0.497 | 0.06 | 0.64 |
| 10 | YG2-10 | 0.02 | 0.1 | 11.6 | 14.1 | 0.412 | 0.06 | 0.41 |
| 11 | YG2-11 | 0.08 | 0.4 | 59 | 5 | 0.664 | 0.05 | 0.61 |
| 12 | YG2-12 | 0.06 | 0.3 | 102 | 15 | 0.441 | 0.05 | 0.73 |

| # | Sample | U ppm | 238 mV | $^{238}U/^{206}Pb$ | 2s | $^{207}Pb/^{206}Pb$ | 2s | rho |
|---|---|---|---|---|---|---|---|---|
| 13 | YG2-13 | 0.13 | 0.6 | 154 | 9 | 0.387 | 0.04 | 0.70 |
| 14 | YG2-14 | 0.17 | 0.9 | 199 | 10 | 0.331 | 0.04 | 0.62 |
| 15 | YG2-15 | 0.04 | 0.2 | 93 | 14 | 0.418 | 0.06 | 0.70 |
| 16 | YG2-16 | 0.12 | 0.6 | 218 | 21 | 0.278 | 0.04 | 0.81 |
| 17 | YG2-17 | 0.09 | 0.5 | 141 | 18 | 0.515 | 0.06 | 0.56 |
| 18 | YG2-18 | 0.02 | 0.1 | 24.2 | 16.9 | 0.510 | 0.08 | 0.76 |
| 19 | YG2-19 | 0.06 | 0.3 | 95 | 10 | 0.467 | 0.05 | 0.59 |
| 20 | YG2-20 | 0.09 | 0.5 | 201 | 29 | 0.355 | 0.06 | 0.73 |
| 21 | YG2-21 | 0.12 | 0.6 | 140 | 10 | 0.438 | 0.05 | 0.80 |
| 22 | YG2-22 | 0.05 | 0.2 | 68 | 12 | 0.544 | 0.07 | 0.62 |
| 23 | YG2-23 | 0.04 | 0.2 | 135 | 25 | 0.410 | 0.12 | 0.80 |
| 24 | YG2-24 | 0.06 | 0.3 | 112 | 15 | 0.424 | 0.06 | 0.60 |
| 25 | YG2-25 | 0.07 | 0.4 | 162 | 20 | 0.491 | 0.10 | 0.73 |
| 26 | YG2-26 | 0.11 | 0.6 | 152 | 14 | 0.400 | 0.05 | 0.65 |
| 27 | YG2-27 | 0.09 | 0.5 | 218 | 28 | 0.371 | 0.08 | 0.81 |
| 28 | YG2-28 | 0.09 | 0.5 | 91 | 8 | 0.427 | 0.04 | 0.72 |
| 29 | YG2-29 | 0.04 | 0.2 | 121 | 23 | 0.560 | 0.16 | 0.58 |
| 30 | YG2-30 | 0.07 | 0.4 | 133 | 14 | 0.386 | 0.09 | 0.82 |
| 31 | YG2-31 | 0.12 | 0.6 | 246 | 21 | 0.278 | 0.07 | 0.72 |
| 32 | YG2-32 | 0.14 | 0.7 | 125 | 15 | 0.322 | 0.04 | 0.66 |
| 33 | YG2-33 | 0.22 | 1.1 | 129 | 7 | 0.328 | 0.03 | 0.78 |
| 34 | YG2-34 | 0.08 | 0.4 | 152 | 15 | 0.397 | 0.05 | 0.61 |
| 35 | YG2-35 | 0.10 | 0.5 | 223 | 16 | 0.326 | 0.06 | 0.87 |
| 36 | YG2-36 | 0.17 | 0.9 | 266 | 18 | 0.247 | 0.05 | 0.87 |
| 37 | YG2-37 | 0.45 | 2.2 | 219 | 9 | 0.312 | 0.02 | 0.60 |
| 38 | YG2-38 | 0.13 | 0.6 | 229 | 18 | 0.279 | 0.08 | 0.87 |
| 39 | YG2-39 | 0.25 | 1.2 | 245 | 20 | 0.235 | 0.04 | 0.82 |
| 40 | YG2-40 | 0.12 | 0.6 | 143 | 12 | 0.355 | 0.04 | 0.61 |
| 41 | YG2-41 | 0.02 | 0.1 | 35.9 | 14.9 | 0.532 | 0.06 | 0.81 |
| 42 | YG2-42 | 0.56 | 2.8 | 149 | 30 | 0.369 | 0.06 | 0.59 |
| 43 | YG2-43 | 0.13 | 0.6 | 265 | 25 | 0.274 | 0.06 | 0.82 |
| 44 | YG2-44 | 0.19 | 0.9 | 250 | 16 | 0.142 | 0.03 | 0.89 |
| 45 | YG2-45 | 0.26 | 1.3 | 317 | 16 | 0.138 | 0.03 | 0.90 |
| 46 | YG2-46 | 0.19 | 1.0 | 233 | 19 | 0.289 | 0.04 | 0.68 |
| 47 | YG2-47 | 0.19 | 1.0 | 233 | 20 | 0.294 | 0.06 | 0.83 |
| 48 | YG2-48 | 0.33 | 1.6 | 152 | 14 | 0.465 | 0.04 | 0.62 |
| 1 | YG3-1 | 0.42 | 2.0 | 88 | 7 | 0.640 | 0.04 | 0.53 |
| 2 | YG3-2 | 0.23 | 1.1 | 34.1 | 1.7 | 0.700 | 0.02 | 0.59 |
| 3 | YG3-3 | 0.59 | 2.9 | 64 | 3 | 0.288 | 0.02 | 0.71 |
| 4 | YG3-4 | 0.25 | 1.2 | 23.0 | 1.2 | 0.712 | 0.02 | 0.53 |
| 5 | YG3-5 | 0.29 | 1.4 | 57 | 13 | 0.617 | 0.04 | 0.55 |
| 6 | YG3-6 | 0.34 | 1.7 | 67 | 15 | 0.604 | 0.04 | 0.55 |
| 7 | YG3-7 | 0.31 | 1.5 | 182 | 35 | 0.440 | 0.06 | 0.56 |
| 8 | YG3-8 | 0.30 | 1.4 | 155 | 28 | 0.417 | 0.06 | 0.63 |
| 9 | YG3-9 | 0.38 | 1.9 | 129 | 12 | 0.555 | 0.04 | 0.53 |
| 10 | YG3-10 | 0.30 | 1.5 | 345 | 40 | 0.212 | 0.03 | 0.43 |
| 11 | YG3-11 | 0.27 | 1.3 | 31.3 | 1.6 | 0.716 | 0.02 | 0.54 |
| 12 | YG3-12 | 0.40 | 1.9 | 118 | 16 | 0.590 | 0.04 | 0.55 |
| 13 | YG3-13 | 0.08 | 0.4 | 210 | 27 | 0.640 | 0.14 | 0.87 |

| # | Sample | U ppm | 238 mV | $^{238}U/^{206}Pb$ | 2s | $^{207}Pb/^{206}Pb$ | 2s | rho |
|---|---|---|---|---|---|---|---|---|
| 14 | YG3-14 | 0.26 | 1.3 | 90 | 12 | 0.656 | 0.03 | 0.54 |
| 15 | YG3-15 | 0.24 | 1.1 | 59 | 4 | 0.661 | 0.03 | 0.59 |
| 16 | YG3-16 | 0.36 | 1.7 | 334 | 27 | 0.225 | 0.04 | 0.73 |
| 17 | YG3-17 | 0.22 | 1.0 | 82 | 33 | 0.592 | 0.04 | 0.50 |
| 18 | YG3-18 | 0.22 | 1.1 | 189 | 22 | 0.438 | 0.05 | 0.65 |
| 19 | YG3-19 | 0.31 | 1.5 | 69 | 13 | 0.611 | 0.04 | 0.55 |
| 20 | YG3-20 | 0.43 | 2.0 | 256 | 24 | 0.392 | 0.03 | 0.60 |
| 21 | YG3-21 | 0.36 | 1.7 | 112 | 13 | 0.531 | 0.03 | 0.59 |
| 22 | YG3-22 | 0.26 | 1.2 | 7.1 | 2.3 | 0.741 | 0.02 | 0.50 |
| 23 | YG3-23 | 0.36 | 1.7 | 6.2 | 1.5 | 0.741 | 0.02 | 0.51 |
| 24 | YG3-24 | 0.30 | 1.4 | 38.6 | 5.8 | 0.706 | 0.02 | 0.50 |
| 25 | YG3-25 | 0.14 | 0.6 | 116 | 14 | 0.487 | 0.04 | 0.69 |
| 26 | YG3-26 | 0.09 | 0.4 | 175 | 18 | 0.434 | 0.06 | 0.72 |
| 27 | YG3-27 | 0.13 | 0.6 | 310 | 29 | 0.351 | 0.10 | 0.83 |
| 28 | YG3-28 | 0.05 | 0.2 | 189 | 28 | 0.410 | 0.14 | 0.87 |
| 29 | YG3-29 | 0.17 | 0.8 | 84 | 11 | 0.566 | 0.03 | 0.52 |
| 30 | YG3-30 | 0.39 | 1.9 | 300 | 17 | 0.177 | 0.03 | 0.85 |
| 31 | YG3-31 | 0.75 | 3.6 | 261 | 32 | 0.248 | 0.06 | 0.63 |
| 32 | YG3-32 | 0.17 | 0.8 | 266 | 38 | 0.202 | 0.05 | 0.65 |
| 33 | YG3-33 | 0.28 | 1.3 | 158 | 36 | 0.414 | 0.07 | 0.66 |
| 34 | YG3-34 | 2.04 | 9.6 | 293 | 45 | 0.287 | 0.06 | 0.65 |
| 35 | YG3-35 | 1.15 | 5.4 | 61 | 23 | 0.605 | 0.04 | 0.61 |
| 36 | YG3-37 | 0.85 | 4.0 | 109 | 16 | 0.493 | 0.04 | 0.58 |
| 37 | YG3-38 | 0.74 | 3.5 | 358 | 12 | 0.085 | 0.01 | 0.59 |
| 38 | YG3-39 | 0.46 | 2.2 | 300 | 25 | 0.142 | 0.04 | 0.52 |
| 39 | YG3-40 | 0.65 | 3.0 | 350 | 16 | 0.066 | 0.02 | 0.77 |
| 40 | YG3-41 | 0.59 | 2.7 | 360 | 17 | 0.082 | 0.02 | 0.80 |
| 41 | YG3-42 | 0.85 | 4.0 | 349 | 15 | 0.080 | 0.01 | 0.58 |
| 42 | YG3-43 | 0.09 | 0.4 | 338 | 55 | 0.360 | 0.12 | 0.80 |
| 43 | YG3-44 | 0.43 | 2.0 | 343 | 20 | 0.199 | 0.03 | 0.82 |
| 44 | YG3-45 | 0.18 | 0.8 | 4.35 | 0.75 | 0.774 | 0.02 | 0.51 |
| 45 | YG3-46 | 0.45 | 2.1 | 24.8 | 11.2 | 0.687 | 0.04 | 0.50 |
| 46 | YG3-47 | 0.67 | 3.1 | 300 | 26 | 0.153 | 0.04 | 0.64 |
| 47 | YG3-48 | 0.07 | 0.3 | 195 | 28 | 0.390 | 0.10 | 0.79 |
| | | | | | | | | |
| 1 | YF4c-1 | 2.41 | 10.3 | 98 | 7 | 0.661 | 0.02 | 0.63 |
| 2 | YF4c-2 | 1.25 | 5.4 | 78 | 8 | 0.688 | 0.02 | 0.57 |
| 3 | YF4c-4 | 1.06 | 4.5 | 122 | 11 | 0.630 | 0.06 | 0.49 |
| 4 | YF4c-5 | 2.85 | 12.1 | 176 | 11 | 0.490 | 0.03 | 0.59 |
| 5 | YF4c-6 | 2.58 | 11.0 | 154 | 10 | 0.541 | 0.02 | 0.54 |
| 6 | YF4c-7 | 1.67 | 7.1 | 127 | 12 | 0.596 | 0.03 | 0.62 |
| 7 | YF4c-8 | 1.39 | 5.9 | 38.8 | 8.1 | 0.739 | 0.03 | 0.52 |
| 8 | YF4c-9 | 1.99 | 8.4 | 20.9 | 3.4 | 0.803 | 0.02 | 0.53 |
| 9 | YF4c-10 | 0.30 | 1.2 | 37.3 | 2.1 | 0.746 | 0.02 | 0.56 |
| 10 | YF4c-11 | 0.35 | 1.5 | 36.4 | 1.2 | 0.756 | 0.02 | 0.57 |
| 11 | YF4c-12 | 0.20 | 0.8 | 7.1 | 0.4 | 0.809 | 0.02 | 0.50 |
| 12 | YF4c-13 | 1.30 | 5.5 | 131 | 12 | 0.529 | 0.03 | 0.56 |
| 13 | YF4c-14 | 0.46 | 1.9 | 71 | 3 | 0.646 | 0.03 | 0.54 |
| 14 | YF4c-15 | 1.63 | 6.9 | 108 | 5 | 0.624 | 0.02 | 0.59 |
| 15 | YF4c-16 | 0.33 | 1.4 | 14.2 | 0.9 | 0.794 | 0.02 | 0.56 |

