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Supplemental Material

Table S1. U-Pb zircon CA-TIMS data

Table S2. U-Pb zircon LA-ICP-MS data

Figure S1. Terra-Wassenberg plots for detrital zircon samples ANT66, ANT113, ANT222 and ANT290.

Figure S2. Concordia plots of CA-ID-TIMS analyses presented in this study.

Figure S3. Outcrop photographs of volcanic ash samples from the Aranos and Karasburg basins.

DATA SUPPLEMENT

U-Pb zircon CA-TIMS Analysis

Single zircon crystal U-Pb analysis was completed at the Berkeley Geochronology Center between 2018 and 2019. Zircon crystals were isolated from volcanic rocks using standard mineral separation techniques. Euhedral crystals were handpicked under a light microscope and optically inspected for cores using polarized light. Isolated zircons were thermally annealed at 900 °C for 48 h. Annealed crystals were then chemically abraded in HF with trace amounts of HNO₃ for 16 h in pressurized dissolution capsules (Mattinson, 2005). Chemically abraded zircons were transferred to 3ml vials and ultrasonicated in aqua regia for two hours and then rinsed three times with concentrated HNO₃. Clean, individual zircon crystals were transferred to modified PTFE capsules, spiked with the ²⁰⁵Pb-²³³U-²³⁵U EarthTime 535 tracer solution and dissolved by vapor transfer with HF in a Parr dissolution vessel for 6 days. Capsules containing dissolved and equilibrated zircon and spike were diluted in ~15 µl of 6 M HCl and ~15 µl 0.035 M H₃PO₄ and then dried onto an outgassed Re-filament with silica gel as emitter substance. Isotopes ratios were measured on a Sector 54 Mass spectrometer using a Daly-type ion counter that is situated behind a WARP filter. Pb as (Pb⁺) and U as (UO²⁺) were run on the same filament. Repeat measurements of the total procedural blank averaged 0.82 ± 0.36 pg Pb (U blanks were indistinguishable from zero), with $^{206}\text{Pb}/^{204}\text{Pb} = 18.40 \pm 0.46$, $^{207}\text{Pb}/^{204}\text{Pb} = 15.64 \pm 0.25$, $^{208}\text{Pb}/^{204}\text{Pb} = 38.04 \pm 0.75$ (all 2σ of population), and a $^{206}\text{Pb}/^{204}\text{Pb}$ - $^{207}\text{Pb}/^{204}\text{Pb}$ correlation of +0.47 (ratios and uncertainties were propagated into the age and age-error calculations). Deficient radiogenic ²⁰⁶Pb in zircon due to initial deficit of ²³⁰Th is accounted for by assuming a partition coefficient ratio DTh/DU of 0.2 (as applied in Wotzlaw et al., 2014). Mass fractionation of U during analysis was controlled by the U double spike, whereas Pb mass fractionation was corrected by $0.15 \pm 0.6\%/\text{AMU}$ (based on multiple analyses of NBS 981). Data reduction was completed offline using Tripoli and ET Redux (Bowring et al., 2011) as well as Isoplot (Ludwig 2008)

U-Pb detrital zircon analysis

Measurements were made on a Thermo Element XR *HR-ICPMS* with typical ablation times of 30 s per sample, followed by 10 seconds of background before and after ablation. Zircons were measured in situ and introduced to the Element using a 193 nm excimer laser (Photon Machines Analyte 193H). Data was reduced offline using Iolite and further corrected for common Pb using Anderson excel macros (Andersen, 2002). Concordance of zircons was checked using *Isoplot 4.1* (Ludwig, 2008). Zircon standard 91500 was used to correct for instrumental drift and down-hole fractionation. A standard bracketing approach of two 91500 ablations, followed by five unknowns, was employed. In addition to bracketing standards, GJ-1, Temora and Plesovic were used as check standards, with ages ranging from 337 Ma to 1.1 Ga, were measured in order to assess the correction for down-hole fractionation and instrumental drift. Experimental setup and data collection followed protocols of Yin et al. (2012). Analytical uncertainties were calculated in quadrature taking into account precision from individual analyses and propagated through the analytical session using *Iolite* (Paton, 2011). Reduced data is presented in the form of Kernel Density Estimates plotted in *density plotter* using an adaptive bandwidth for individual data sets (cf. Vermeesch, 2012; Vermeesch et al., 2016).