| # | Sample | U ppm | 238 mV | $^{238}U/^{206}Pb$ | 2s | $^{207}Pb/^{206}Pb$ | 2s | rho |
|---|---|---|---|---|---|---|---|---|
| 16 | YF4c-17 | 0.25 | 1.1 | 12.8 | 0.9 | 0.817 | 0.02 | 0.52 |
| 17 | YF4c-18 | 0.01 | 0.1 | 1.28 | 1.27 | 0.778 | 0.08 | 0.56 |
| 18 | YF4c-19 | 2.70 | 11.3 | 198 | 21 | 0.460 | 0.03 | 0.60 |
| 19 | YF4c-20 | 3.65 | 15.3 | 135 | 15 | 0.556 | 0.03 | 0.54 |
| 20 | YF4c-21 | 3.09 | 12.9 | 186 | 7 | 0.484 | 0.02 | 0.59 |
| 21 | YF4c-22 | 1.45 | 6.1 | 43.1 | 2.5 | 0.743 | 0.02 | 0.50 |
| 22 | YF4c-23 | 0.59 | 2.5 | 25.9 | 1.2 | 0.781 | 0.02 | 0.51 |
| 23 | YF4c-24 | 2.71 | 11.3 | 135 | 11 | 0.530 | 0.03 | 0.44 |
| 24 | YF4c-25 | 1.86 | 7.7 | 26.8 | 1.9 | 0.781 | 0.02 | 0.53 |
| 25 | YF4c-26 | 1.86 | 7.7 | 13.2 | 1.2 | 0.797 | 0.02 | 0.50 |
| 26 | YF4c-27 | 1.94 | 8.0 | 92 | 6 | 0.651 | 0.02 | 0.51 |
| 27 | YF4c-28 | 2.86 | 11.8 | 116 | 12 | 0.612 | 0.02 | 0.56 |
| 28 | YF4c-29 | 0.84 | 3.5 | 32.8 | 2.5 | 0.767 | 0.02 | 0.48 |
| 29 | YF4c-30 | 0.98 | 4.1 | 115 | 5 | 0.628 | 0.03 | 0.46 |
| 30 | YF4c-31 | 0.78 | 3.2 | 33.2 | 2.1 | 0.751 | 0.02 | 0.52 |
| 31 | YF4c-32 | 0.87 | 3.6 | 51 | 7 | 0.728 | 0.02 | 0.52 |
| 32 | YF4c-33 | 0.89 | 3.6 | 100 | 5 | 0.642 | 0.02 | 0.60 |
| 33 | YF4c-34 | 1.03 | 4.2 | 105 | 4 | 0.644 | 0.02 | 0.46 |
| 34 | YF4c-35 | 0.42 | 1.7 | 36.0 | 2.2 | 0.774 | 0.02 | 0.38 |
| 35 | YF4c-36 | 2.91 | 11.9 | 266 | 9 | 0.331 | 0.01 | 0.61 |
| 36 | YF4c-37 | 0.91 | 3.7 | 19.8 | 1.3 | 0.783 | 0.02 | 0.52 |
| 37 | YF4c-38 | 2.72 | 11.1 | 157 | 13 | 0.538 | 0.02 | 0.56 |
| 38 | YF4c-39 | 1.91 | 7.8 | 180 | 15 | 0.472 | 0.03 | 0.62 |
| 39 | YF4c-40 | 1.74 | 7.1 | 23.4 | 1.6 | 0.766 | 0.02 | 0.52 |
| 40 | YF4c-41 | 0.79 | 3.2 | 32.2 | 1.7 | 0.775 | 0.02 | 0.56 |
| 41 | YF4c-42 | 1.05 | 4.3 | 128 | 30 | 0.581 | 0.05 | 0.51 |
| 42 | YF4c-43 | 1.90 | 7.7 | 51 | 9 | 0.739 | 0.02 | 0.53 |
| 43 | YF4c-44 | 0.78 | 3.2 | 29.2 | 3.4 | 0.778 | 0.02 | 0.50 |
| 44 | YF4c-45 | 1.73 | 7.0 | 99 | 6 | 0.641 | 0.02 | 0.55 |
| 45 | YF4c-46 | 0.64 | 2.6 | 46.6 | 2.7 | 0.735 | 0.02 | 0.50 |
| 46 | YF4c-47 | 0.54 | 2.2 | 25.4 | 2.7 | 0.778 | 0.02 | 0.52 |
| 47 | YF4c-48 | 3.05 | 12.3 | 125 | 8 | 0.565 | 0.02 | 0.52 |
| 1 | YF5-1 | 0.66 | 3.0 | 87 | 3 | 0.668 | 0.02 | 0.51 |
| 2 | YF5-2 | 0.21 | 0.9 | 8.6 | 0.5 | 0.799 | 0.02 | 0.52 |
| 3 | YF5-3 | 0.18 | 0.8 | 9.6 | 0.7 | 0.802 | 0.02 | 0.51 |
| 4 | YF5-4 | 0.27 | 1.3 | 58 | 2 | 0.700 | 0.03 | 0.54 |
| 5 | YF5-5 | 0.61 | 2.8 | 29.1 | 1.1 | 0.760 | 0.02 | 0.56 |
| 6 | YF5-6 | 0.12 | 0.6 | 13.7 | 0.8 | 0.789 | 0.02 | 0.54 |
| 7 | YF5-7 | 0.75 | 3.4 | 40.1 | 2.6 | 0.740 | 0.02 | 0.47 |
| 8 | YF5-8 | 0.04 | 0.2 | 0.49 | 0.06 | 0.802 | 0.02 | 0.51 |
| 9 | YF5-9 | 0.48 | 2.2 | 25.4 | 1.1 | 0.786 | 0.02 | 0.53 |
| 10 | YF5-10 | 0.35 | 1.6 | 8.3 | 0.4 | 0.811 | 0.02 | 0.53 |
| 11 | YF5-11 | 0.40 | 1.8 | 17.4 | 0.7 | 0.795 | 0.02 | 0.54 |
| 12 | YF5-12 | 0.34 | 1.5 | 11.2 | 0.6 | 0.791 | 0.02 | 0.54 |
| 13 | YF5-13 | 0.27 | 1.2 | 5.2 | 0.2 | 0.801 | 0.02 | 0.51 |
| 14 | YF5-14 | 0.40 | 1.8 | 26.2 | 0.8 | 0.774 | 0.02 | 0.48 |
| 15 | YF5-15 | 0.40 | 1.8 | 31.2 | 1.1 | 0.759 | 0.02 | 0.52 |
| 16 | YF5-16 | 0.40 | 1.8 | 9.2 | 0.3 | 0.794 | 0.02 | 0.42 |
| 17 | YF5-17 | 0.73 | 3.3 | 93 | 3 | 0.645 | 0.02 | 0.55 |

| # | Sample | U ppm | 238 mV | $^{238}U/^{206}Pb$ | 2s | $^{207}Pb/^{206}Pb$ | 2s | rho |
|---|---|---|---|---|---|---|---|---|
| 18 | YF5-18 | 0.54 | 2.4 | 33.8 | 1.4 | 0.734 | 0.02 | 0.56 |
| 19 | YF5-19 | 0.37 | 1.6 | 7.6 | 0.3 | 0.806 | 0.02 | 0.49 |
| 20 | YF5-20 | 0.60 | 2.7 | 75 | 2 | 0.668 | 0.02 | 0.47 |
| 21 | YF5-21 | 0.64 | 2.9 | 54 | 2 | 0.707 | 0.02 | 0.57 |
| 22 | YF5-22 | 0.45 | 2.0 | 22.7 | 1.1 | 0.772 | 0.02 | 0.54 |
| 23 | YF5-23 | 0.38 | 1.7 | 19.4 | 0.8 | 0.771 | 0.02 | 0.58 |
| 24 | YF5-24 | 0.40 | 1.8 | 7.8 | 0.8 | 0.786 | 0.02 | 0.51 |
| 25 | YF5-25 | 0.38 | 1.7 | 13.9 | 0.8 | 0.797 | 0.02 | 0.50 |
| 26 | YF5-26 | 0.20 | 0.9 | 6.3 | 0.4 | 0.818 | 0.02 | 0.47 |
| 27 | YF5-27 | 0.45 | 2.0 | 10.9 | 3.9 | 0.779 | 0.02 | 0.58 |
| 28 | YF5-28 | 0.15 | 0.6 | 26.1 | 1.9 | 0.774 | 0.04 | 0.61 |
| 29 | YF5-29 | 0.13 | 0.6 | 32.6 | 1.8 | 0.719 | 0.03 | 0.63 |
| 30 | YF5-30 | 0.81 | 3.6 | 123 | 4 | 0.544 | 0.02 | 0.58 |
| 31 | YF5-31 | 0.75 | 3.3 | 105 | 7 | 0.570 | 0.02 | 0.55 |
| 32 | YF5-32 | 0.82 | 3.6 | 66 | 2 | 0.658 | 0.02 | 0.48 |
| 33 | YF5-33 | 0.33 | 1.5 | 14.4 | 0.8 | 0.797 | 0.02 | 0.57 |
| 34 | YF5-34 | 0.28 | 1.2 | 9.0 | 1.7 | 0.798 | 0.02 | 0.50 |
| 35 | YF5-35 | 0.15 | 0.7 | 4.01 | 0.17 | 0.804 | 0.02 | 0.57 |
| 36 | YF5-36 | 0.14 | 0.6 | 3.02 | 0.50 | 0.804 | 0.02 | 0.52 |
| 37 | YF5-37 | 0.38 | 1.7 | 9.0 | 0.6 | 0.798 | 0.02 | 0.49 |
| 38 | YF5-38 | 0.71 | 3.1 | 16.5 | 1.3 | 0.781 | 0.02 | 0.55 |
| 39 | YF5-39 | 0.27 | 1.2 | 24.3 | 2.7 | 0.757 | 0.02 | 0.54 |
| 40 | YF5-40 | 0.34 | 1.5 | 8.3 | 0.3 | 0.791 | 0.02 | 0.43 |
| 41 | YF5-41 | 0.34 | 1.5 | 10.4 | 0.7 | 0.801 | 0.02 | 0.52 |
| 42 | YF5-42 | 0.50 | 2.2 | 8.0 | 0.4 | 0.805 | 0.02 | 0.52 |
| 43 | YF5-43 | 0.22 | 1.0 | 9.6 | 0.7 | 0.804 | 0.02 | 0.49 |
| 44 | YF5-44 | 0.50 | 2.2 | 19.6 | 4.1 | 0.771 | 0.02 | 0.51 |
| 45 | YF5-45 | 0.53 | 2.3 | 18.1 | 0.7 | 0.782 | 0.02 | 0.59 |
| 46 | YF5-46 | 0.41 | 1.8 | 8.4 | 0.5 | 0.800 | 0.02 | 0.51 |
| 47 | YF5-47 | 0.03 | 0.1 | 0.24 | 0.07 | 0.820 | 0.02 | 0.50 |
| 48 | YF5-48 | 0.23 | 1.0 | 5.7 | 0.3 | 0.810 | 0.02 | 0.49 |
| 1 | RD2-1 | 0.11 | 0.4 | 29.0 | 3.5 | 0.702 | 0.03 | 0.28 |
| 2 | RD2-2 | 0.10 | 0.4 | 45.2 | 3.8 | 0.677 | 0.06 | 0.26 |
| 3 | RD2-3 | 0.91 | 3.5 | 279 | 16 | 0.188 | 0.02 | 0.44 |
| 4 | RD2-4 | 0.25 | 1.0 | 277 | 21 | 0.292 | 0.05 | 0.53 |
| 5 | RD2-5 | 1.29 | 5.1 | 162 | 38 | 0.383 | 0.08 | 0.52 |
| 6 | RD2-7 | 1.24 | 4.9 | 311 | 11 | 0.197 | 0.01 | 0.30 |
| 7 | RD2-8 | 0.44 | 1.8 | 123 | 6 | 0.497 | 0.04 | 0.17 |
| 8 | RD2-9 | 0.60 | 2.4 | 290 | 11 | 0.205 | 0.02 | 0.34 |
| 9 | RD2-10 | 0.05 | 0.2 | 9.5 | 1.9 | 0.700 | 0.04 | 0.08 |
| 10 | RD2-11 | 0.44 | 1.8 | 201 | 10 | 0.412 | 0.03 | 0.47 |
| 11 | RD2-12 | 0.74 | 3.0 | 316 | 13 | 0.184 | 0.03 | 0.18 |
| 12 | RD2-13 | 0.88 | 3.6 | 206 | 8 | 0.320 | 0.02 | 0.30 |
| 13 | RD2-14 | 0.04 | 0.2 | 8.3 | 1.3 | 0.664 | 0.03 | 0.19 |
| 14 | RD2-15 | 1.76 | 7.3 | 357 | 10 | 0.099 | 0.01 | 0.31 |
| 15 | RD2-16 | 0.58 | 2.4 | 250 | 20 | 0.315 | 0.02 | 0.46 |
| 16 | RD2-17 | 0.59 | 2.5 | 158 | 9 | 0.462 | 0.04 | 0.54 |
| 17 | RD2-18 | 0.26 | 1.1 | 70 | 3 | 0.617 | 0.03 | 0.41 |
| 18 | RD2-19 | 0.37 | 1.6 | 101 | 4 | 0.605 | 0.03 | 0.65 |

| # | Sample | U ppm | 238 mV | $^{238}U/^{206}Pb$ | 2s | $^{207}Pb/^{206}Pb$ | 2s | rho |
|---|---|---|---|---|---|---|---|---|
| 19 | RD2-20 | 0.50 | 2.1 | 164 | 6 | 0.436 | 0.03 | 0.26 |
| 20 | RD2-21 | 0.68 | 2.9 | 75 | 2 | 0.609 | 0.02 | 0.44 |
| 21 | RD2-22 | 1.08 | 4.7 | 238 | 10 | 0.312 | 0.02 | 0.44 |
| 22 | RD2-23 | 0.08 | 0.4 | 21.3 | 2.8 | 0.686 | 0.04 | 0.14 |
| 23 | RD2-24 | 0.35 | 1.5 | 30.0 | 1.1 | 0.668 | 0.02 | 0.46 |
| 24 | RD2-25 | 0.76 | 3.4 | 152 | 6 | 0.451 | 0.02 | 0.23 |
| 25 | RD2-26 | 0.21 | 0.9 | 96 | 6 | 0.572 | 0.04 | 0.47 |
| 26 | RD2-27 | 0.25 | 1.1 | 49.3 | 3.6 | 0.665 | 0.02 | 0.56 |
| 27 | RD2-28 | 0.79 | 3.5 | 356 | 16 | 0.121 | 0.01 | 0.25 |
| 28 | RD2-29 | 0.49 | 2.2 | 180 | 7 | 0.413 | 0.04 | 0.38 |
| 29 | RD2-30 | 0.78 | 3.5 | 338 | 14 | 0.142 | 0.01 | 0.39 |
| 30 | RD2-31 | 0.22 | 1.0 | 98 | 35 | 0.575 | 0.06 | 0.58 |
| 31 | RD2-32 | 0.29 | 1.3 | 137 | 8 | 0.502 | 0.04 | 0.45 |
| 32 | RD2-33 | 0.53 | 2.4 | 267 | 40 | 0.274 | 0.05 | 0.36 |
| 33 | RD2-34 | 0.94 | 4.3 | 269 | 11 | 0.253 | 0.03 | 0.25 |
| 34 | RD2-35 | 1.04 | 4.7 | 259 | 8 | 0.267 | 0.02 | 0.47 |
| 35 | RD2-36 | 0.06 | 0.3 | 16.5 | 1.3 | 0.668 | 0.03 | 0.30 |
| 36 | RD2-37 | 0.01 | 0.1 | 6.1 | 4.7 | 0.676 | 0.03 | 0.06 |
| 37 | RD2-38 | 0.81 | 3.7 | 232 | 29 | 0.326 | 0.06 | 0.31 |
| 38 | RD2-39 | 0.63 | 2.9 | 1.60 | 0.52 | 0.765 | 0.08 | 0.70 |
| 39 | RD2-40 | 0.57 | 2.6 | 309 | 12 | 0.214 | 0.03 | 0.27 |
| 40 | RD2-41 | 1.22 | 5.7 | 261 | 12 | 0.283 | 0.02 | 0.28 |
| 41 | RD2-42 | 0.63 | 2.9 | 113 | 7 | 0.525 | 0.02 | 0.49 |
| 42 | RD2-43 | 0.00 | 0.0 | 5.5 | 7.5 | 0.692 | 0.04 | 0.01 |
| 43 | RD2-44 | 0.02 | 0.1 | 1.65 | 1.15 | 0.746 | 0.02 | 0.38 |
| 44 | RD2-45 | 0.94 | 4.4 | 194 | 5 | 0.351 | 0.02 | 0.33 |
| 45 | RD2-46 | 0.82 | 3.8 | 318 | 11 | 0.177 | 0.02 | 0.31 |
| 46 | RD2-47 | 1.18 | 5.5 | 359 | 18 | 0.105 | 0.01 | 0.22 |
| 47 | RD2-48 | 0.02 | 0.1 | 6.4 | 3.6 | 0.678 | 0.03 | 0.06 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 | RD3-1 | 1.14 | 5.8 | 63 | 2 | 0.119 | 0.01 | 0.36 |
| 2 | RD3-2 | 1.18 | 6.0 | 64 | 2 | 0.116 | 0.00 | 0.37 |
| 3 | RD3-3 | 0.31 | 1.6 | 45.8 | 1.8 | 0.266 | 0.01 | 0.31 |
| 4 | RD3-4 | 0.99 | 5.1 | 64 | 2 | 0.117 | 0.01 | 0.13 |
| 5 | RD3-5 | 0.15 | 0.7 | 40.1 | 2.6 | 0.364 | 0.02 | 0.27 |
| 6 | RD3-6 | 0.82 | 4.2 | 55 | 1 | 0.176 | 0.01 | 0.27 |
| 7 | RD3-7 | 1.09 | 5.6 | 62 | 2 | 0.123 | 0.01 | 0.24 |
| 8 | RD3-8 | 1.56 | 8.0 | 66 | 2 | 0.072 | 0.00 | 0.34 |
| 9 | RD3-9 | 1.64 | 8.4 | 165 | 7 | 0.435 | 0.02 | 0.37 |
| 10 | RD3-10 | 0.45 | 2.3 | 124 | 7 | 0.477 | 0.02 | 0.36 |
| 11 | RD3-11 | 0.70 | 3.6 | 84 | 3 | 0.547 | 0.02 | 0.46 |
| 12 | RD3-12 | 1.17 | 6.0 | 79 | 2 | 0.555 | 0.02 | 0.30 |
| 13 | RD3-13 | 0.91 | 4.6 | 61 | 2 | 0.165 | 0.01 | 0.50 |
| 14 | RD3-14 | 0.78 | 4.0 | 61 | 2 | 0.552 | 0.02 | 0.55 |
| 15 | RD3-15 | 0.81 | 4.1 | 57 | 2 | 0.211 | 0.01 | 0.23 |
| 16 | RD3-16 | 1.61 | 8.2 | 139 | 4 | 0.420 | 0.01 | 0.46 |
| 17 | RD3-17 | 0.57 | 2.9 | 36.3 | 1.1 | 0.380 | 0.01 | 0.38 |
| 18 | RD3-18 | 0.95 | 4.9 | 49.5 | 2.3 | 0.388 | 0.01 | 0.43 |
| 19 | RD3-19 | 0.95 | 4.8 | 81 | 2 | 0.561 | 0.02 | 0.47 |
| 20 | RD3-20 | 0.54 | 2.8 | 38.7 | 1.5 | 0.625 | 0.02 | 0.33 |