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Table S1. U-Pb zircon CA-TIMS data

Sample	Pbc (pg) ^a	Th/ U b	$^{206}\text{Pb}/$ ^{204}Pb c	$^{207}\text{Pb}/$ $<\text{Th}>_{\text{d,e}}$	$\pm 2\sigma$ %	$^{207}\text{Pb}/$ ^{235}U d	$\pm 2\sigma$ %	$^{206}\text{Pb}/$ ^{238}U	$<\text{Th}>_{\text{d,e}}$	$\pm 2\sigma$ %	Corr. coef.	$^{206}\text{Pb}/$ ^{238}U	$\pm 2\sigma$ %	
GS.1														
z03	1.9	1.19	606	0.05252	1.01	0.3515	1.39	0.048562	0.88	0.68	305.69	2.64		
z24	1.4	1.13	405	0.05254	1.37	0.3510	1.45	0.048483	0.19	0.46	305.20	0.58		
z25	1.4	1.38	462	0.05237	1.22	0.3462	1.28	0.047964	0.20	0.39	302.01	0.59		
z08	1.8	0.98	693	0.05246	0.97	0.3460	1.06	0.047857	0.24	0.46	301.35	0.71		
z06	1.5	0.94	531	0.05261	1.19	0.3469	1.29	0.047841	0.28	0.46	301.25	0.83		
z23	1.4	1.28	205	0.05313	2.64	0.3496	2.77	0.047738	0.30	0.49	300.62	0.89		
z26	1.5	1.60	289	0.05253	1.89	0.3444	2.00	0.047568	0.27	0.45	299.57	0.78		
z22	1.7	1.42	381	0.05257	1.47	0.3446	1.55	0.047566	0.23	0.40	299.56	0.69		
z05	2.2	1.23	298	0.05217	1.80	0.3417	1.90	0.047528	0.24	0.47	299.33	0.69		
z07	1.4	1.10	401	0.05229	1.40	0.3419	1.50	0.047442	0.25	0.49	298.80	0.72		
ZWFUN.1														
z03	0.5	1.17	1623	0.05241	0.52	0.3639	0.58	0.050388	0.16	0.48	316.91	0.50		
z02	0.9	0.74	2879	0.05231	0.36	0.3599	0.65	0.049930	0.52	0.83	314.09	1.59		
z25	3.8	1.00	210	0.05245	2.47	0.3598	2.60	0.049766	0.28	0.48	313.09	0.85		
z05	0.5	0.96	2684	0.05223	0.27	0.3536	0.35	0.049122	0.16	0.65	309.13	0.48		
z04	0.5	1.07	2111	0.05226	0.36	0.3511	0.41	0.048744	0.11	0.58	306.81	0.33		
z07	2.5	1.22	667	0.05263	0.77	0.3526	1.01	0.048619	0.59	0.65	306.03	1.78		
z06	0.7	0.98	2249	0.05234	0.30	0.3498	0.40	0.048486	0.19	0.67	305.22	0.55		
z01	4.1	0.92	533	0.05222	1.03	0.3485	1.12	0.048419	0.32	0.43	304.81	0.94		
z09	0.6	0.92	4033	0.05232	0.18	0.3473	0.25	0.048159	0.13	0.73	303.21	0.38		
z08	1.0	1.20	1141	0.05243	0.51	0.3469	0.56	0.047999	0.15	0.49	302.23	0.44		
z27	2.6	0.99	891	0.05220	0.69	0.3444	0.75	0.047875	0.17	0.45	301.47	0.51		
z11	0.9	0.86	2507	0.05215	0.30	0.3439	0.35	0.047844	0.13	0.56	301.27	0.38		
z10	0.7	1.19	1108	0.05241	0.63	0.3454	0.72	0.047816	0.20	0.53	301.10	0.59		
z12	0.6	1.10	2334	0.05243	0.29	0.3452	0.38	0.047766	0.21	0.65	300.79	0.62		
z26	2.8	1.07	246	0.05313	2.15	0.3491	2.26	0.047684	0.25	0.49	300.28	0.75		
z21	4.4	1.17	282	0.05320	1.76	0.3495	1.86	0.047670	0.22	0.47	300.20	0.63		
z22	2.6	1.04	667	0.05272	0.75	0.3396	0.80	0.046741	0.15	0.44	294.48	0.42		
z23	3.8	1.33	210	0.05292	2.52	0.3377	2.65	0.046304	0.30	0.49	291.79	0.86		