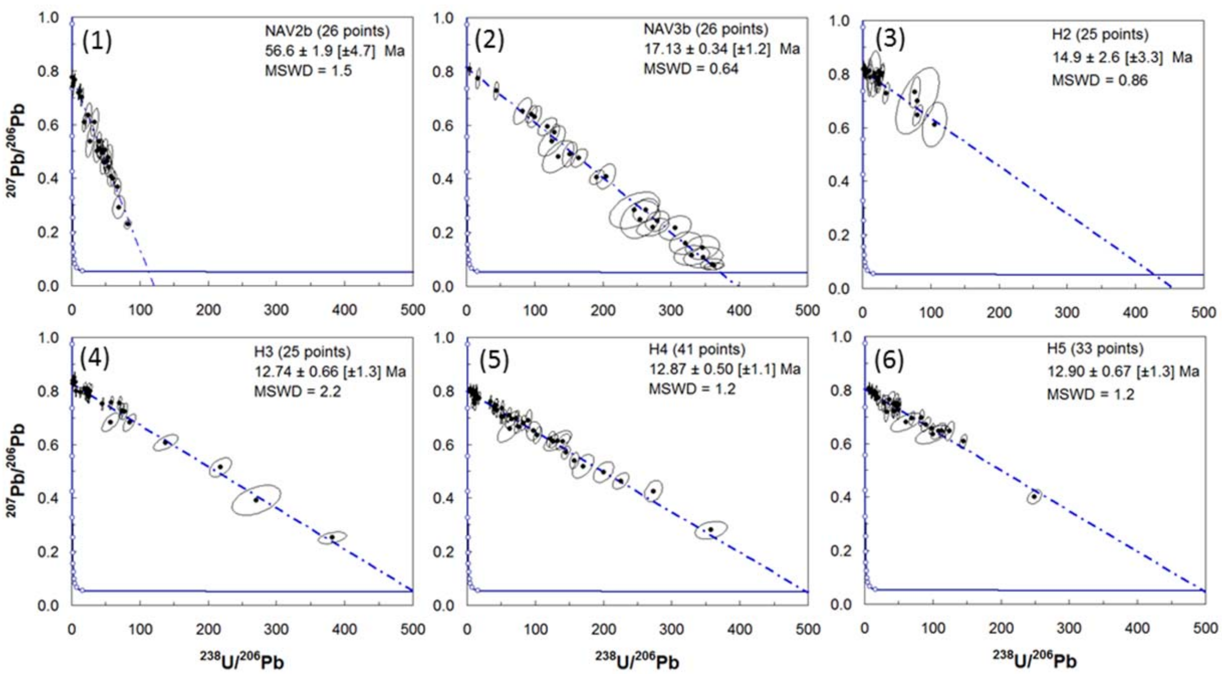
| # | Sample | U ppm | 238 mV | $^{238}U/^{206}Pb$ | 2s | $^{207}Pb/^{206}Pb$ | 2s | rho |
|---|---|---|---|---|---|---|---|---|
| 21 | RD3-21 | 0.75 | 3.8 | 54 | 2 | 0.211 | 0.01 | 0.33 |
| 22 | RD3-22 | 0.22 | 1.1 | 40.1 | 2.2 | 0.366 | 0.02 | 0.38 |
| 23 | RD3-23 | 0.05 | 0.3 | 15.0 | 2.0 | 0.608 | 0.04 | 0.21 |
| 24 | RD3-24 | 0.40 | 2.0 | 43.7 | 1.3 | 0.321 | 0.02 | 0.24 |
| 25 | RD3-25 | 0.34 | 1.7 | 59 | 2 | 0.164 | 0.01 | 0.25 |
| 26 | RD3-26 | 1.84 | 9.4 | 220 | 8 | 0.359 | 0.02 | 0.40 |
| 27 | RD3-27 | 0.30 | 1.5 | 44.5 | 1.2 | 0.319 | 0.02 | 0.28 |
| 28 | RD3-28 | 0.59 | 3.0 | 44.7 | 1.3 | 0.351 | 0.02 | 0.52 |
| 29 | RD3-29 | 0.75 | 3.8 | 63 | 2 | 0.162 | 0.01 | 0.35 |
| 30 | RD3-30 | 0.72 | 3.7 | 70 | 2 | 0.395 | 0.02 | 0.26 |
| 31 | RD3-31 | 0.38 | 1.9 | 62 | 3 | 0.463 | 0.02 | 0.44 |
| 32 | RD3-32 | 0.61 | 3.1 | 53 | 2 | 0.292 | 0.02 | 0.45 |
| 33 | RD3-33 | 0.12 | 0.6 | 29.3 | 4.6 | 0.444 | 0.04 | 0.37 |
| 34 | RD3-34 | 0.76 | 3.9 | 60 | 2 | 0.154 | 0.01 | 0.39 |
| 35 | RD3-35 | 0.46 | 2.3 | 55 | 2 | 0.192 | 0.01 | 0.24 |
| 36 | RD3-36 | 0.58 | 2.9 | 58 | 2 | 0.175 | 0.01 | 0.44 |
| 37 | RD3-37 | 1.32 | 6.7 | 62 | 2 | 0.114 | 0.00 | 0.45 |
| 38 | RD3-38 | 1.22 | 6.2 | 65 | 2 | 0.096 | 0.00 | 0.41 |
| 39 | RD3-39 | 1.28 | 6.5 | 63 | 2 | 0.101 | 0.00 | 0.32 |
| 40 | RD3-40 | 0.31 | 1.6 | 54 | 2 | 0.224 | 0.01 | 0.25 |
| 41 | RD3-41 | 1.46 | 7.4 | 64 | 2 | 0.105 | 0.00 | 0.44 |
| 42 | RD3-42 | 1.37 | 7.0 | 78 | 2 | 0.205 | 0.01 | 0.46 |
| 43 | RD3-43 | 1.10 | 5.6 | 50.0 | 1.5 | 0.245 | 0.01 | 0.40 |
| 44 | RD3-44 | 0.98 | 5.0 | 217 | 7 | 0.323 | 0.02 | 0.30 |
| 45 | RD3-45 | 0.67 | 3.4 | 66 | 2 | 0.571 | 0.02 | 0.39 |
| 46 | RD3-46 | 0.61 | 3.1 | 30.2 | 0.8 | 0.609 | 0.02 | 0.40 |
| 47 | RD3-47 | 0.90 | 4.6 | 59 | 2 | 0.136 | 0.01 | 0.32 |
| 48 | RD3-48 | 0.38 | 1.9 | 60 | 3 | 0.269 | 0.02 | 0.43 |
| | | | | | | | | |
| 1 | RD4-1 | 0.26 | 1.2 | 14.7 | 0.9 | 0.786 | 0.02 | 0.59 |
| 2 | RD4-2 | 0.26 | 1.3 | 52 | 2 | 0.704 | 0.03 | 0.42 |
| 3 | RD4-3 | 0.34 | 1.6 | 63 | 2 | 0.656 | 0.03 | 0.43 |
| 4 | RD4-4 | 0.26 | 1.2 | 92 | 3 | 0.553 | 0.03 | 0.25 |
| 5 | RD4-5 | 0.34 | 1.6 | 74 | 3 | 0.621 | 0.03 | 0.20 |
| 6 | RD4-6 | 0.15 | 0.7 | 30.5 | 2.1 | 0.747 | 0.04 | 0.61 |
| 7 | RD4-7 | 0.17 | 0.8 | 39.7 | 2.3 | 0.719 | 0.04 | 0.34 |
| 8 | RD4-8 | 0.18 | 0.9 | 31.9 | 1.9 | 0.745 | 0.03 | 0.49 |
| 9 | RD4-9 | 0.20 | 1.0 | 30.4 | 1.6 | 0.718 | 0.03 | 0.45 |
| 10 | RD4-10 | 0.29 | 1.4 | 72 | 4 | 0.664 | 0.03 | 0.49 |
| 11 | RD4-11 | 0.22 | 1.0 | 50.0 | 3.1 | 0.691 | 0.03 | 0.37 |
| 12 | RD4-12 | 0.19 | 0.9 | 62 | 3 | 0.684 | 0.04 | 0.37 |
| 13 | RD4-13 | 0.24 | 1.2 | 69 | 3 | 0.620 | 0.04 | 0.31 |
| 14 | RD4-14 | 0.28 | 1.3 | 61 | 2 | 0.657 | 0.04 | 0.45 |
| 15 | RD4-15 | 0.21 | 1.0 | 66 | 3 | 0.649 | 0.03 | 0.32 |
| 16 | RD4-16 | 0.56 | 2.7 | 10.1 | 1.1 | 0.785 | 0.02 | 0.68 |
| 17 | RD4-17 | 0.09 | 0.4 | 10.3 | 0.8 | 0.784 | 0.02 | 0.23 |
| 18 | RD4-18 | 0.09 | 0.4 | 9.3 | 0.8 | 0.795 | 0.03 | 0.19 |
| 19 | RD4-19 | 0.08 | 0.4 | 40.3 | 3.7 | 0.712 | 0.05 | 0.21 |
| 20 | RD4-20 | 0.05 | 0.3 | 34.8 | 2.9 | 0.698 | 0.05 | 0.32 |
| 21 | RD4-21 | 0.07 | 0.3 | 34.3 | 2.9 | 0.697 | 0.04 | 0.29 |

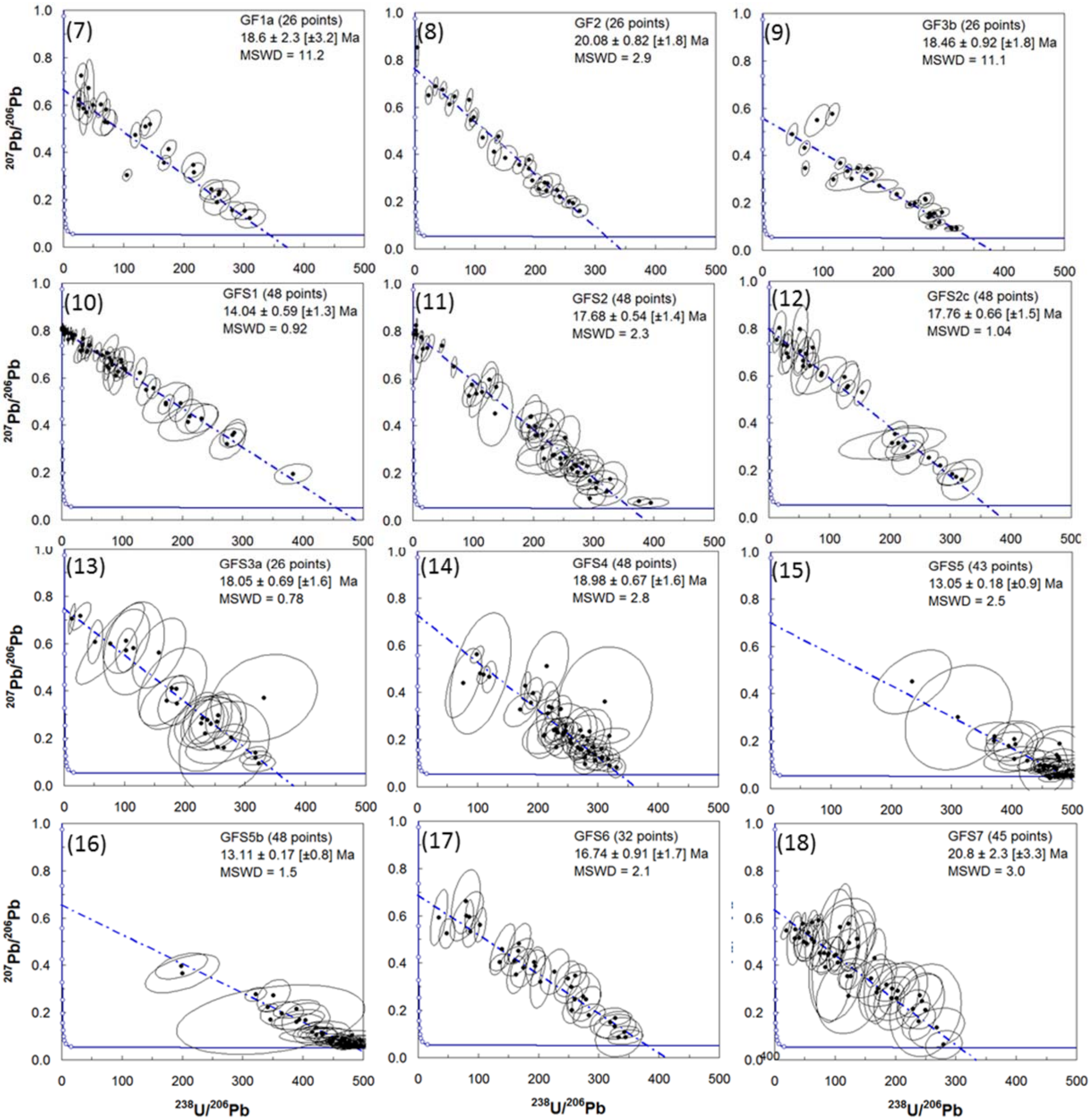
| # | Sample | U ppm | 238 mV | $^{238}U/^{206}Pb$ | 2s | $^{207}Pb/^{206}Pb$ | 2s | rho |
|---|---|---|---|---|---|---|---|---|
| 22 | RD4-22 | 0.20 | 0.9 | 42.8 | 3.5 | 0.705 | 0.04 | 0.45 |
| 23 | RD4-23 | 0.29 | 1.4 | 57 | 2 | 0.688 | 0.02 | 0.41 |
| 24 | RD4-24 | 0.24 | 1.2 | 70 | 3 | 0.672 | 0.03 | 0.54 |
| 25 | RD4-25 | 1.20 | 5.9 | 324 | 31 | 0.131 | 0.03 | 0.30 |
| 26 | RD4-26 | 0.41 | 2.0 | 12.0 | 1.5 | 0.789 | 0.02 | 0.65 |
| 27 | RD4-27 | 1.93 | 9.5 | 193 | 36 | 0.376 | 0.07 | 0.47 |
| 28 | RD4-28 | 0.92 | 4.5 | 333 | 13 | 0.148 | 0.02 | 0.24 |
| 29 | RD4-29 | 1.65 | 8.1 | 361 | 12 | 0.093 | 0.01 | 0.19 |
| 30 | RD4-30 | 0.28 | 1.4 | 74 | 4 | 0.577 | 0.03 | 0.55 |
| 31 | RD4-31 | 0.28 | 1.4 | 78 | 11 | 0.606 | 0.04 | 0.58 |
| 32 | RD4-32 | 0.92 | 4.6 | 28.8 | 3.6 | 0.725 | 0.02 | 0.65 |
| 33 | RD4-33 | 0.06 | 0.3 | 10.6 | 2.1 | 0.801 | 0.04 | 0.58 |
| 34 | RD4-34 | 2.62 | 13.0 | 173 | 11 | 0.465 | 0.01 | 0.55 |
| 35 | RD4-35 | 1.08 | 5.3 | 83 | 3 | 0.604 | 0.02 | 0.43 |
| 36 | RD4-36 | 0.62 | 3.1 | 46.2 | 1.5 | 0.472 | 0.02 | 0.44 |
| 37 | RD4-37 | 0.74 | 3.7 | 34.9 | 1.3 | 0.502 | 0.02 | 0.45 |
| 38 | RD4-38 | 1.53 | 7.6 | 58 | 6 | 0.676 | 0.02 | 0.60 |
| 39 | RD4-40 | 0.28 | 1.4 | 27.9 | 1.3 | 0.745 | 0.03 | 0.34 |
| 40 | RD4-41 | 1.16 | 5.8 | 340 | 26 | 0.106 | 0.02 | 0.15 |
| 41 | RD4-42 | 0.08 | 0.4 | 8.3 | 0.7 | 0.811 | 0.03 | 0.20 |
| 42 | RD4-43 | 0.13 | 0.7 | 44.2 | 2.4 | 0.747 | 0.04 | 0.49 |
| 43 | RD4-44 | 0.15 | 0.8 | 52 | 3 | 0.679 | 0.04 | 0.50 |
| 44 | RD4-45 | 0.37 | 1.9 | 62 | 3 | 0.655 | 0.03 | 0.43 |
| 45 | RD4-46 | 0.14 | 0.7 | 55 | 4 | 0.659 | 0.05 | 0.46 |
| 46 | RD4-47 | 0.20 | 1.0 | 38.8 | 2.4 | 0.680 | 0.03 | 0.61 |
| 47 | RD4-48 | 0.08 | 0.4 | 42.3 | 4.9 | 0.718 | 0.04 | 0.25 |
| 1 | RD5-2 | 0.66 | 3.3 | 146 | 33 | 0.494 | 0.08 | 0.52 |
| 2 | RD5-3 | 0.36 | 1.8 | 325 | 63 | 0.192 | 0.08 | 0.25 |
| 3 | RD5-4 | 0.56 | 2.8 | 260 | 72 | 0.285 | 0.06 | 0.35 |
| 4 | RD5-5 | 0.15 | 0.8 | 275 | 30 | 0.450 | 0.11 | 0.29 |
| 5 | RD5-6 | 0.11 | 0.6 | 252 | 30 | 0.446 | 0.07 | 0.34 |
| 6 | RD5-7 | 0.16 | 0.8 | 419 | 46 | 0.240 | 0.11 | 0.30 |
| 7 | RD5-8 | 0.21 | 1.0 | 261 | 12 | 0.346 | 0.06 | 0.32 |
| 8 | RD5-9 | 0.40 | 2.0 | 386 | 20 | 0.077 | 0.04 | 0.07 |
| 9 | RD5-10 | 0.24 | 1.2 | 391 | 22 | 0.147 | 0.05 | 0.14 |
| 10 | RD5-11 | 0.57 | 2.9 | 394 | 17 | 0.087 | 0.02 | 0.15 |
| 11 | RD5-12 | 0.30 | 1.5 | 379 | 44 | 0.108 | 0.06 | 0.15 |
| 12 | RD5-13 | 0.18 | 0.9 | 275 | 25 | 0.373 | 0.06 | 0.39 |
| 13 | RD5-15 | 0.35 | 1.8 | 348 | 22 | 0.227 | 0.03 | 0.34 |
| 14 | RD5-16 | 0.33 | 1.6 | 338 | 16 | 0.195 | 0.04 | 0.10 |
| 15 | RD5-18 | 0.18 | 0.9 | 386 | 35 | 0.174 | 0.06 | 0.14 |
| 16 | RD5-19 | 0.07 | 0.4 | 170 | 48 | 0.510 | 0.18 | 0.41 |
| 17 | RD5-20 | 1.08 | 5.5 | 260 | 78 | 0.215 | 0.10 | 0.38 |
| 18 | RD5-21 | 0.37 | 1.9 | 186 | 76 | 0.310 | 0.12 | 0.45 |
| 19 | RD5-23 | 0.43 | 2.2 | 347 | 22 | 0.153 | 0.05 | 0.16 |
| 20 | RD5-24 | 0.29 | 1.5 | 371 | 29 | 0.171 | 0.06 | 0.14 |
| 21 | RD5-25 | 0.37 | 1.9 | 370 | 22 | 0.099 | 0.03 | 0.17 |
| 22 | RD5-26 | 0.29 | 1.5 | 381 | 22 | 0.101 | 0.04 | 0.13 |
| 23 | RD5-27 | 0.47 | 2.4 | 345 | 45 | 0.133 | 0.04 | 0.29 |

| # | Sample | U ppm | 238 mV | $^{238}U/^{206}Pb$ | 2s | $^{207}Pb/^{206}Pb$ | 2s | rho |
|---|---|---|---|---|---|---|---|---|
| 24 | RD5-28 | 0.49 | 2.5 | 378 | 19 | 0.088 | 0.03 | 0.14 |
| 25 | RD5-29 | 0.26 | 1.3 | 394 | 34 | 0.108 | 0.04 | 0.22 |
| 26 | RD5-31 | 0.44 | 2.2 | 392 | 18 | 0.059 | 0.03 | 0.09 |
| 27 | RD5-41 | 0.32 | 1.6 | 242 | 96 | 0.259 | 0.07 | 0.41 |
| 28 | RD5-42 | 0.53 | 2.7 | 186 | 119 | 0.250 | 0.13 | 0.54 |
| 29 | RD5-43 | 0.46 | 2.4 | 281 | 122 | 0.136 | 0.06 | 0.33 |
| 30 | RD5-44 | 0.29 | 1.5 | 260 | 163 | 0.240 | 0.10 | 0.42 |
| 31 | RD5-45 | 0.29 | 1.5 | 260 | 91 | 0.220 | 0.11 | 0.41 |
| | | | | | | | | |
| 1 | TS1-4 | 0.02 | 0.1 | 3.35 | 3.25 | 0.804 | 0.03 | 0.22 |
| 2 | TS1-5 | 0.03 | 0.1 | 2.17 | 1.17 | 0.792 | 0.02 | 0.22 |
| 3 | TS1-7 | 0.01 | 0.04 | 14.2 | 11.9 | 0.840 | 0.08 | 0.02 |
| 4 | TS1-8 | 0.01 | 0.04 | 19.6 | 19.6 | 0.840 | 0.14 | 0.04 |
| 5 | TS1-11 | 0.07 | 0.3 | 83 | 11 | 0.644 | 0.08 | 0.00 |
| 6 | TS1-12 | 0.35 | 1.4 | 144 | 10 | 0.595 | 0.04 | 0.00 |
| 7 | TS1-13 | 0.03 | 0.1 | 4.68 | 0.93 | 0.801 | 0.03 | 0.07 |
| 8 | TS1-14 | 0.03 | 0.1 | 7.9 | 1.9 | 0.816 | 0.05 | 0.04 |
| 9 | TS1-15 | 0.03 | 0.1 | 24.8 | 13.0 | 0.810 | 0.09 | 0.00 |
| 10 | TS1-16 | 0.01 | 0.1 | 61 | 54 | 0.730 | 0.12 | 0.00 |
| 11 | TS1-17 | 0.01 | 0.03 | 28.1 | 38.0 | 0.850 | 0.15 | 0.01 |
| 12 | TS1-19 | 0.02 | 0.1 | 26.0 | 13.7 | 0.730 | 0.11 | 0.01 |
| 13 | TS1-20 | 0.06 | 0.3 | 40.5 | 6.0 | 0.729 | 0.09 | 0.02 |
| 14 | TS1-22 | 0.23 | 0.9 | 37.1 | 3.3 | 0.733 | 0.03 | 0.04 |
| 15 | TS1-23 | 0.05 | 0.2 | 1.36 | 0.16 | 0.814 | 0.02 | 0.31 |
| 16 | TS1-24 | 0.24 | 1.0 | 16.2 | 0.7 | 0.762 | 0.02 | 0.03 |
| 17 | TS1-25 | 0.00 | 0.01 | 61 | 65 | 0.970 | 0.18 | 0.06 |
| 18 | TS1-27 | 0.15 | 0.6 | 50 | 3 | 0.699 | 0.06 | 0.01 |
| 19 | TS1-28 | 0.03 | 0.1 | 4.95 | 5.66 | 0.836 | 0.05 | 0.05 |
| 20 | TS1-29 | 0.02 | 0.1 | 25.4 | 17.9 | 0.774 | 0.10 | 0.01 |
| 21 | TS1-30 | 0.06 | 0.2 | 7.5 | 0.7 | 0.812 | 0.02 | 0.04 |
| 22 | TS1-31 | 0.02 | 0.1 | 2.36 | 1.29 | 0.821 | 0.04 | 0.43 |
| 23 | TS1-32 | 0.56 | 2.2 | 182 | 8 | 0.374 | 0.03 | 0.01 |
| 24 | TS1-33 | 0.14 | 0.6 | 10.0 | 0.7 | 0.803 | 0.03 | 0.06 |
| 25 | TS1-37 | 0.00 | 0.01 | 8.0 | 8.0 | 0.815 | 0.09 | 0.18 |
| 26 | TS1-38 | 0.01 | 0.04 | 11.6 | 18.0 | 0.767 | 0.03 | 0.49 |
| 27 | TS1-39 | 0.01 | 0.02 | 26.7 | 52.6 | 0.930 | 0.10 | 0.03 |
| 28 | TS1-40 | 0.05 | 0.2 | 59 | 10 | 0.638 | 0.06 | 0.00 |
| 29 | TS1-42 | 0.00 | 0.02 | 28.9 | 36.1 | 0.860 | 0.14 | 0.02 |
| 30 | TS1-43 | 0.06 | 0.2 | 11.6 | 1.9 | 0.830 | 0.04 | 0.12 |
| 31 | TS1-45 | 0.01 | 0.1 | 5.5 | 13.0 | 0.803 | 0.04 | 0.44 |
| 32 | TS1-48 | 0.06 | 0.2 | 4.23 | 0.51 | 0.792 | 0.02 | 0.07 |
| | | | | | | | | |
| 1 | TS2-1 | 0.14 | 0.6 | 63 | 4 | 0.524 | 0.03 | 0.00 |
| 2 | TS2-2 | 0.23 | 1.0 | 26.7 | 4.7 | 0.820 | 0.03 | 0.05 |
| 3 | TS2-3 | 0.08 | 0.3 | 52 | 8 | 0.844 | 0.07 | 0.01 |
| 4 | TS2-4 | 0.11 | 0.5 | 170 | 34 | 0.840 | 0.16 | 0.01 |
| 5 | TS2-5 | 0.16 | 0.7 | 238 | 36 | 0.590 | 0.11 | 0.00 |
| 6 | TS2-6 | 0.14 | 0.6 | 88 | 9 | 0.801 | 0.08 | 0.01 |
| 7 | TS2-7 | 0.05 | 0.2 | 4.81 | 0.68 | 0.820 | 0.03 | 0.08 |
| 8 | TS2-8 | 0.08 | 0.3 | 175 | 27 | 0.690 | 0.11 | 0.01 |

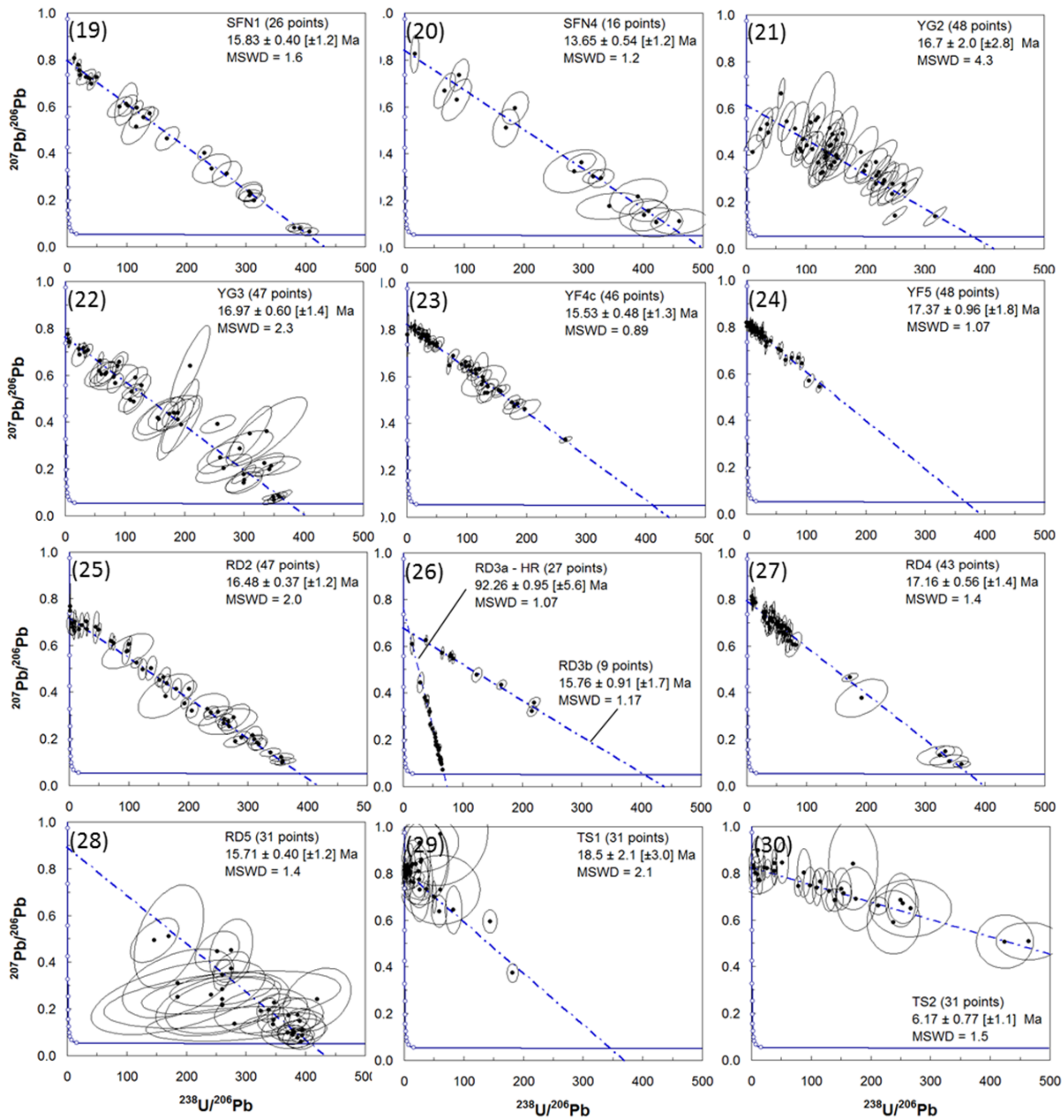
| # | Sample | U ppm | 238 mV | $^{238}U/^{206}Pb$ | 2s | $^{207}Pb/^{206}Pb$ | 2s | rho |
|---|---|---|---|---|---|---|---|---|
| 9 | TS2-14 | 0.01 | 0.1 | 6.1 | 8.3 | 0.803 | 0.06 | 0.17 |
| 10 | TS2-16 | 0.11 | 0.5 | 38.4 | 3.6 | 0.808 | 0.05 | 0.01 |
| 11 | TS2-18 | 0.12 | 0.5 | 10.2 | 1.6 | 0.794 | 0.03 | 0.13 |
| 12 | TS2-20 | 0.22 | 1.0 | 151 | 13 | 0.733 | 0.07 | 0.00 |
| 13 | TS2-21 | 0.21 | 0.9 | 139 | 12 | 0.685 | 0.04 | 0.00 |
| 14 | TS2-22 | 0.19 | 0.9 | 250 | 21 | 0.684 | 0.09 | 0.00 |
| 15 | TS2-24 | 0.23 | 1.0 | 292 | 33 | 0.447 | 0.05 | 0.00 |
| 16 | TS2-25 | 0.43 | 1.9 | 154 | 11 | 0.714 | 0.04 | 0.00 |
| 17 | TS2-26 | 0.08 | 0.4 | 21.5 | 1.6 | 0.823 | 0.04 | 0.02 |
| 18 | TS2-27 | 0.12 | 0.6 | 78 | 5 | 0.744 | 0.04 | 0.00 |
| 19 | TS2-28 | 0.22 | 1.0 | 424 | 39 | 0.507 | 0.09 | 0.00 |
| 20 | TS2-29 | 0.17 | 0.7 | 116 | 10 | 0.764 | 0.05 | 0.00 |
| 21 | TS2-30 | 0.35 | 1.5 | 571 | 36 | 0.377 | 0.06 | 0.02 |
| 22 | TS2-31 | 0.14 | 0.6 | 254 | 21 | 0.671 | 0.07 | 0.00 |
| 23 | TS2-32 | 0.28 | 1.2 | 464 | 44 | 0.509 | 0.06 | 0.00 |
| 24 | TS2-33 | 0.02 | 0.1 | 10.9 | 8.1 | 0.898 | 0.04 | 0.04 |
| 25 | TS2-34 | 0.08 | 0.4 | 38.1 | 3.0 | 0.843 | 0.05 | 0.01 |
| 26 | TS2-35 | 0.37 | 1.6 | 213 | 13 | 0.661 | 0.03 | 0.00 |
| 27 | TS2-36 | 0.17 | 0.7 | 98 | 9 | 0.748 | 0.06 | 0.01 |
| 28 | TS2-37 | 0.01 | 0.1 | 4.16 | 6.49 | 0.833 | 0.06 | 0.04 |
| 29 | TS2-38 | 0.00 | 0.0 | 13.0 | 22.7 | 0.771 | 0.05 | 0.12 |
| 30 | TS2-45 | 0.23 | 0.9 | 267 | 56 | 0.650 | 0.10 | 0.00 |
| 31 | TS2-46 | 0.24 | 1.0 | 110 | 6 | 0.738 | 0.06 | 0.01 |
| 32 | TS2-47 | 0.12 | 0.5 | 130 | 10 | 0.724 | 0.07 | 0.00 |
| 33 | TS2-48 | 0.04 | 0.2 | 13.7 | 3.8 | 0.768 | 0.05 | 0.02 |

**Fig. 3.** U-Pb ages of fault-related calcite samples from the Dead Sea Transform. Tera--Wasserburg concordia curves (also called "semi-total Pb-U isochron") are plotted in blue with white dots. Measured $^{238}U/^{206}Pb$ and $^{207}Pb/^{206}Pb$ ratios of spot analyses (25 to 48 for each sample) are plotted with black dots and error ellipses (2σ). Blue dotted lines that intercept the concordia plot represent a mixing line between a common-lead (top intercept) and radiogenic-lead (lower intercept) end-members. For comparison, all plots are shown with the same X-Y axis ranges. Lower intercept ages are calculated with the ISOPLOT program and range from 56.6 to 6.17 Ma. MSWD are ≤3.0, except for samples GF1a, GF3b and YG2. Samples numbers on TW plots correspond to data in Table 1.





(7) GF1a (26 points) 18.6 ± 2.3 [±3.2] Ma MSWD = 11.2
(8) GF2 (26 points) 20.08 ± 0.82 [±1.8] Ma MSWD = 2.9
(9) GF3b (26 points) 18.46 ± 0.92 [±1.8] Ma MSWD = 11.1
(10) GFS1 (48 points) 14.04 ± 0.59 [±1.3] Ma MSWD = 0.92
(11) GFS2 (48 points) 17.68 ± 0.54 [±1.4] Ma MSWD = 2.3
(12) GFS2c (48 points) 17.76 ± 0.66 [±1.5] Ma MSWD = 1.04
(13) GFS3a (26 points) 18.05 ± 0.69 [±1.6] Ma MSWD = 0.78
(14) GFS4 (48 points) 18.98 ± 0.67 [±1.6] Ma MSWD = 2.8
(15) GFS5 (43 points) 13.05 ± 0.18 [±0.9] Ma MSWD = 2.5
(16) GFS5b (48 points) 13.11 ± 0.17 [±0.8] Ma MSWD = 1.5
(17) GFS6 (32 points) 16.74 ± 0.91 [±1.7] Ma MSWD = 2.1
(18) GFS7 (45 points) 20.8 ± 2.3 [±3.3] Ma MSWD = 3.0
207Pb/206Pb
238U/206Pb



(19)
SFN1 (26 points)
15.83 ± 0.40 [±1.2] Ma
MSWD = 1.6
(20)
SFN4 (16 points)
13.65 ± 0.54 [±1.2] Ma
MSWD = 1.2
(21)
YG2 (48 points)
16.7 ± 2.0 [±2.8] Ma
MSWD = 4.3
(22)
YG3 (47 points)
16.97 ± 0.60 [±1.4] Ma
MSWD = 2.3
(23)
YF4c (46 points)
15.53 ± 0.48 [±1.3] Ma
MSWD = 0.89
(24)
YF5 (48 points)
17.37 ± 0.96 [±1.8] Ma
MSWD = 1.07
(25)
RD2 (47 points)
16.48 ± 0.37 [±1.2] Ma
MSWD = 2.0
(26)
RD3a - HR (27 points)
92.26 ± 0.95 [±5.6] Ma
MSWD = 1.07
RD3b (9 points)
15.76 ± 0.91 [±1.7] Ma
MSWD = 1.17
(27)
RD4 (43 points)
17.16 ± 0.56 [±1.4] Ma
MSWD = 1.4
(28)
RD5 (31 points)
15.71 ± 0.40 [±1.2] Ma
MSWD = 1.4
(29)
TS1 (31 points)
18.5 ± 2.1 [±3.0] Ma
MSWD = 2.1
(30)
TS2 (31 points)
6.17 ± 0.77 [±1.1] Ma
MSWD = 1.5
207Pb/206Pb
238U/206Pb

## References

Coogan, L. A., Parrish, R. R., and Roberts, N. M., 2016, Early hydrothermal carbon uptake by the upper oceanic crust: Insight from in situ U-Pb dating: Geology, v. 44, no. 2, p. 147-150.

Hill, C. A., Polyak, V. J., Asmerom, Y., and Provencio, P. P., 2016, Constraints on a Late Cretaceous uplift, denudation, and incision of the Grand Canyon region, southwestern Colorado Plateau, USA, from U-Pb dating of lacustrine limestone: Tectonics, v. 35, p. 896-906.

Kylander-Clark, A. R. C., Hacker, B. R., and Cottle, J. M., 2013, Laser-ablation split-stream ICP petrochronology: Chemical Geology, v. 345, p. 99-112.

Li, Q., Parrish, R., Horstwood, M., and McArthur, J., 2014, U–Pb dating of cements in Mesozoic ammonites: Chemical Geology, v. 376, p. 76-83.

Mason, A. J., Henderson, G. M., and Vaks, A., 2013, An Acetic Acid-Based Extraction Protocol for the Recovery of U, Th and Pb from Calcium Carbonates for U-(Th)-Pb Geochronology: Geostandards and Geoanalytical Research, v. 37, no. 3, p. 261-275.

Paton, C., Woodhead, J. D., Hellstrom, J. C., Hergt, J. M., Greig, A., and Maas, R., 2010, Improved laser ablation U-Pb zircon geochronology through robust downhole fractionation correction: Geochemistry, Geophysics, Geosystems, v. 11, no. 3.

Ring, U., and Gerdes, A., 2016, Kinematics of the Alpenrhein-Bodensee graben system in the Central Alps: Oligocene/Miocene transtension due to formation of the Western Alps arc: Tectonics, v. 35, p. 1367-1391.

Roberts, N. M., and Walker, R. J., 2016, U-Pb geochronology of calcite-mineralized faults: Absolute timing of rift-related fault events on the northeast Atlantic margin: Geology, p. G37868. 37861.

Vaks, A., Woodhead, J., Bar-Matthews, M., Ayalon, A., Cliff, R. A., Zilberman, T., Matthews, A., and Frumkin, A., 2013, Pliocene–Pleistocene climate of the northern margin of Saharan–Arabian Desert recorded in speleothems from the Negev Desert, Israel: Earth and Planetary Science Letters, v. 368, no. 0, p. 88-100.

Woodhead, J. D., and Hergt, J. M., 2001, Strontium, neodymium and lead isotope analyses of NIST glass certified reference materials: SRM 610, 612, 614: Geostandards Newsletter, v. 25, no. 2-3, p. 261-266.

**DR3: Calcite twin strain analysis methodology and results**

The calcite strain-gage technique (CSGT) of Groshong (1972) (Groshong, 1972) allows for the investigation of intraplate stresses as constrained by intracrystalline mechanical twinning in rock-forming calcite grains. Although the result is actually a strain tensor, a similar orientation of the stress tensor appears likely in cases of coaxial deformation (Turner, 1953, 1962). The CSGT has been used to constrain strain tensor directions in veins (Kilsdonk and Wiltschko, 1988), limestones (Engelder, 1979; Spang and Groshong, 1981; Wiltschko et al., 1985; Craddock and van der Pluijm, 1988; Mosar, 1989; Ferrill, 1991; Craddock et al., 2000), marble (Craddock et al., 1991; Craddock and Craddock, 2012), amygdaloidal basalts (Craddock and Pearson, 1994; Craddock et al., 1997; Craddock et al., 2004), and lamprophryes (Craddock et al., 2007b).

Under temperatures of ca. 200 °C intracrystalline deformation of calcite results in the formation of e-twins. The formation of calcite e-twins requires a shear stress exceeding ca. 10 MPa (Wenk et al., 1987; Burkhard, 1993; Lacombe and Laurent, 1996; Ferrill, 1998). Calcite offers three glide systems for e-twinning. From U-stage measurements of width, frequency and orientation of twins, and the crystallographic orientation of the host crystals, a strain tensor can be calculated using a least-squares technique (Groshong, 1972). In order to remove "noise" from the dataset, a refinement of the calculated strain tensor can be achieved by stripping 20% of the twins with the highest deviations (Groshong et al., 1984). This procedure has been used if the number of measured grains was large ($n > 20$). In cases where the data appear to be inhomogeneous, the separation of incompatible twins ("NEV"=negative expected values) from compatible twins ("POS"=positive expected values) of the initial dataset allows separate calculation of two or more least-squares deviatoric strain tensors. Thus, the CSGT can be used to obtain information on superimposed deformations (Groshong, 1972, 1974) and differential stress magnitudes (Rowe and Rutter, 1990).

The validity of this stripping procedure was demonstrated in experimental tests where the reliability depends on the overall complexity of deformation and the number of grains with twins (Groshong, 1974; Teufel, 1980). The stripping procedure was used in cases of high proportions of NEV and a large number of measured grains. An experimental re-evaluation of the CSGT has shown that measurements of about 50 grains on one thin-section or 25 grains on two mutually perpendicular thin-sections yield the best results (Groshong et al., 1984; Evans and Groshong, 1994; Ferrill et al., 2004). The chance to extract the records of more than two deformations from one dataset is limited when dealing with natural rocks (Burkhard, 1993). Individual analyses of veins, matrix, nodules, *etc*. allow the acquisition of several strain tensors without applying statistical data stripping. The complexity of rotational strains in fault zones has limited the application of this method (Gray et al., 2005). Application of the CSGT requires the following assumptions to be valid: (1) low temperatures (dominance of Type I and Type II twins), (2) random c-axis orientations of calcite, (3) homogenous strain, (4) coaxial deformation, (5) volume constancy, (6) low porosity materials and (7) low strain (<15%). If these conditions are not fully met, the underlying dataset of the calculated strain tensor could be biased, modified or random. Strain tensors were calculated from calcite e-twin datasets using the software package of Evans and Groshong (1994)(Evans and Groshong, 1994). Note that the calculated $\varepsilon 2$ and $\varepsilon 3$ tensors can be switched if they are very similar in magnitude and are the results of the 3D volume constancy assumption.

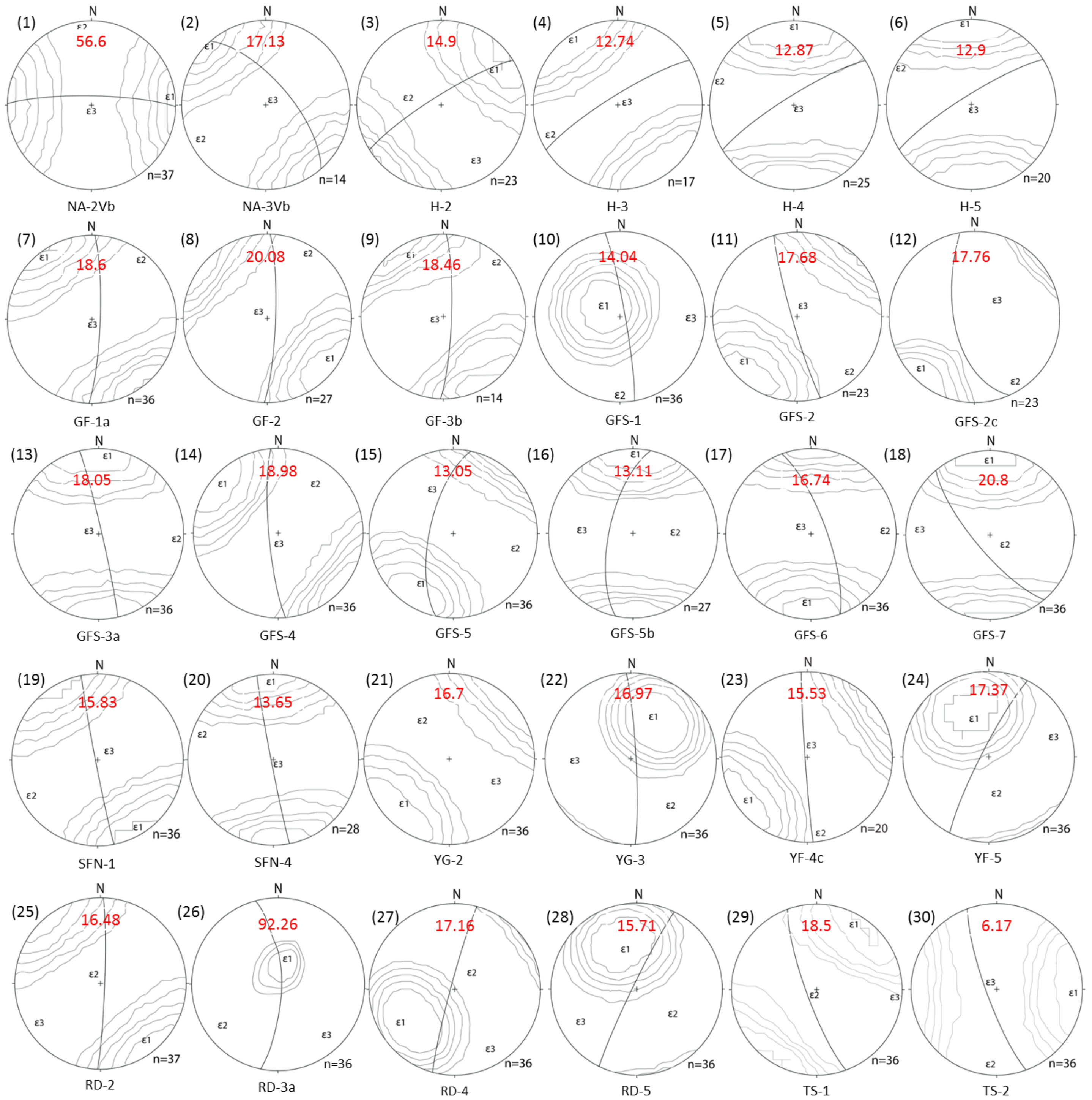



**Figure 1.** Calcite twins strain analyses of fault-related calcites from the DST. Lower hemisphere stereplots include contours of maximum shortening strain axis ($\varepsilon_1$). Great circles represent fault orientations. Number of analysed grains are given in parenthesis (usually n=36). Numbers in red are the U-Pb ages in Ma for the same calcite-twins phases. Numbers at top left correspond to data in Table 1.

| # | Sample | Grains (n=) | NEV (%) | ε1 | ε1 (%) | ε2 | ε2 (%) | ε3 | ε3 (%) | Twins/mm | Ds (bars) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Newe Ativ (NA)** | | | | | | | | | | | |
| 1 | NA-V2b | 37 | 13 | 87°, 4° | -1.4 | 352°, 4° | -0.8 | 218°, 83° | 2.2 | 312 | -375 |
| 2 | NA-V3b | 14 | 0 | 328°, 2° | -1.3 | 257°, 11° | -0.4 | 138°, 87° | 1.65 | 311 | -374 |
| **Guvta Fault (H)** | | | | | | | | | | | |
| 3 | H2 | 23 | 4 | 37°, 24° | -1 | 251°, 38° | -0.3 | 141°, 4° | 1.3 | 282 | -367 |
| 4 | H3 | 17 | 17 | 321°, 6° | -2.4 | 224°, 2° | -1.1 | 118°, 83° | 3.5 | 263 | -362 |
| 5 | H4 | 25 | 8 | 1°, 2° | -3.3 | 286°, 4° | -1.7 | 149°, 86° | 5 | 299 | -371 |
| 6 | H5 | 20 | 15 | 0°, 3° | -1.2 | 321°, 3° | -0.2 | 157°, 88° | 1.4 | 280 | -366 |
| **Gishron Fault (GF)** | | | | | | | | | | | |
| 7 | GF-1a | 36 | 0 | 308°, 9° | -1.3 | 21°, 5° | -0.4 | 171°, 84° | 1.7 | 322 | -377 |
| 8 | GF-2 | 27 | 11 | 188°, 17° | -2.3 | 30°, 8° | -0.9 | 249°, 87° | 3.2 | 249 | -358 |
| 9 | GF-3b | 14 | 21 | 339°, 18° | -1.3 | 47°, 21° | -0.5 | 187°, 82° | 1.8 | 243 | -356 |
| 10 | GFS-1 | 36 | 8 | 312°, 56° | -6.1 | 172°, 8° | -5.7 | 88°, 2° | 12 | 337 | -380 |
| 11 | GFS-2 | 36 | 19 | 3°, 6° | -1.8 | 287°, 2° | -1.1 | 149°, 86° | 2.9 | 361 | -385 |
| 12 | GFS-2c | 28 | 7 | 1°, 1° | -1.2 | 271°, 3° | -0.6 | 139°, 86° | 1.8 | 228 | -351 |
| 13 | GFS-3a | 36 | 19 | 3°, 6° | -1.8 | 287°, 2° | -1.1 | 149°, 86° | 2.9 | 361 | -385 |
| 14 | GFS-4 | 36 | 5 | 317°, 7° | -3 | 56°, 19° | -0.3 | 181°, 71° | 3.3 | 660 | -430 |
| 15 | GFS-5 | 24 | 0 | 83°, 9° | -2.8 | 179°, 5° | -2.5 | 334°, 82° | 5.3 | 194 | -339 |
| 16 | GFS5b | 27 | 0 | 358°, 4° | -1.1 | 94°, 46° | -0.1 | 271°, 43° | 1.2 | 362 | -386 |
| 17 | GFS-6 | 36 | 8 | 179°, 6° | -5 | 93°, 1° | -4.3 | 301°, 84° | 9.3 | 301 | -372 |
| 18 | GFS-7 | 36 | 16 | 1°, 12° | -1.6 | 123°, 63° | 0.5 | 272°, 14° | 1.1 | 505 | -410 |
| **Shelomo Fault (SF)** | | | | | | | | | | | |
| 19 | SFN-1 | 36 | 2 | 171°, 6° | -1.45 | 257°, 3° | -1.1 | 82°, 88° | 2.52 | 285 | -368 |
| 20 | SFN-4 | 28 | 7 | 4°, 5° | -0.46 | 314°, 7° | -0.1 | 186°, 86° | 0.5 | 206 | -344 |
| **Yotam Graben (YG)** | | | | | | | | | | | |
| 21 | YG-2 | 36 | 13 | 227°, 14° | -4.2 | 331°, 44° | -3.6 | 122°, 11° | 7.8 | 296 | -371 |
| 22 | YG-3 | 36 | 7 | 36°, 51° | -4.2 | 164°, 1° | -3.6 | 268°, 9° | 7.8 | 353 | -384 |
| **Yehoshafat Fault (YF)** | | | | | | | | | | | |
| 23 | YF-4c | 20 | 25 | 241°, 9° | -1.3 | 162°, 6° | -1 | 38°, 84° | 2.3 | 171 | -330 |
| 24 | YF-5 | 36 | 5 | 334°, 39° | -2.3 | 187°, 31° | -2.1 | 87°, 12° | 4.3 | 234 | -353 |
| **Roded Fault (RD)** | | | | | | | | | | | |
| 25 | RD-2 | 37 | 11 | 162°, 8° | -1 | 338°, 84° | -0.4 | 243°, 6° | 1.4 | 241 | -355 |
| 26 | RD-3a<br>RD-3b | 36 | 10 | 34°, 68° | -2.3 | 241°, 14° | -1.7 | 147°, 18° | 4 | 259 | -361 |
| 27 | RD-4 | 36 | 8 | 227°, 26° | -3.1 | 53°, 61° | -2 | 146°, 3° | 5 | 347 | -382 |
| 28 | RD-5 | 36 | 16 | 322°, 47° | -3.1 | 145°, 26° | -2.5 | 225°, 14° | 5.6 | 262 | -362 |
| **Tsfahot Fault (TS)** | | | | | | | | | | | |
| 29 | TS-1 | 36 | 13 | 36°, 9° | -1.2 | 222°, 85° | -1.1 | 101°, 2° | 2.3 | 360 | -385 |
| 30 | TS-2 | 36 | 13 | 94°, 2° | -1.8 | 181°, 3° | 0.3 | 321°, 84° | 1.5 | 470 | -405 |

**Table 1.** Calcite twins strain analyses of fault-related calcites from the DST. NEV% is the percentage of negative expected values (grains that are excluded). Numbers correspond to data in Table 1.

## References


Burkhard, M., 1993, Calcite twins, their geometry, appearance and significance as stress-strain markers and indicators of tectonic regime: a review: Journal of Structural Geology, v. 15, no. 3-5, p. 351-368.

Craddock, J. P., Anziano, J., Wirth, K. R., Vervoort, J. D., Singer, B., and Zhang, X., 2007b, Structure, geochemistry and geochronology of a lamprophyre dike swarm, Archean Wawa terrane, Michigan, USA: Precambrian Research, v. 157, p. 50-70.

Craddock, J. P., Farris, D., and Roberson, A., 2004, Calcite-twinning constraints on stress-strain fields along the Mid-Atlantic Ridge,Iceland: Geology v. 32, p. 49-52.

Craddock, J. P., Moshoian, A., and Pearson, A. M., 1991, Kinematic analysis from twinned calcite strains in the marble mylonites of the central Grenville province, Canada.: Geological Society of America, Abstract, v. 15, p. 236.

Craddock, J. P., Neilson, K. J., and Malone, D. H., 2000, Calcite twinning strain constraints on Heart Mountain detachment kinematics, Wyoming: Journal of Structural Geology, v. 22, p. 983-991.

Craddock, J. P., and Pearson, A., 1994, Non-coaxial horizontal shortening strains preserved in amygdule calcite, DSDP Hole 433C, Suiko Seamount.: Journal of Structural Geology, v. 16, no. 719-724.

Craddock, J. P., Pearson, A., McGovern, M., Kropf, E. P., and Moshoian, A., 1997, Post-extension shortening strains preserved in calcites of the Keweenawan rift: Middle Proterozoic to Cambrian Rifting, Central North America, *in* Donnelly, K., Ojakgangas, R. W., Dickas, A. B., and Green, J. C., eds., Geological Society of America Special Paper, Volume 213, p. 115-126.

Craddock, J. P., and van der Pluijm, B., 1988, Kinematic analysis of an en echelon-continuous vein complex: Journal of Structural Geology v. 10, no. 445-452.

Craddock, S. D., and Craddock, J. P., 2012, Strain Variations in Carbonates across the Proterozoic Grenville Orogen: 58th ILSG (Thunder Bay), p. 21.

Engelder, T., 1979, The nature of deformation within the outer limits of the central Appalachian foreland fold-and-thrust belt in New York state: Tectonophysics v. 55, p. 289-310.

Evans, M. A., and Groshong, R. H., 1994, A Computer Program for the Calcite Strain-Gage Technique: Journal of Structural Geology, v. 16, no. 2, p. 277-281.

Ferrill, D. A., 1991, Calcite twin widths and intensities as metamorphic indicators in natural low-temperature deformation of limestone: Journal of Structural Geology, v. 13, p. 675-677.

-, 1998, Critical re-evaluation of differential stress estimates from calcite twins in coarse-grained limestone: Tectonophysics v. 285, p. 77–86.

Ferrill, D. A., Morris, A. P., Evans, M. A., Burkhard, M., Groshong Jr, R. H., and Onasch, C. M., 2004, Calcite twin morphology: a low-temperature deformation geothermometer: Journal of Structural Geology, v. 26, no. 8, p. 1521-1529.

Gray, M. B., Stamatakos, J. A., Ferrill, D. A., and Evans, M. A., 2005, Fault-Zone Deformation in Welded Tuffs at Yucca Mountain, Nevada, USA: Journal of Structural Geology, v. 27, no. 10, p. 1873-1891.

Groshong, R. H. J., 1972, Strain calculated from twinning in calcite: Bull. geol. Soc. Am. , v. 83, p. 2025-2038.

-, 1974, Experimental test of least-squares strain calculations using twinned calcite: Bull. Geol. Soc. Am. , v. 85, p. 1855-1864.

Groshong, R. H. J., Teufel, L. W., and Gasteiger, C. M., 1984, Precision and accuracy of the calcite strain-gage technique: Bull. Geol. Soc. Am. , v. 95, p. 357–363.

Kilsdonk, W., and Wiltschko, D. V., 1988, Deformation mechanisms in the southeastern ramp region of the Pine Mountain block, Tennessee: Geological Society of America Bulletin - Seismological Society of America, v. 100, p. 644-653.

Lacombe, O., and Laurent, P., 1996, Determination of deviatoric stress tensors based on inversion of calcite twin data from experimentally deformed monophase samples: preliminary results: Tectonophysics, v. 255, p. 189–202.

Mosar, J., 1989, Internal deformation in the Prealpes Medianes, Switzerland: Ecologae Geologicae Helvetiae, v. 82, p. 765–793.

Rowe, K. J., and Rutter, E. H., 1990, Paleostress estimation using calcite twinning: experimental calibration and application to nature: Journal of Structural Geology, v. 12, p. 1-17.

Spang, J. H., and Groshong, R. H. J., 1981, Deformation mechanisms and strain history of a minor fold from the Appalachian Valley and Ridge Province: Tectonophysics v. 72, p. 323-342.

Teufel, L. W., 1980, Strain analysis of experimental superposed deformation using calcite twin lamellae: Tectonophysics v. 65, p. 291–309.

Turner, F. J., 1953, Nature and dynamic interpretation of deformation lamellae in calcite of three marbles: American Journal of Science, v. 251, p. 276–298.

-, 1962, Compression and tension axes deduced from (0112) Twinning in calcite: J Geophys Res., v. 67, p. 1660.

Wenk, H.-R., Takeshita, T., Bechler, E., Erskine, B. G., and Matthies, S., 1987, Pure Shear and Simple Shear Calcite Textures. Comparison of Experimental, Theoretical and Natural Data: Journal of Structural Geology, v. 9, no. 5, p. 731-745.

Wiltschko, D. V., Medwedeff, D. A., and Millson, H. E., 1985, Distribution and mechanisms of strain within rocks on the northwest ramp of Pine Mountain block, southern Appalachian foreland: a field test of theory: Geological Society of America Bulletin v. 96, p. 426–435.