z24	3.3	1.15	480	0.05266	1.14	0.3239	1.22	0.044623	0.17	0.51	281.42	0.46		
ZWFUN.2														
z05	2.8	1.22	223	0.05182	2.39	0.3440	2.52	0.048159	0.27	0.50	303.21	0.79		
z13	4.0	0.93	112	0.05296	5.08	0.3502	5.31	0.047989	0.53	0.49	302.16	1.56		
z10	1.9	0.86	1129	0.05212	0.63	0.3438	0.70	0.047853	0.23	0.45	301.33	0.67		
z08	1.8	0.93	713	0.05182	0.94	0.3413	1.10	0.047798	0.25	0.68	300.99	0.74		
z14	2.9	1.04	259	0.05339	2.36	0.3513	2.48	0.047737	0.32	0.41	300.61	0.94		
z11	1.9	1.03	769	0.05227	0.67	0.3436	0.73	0.047698	0.16	0.49	300.37	0.47		
z15	2.0	0.73	545	0.05262	0.96	0.3458	1.02	0.047688	0.16	0.44	300.31	0.48		
z09	1.6	0.99	547	0.05244	0.94	0.3445	1.00	0.047660	0.17	0.44	300.14	0.49		
z06	2.0	0.83	467	0.05224	1.12	0.3431	1.19	0.047655	0.17	0.47	300.11	0.49		
z01	1.4	1.09	698	0.05207	0.76	0.3419	0.82	0.047641	0.16	0.45	300.02	0.46		
z07	3.0	0.96	376	0.05187	1.44	0.3402	1.52	0.047587	0.21	0.42	299.69	0.63		
z03	2.1	0.90	811	0.05199	0.66	0.3407	0.72	0.047554	0.13	0.50	299.48	0.39		
z12	3.3	0.74	295	0.05240	1.78	0.3434	1.88	0.047552	0.21	0.50	299.48	0.63		
z04	1.1	0.83	1069	0.05199	0.61	0.3404	0.66	0.047502	0.15	0.44	299.16	0.43		
OG-09														
z07	1.1	0.47	924	0.05648	0.61	0.6041	0.66	0.077603	0.17	0.45	481.80	0.80		
z17	0.4	0.54	7032	0.05650	0.14	0.5866	0.24	0.075330	0.17	0.82	468.19	0.77		
z26	0.5	0.67	2404	0.05537	0.74	0.5061	0.92	0.066314	0.36	0.64	413.91	1.43		
z02	1.6	1.87	972	0.05236	0.57	0.3662	0.62	0.050742	0.16	0.45	319.08	0.48		
z09	1.8	1.07	1362	0.05224	0.42	0.3649	0.49	0.050675	0.20	0.52	318.66	0.63		
z10	1.7	1.50	594	0.05243	0.97	0.3622	1.07	0.050118	0.38	0.41	315.25	1.17		
z21	0.5	1.37	1676	0.05288	0.41	0.3533	0.51	0.048485	0.25	0.61	305.21	0.74		
z11	2.9	1.68	322	0.05246	1.82	0.3488	1.95	0.048239	0.44	0.40	303.70	1.30		
z06	1.4	1.31	1401	0.05231	0.43	0.3466	0.53	0.048084	0.22	0.59	302.75	0.65		
z01	1.4	1.62	1517	0.05230	0.46	0.3431	0.51	0.047598	0.15	0.44	299.76	0.43		
z05	1.0	1.92	1712	0.05241	0.43	0.3430	0.48	0.047486	0.14	0.45	299.07	0.42		
z22	0.8	0.86	2122	0.05236	0.32	0.3412	0.57	0.047283	0.45	0.83	297.82	1.32		
z27	0.6	1.62	736	0.05231	0.97	0.3408	1.13	0.047273	0.49	0.51	297.76	1.43		
z18	0.6	1.49	760	0.05194	0.84	0.3378	0.91	0.047190	0.23	0.46	297.25	0.66		
z13	1.8	1.31	259	0.05248	2.18	0.3412	2.30	0.047176	0.31	0.46	297.16	0.90		
z12	2.0	0.94	281	0.05267	1.91	0.3423	2.01	0.047148	0.25	0.47	296.99	0.71		
z15	0.4	1.56	2711	0.05210	0.32	0.3384	0.36	0.047133	0.12	0.50	296.90	0.34		
z28	0.5	1.01	1875	0.05234	0.37	0.3397	0.44	0.047094	0.20	0.55	296.66	0.59		
z08	1.5	1.45	788	0.05224	0.72	0.3384	0.78	0.047003	0.17	0.45	296.10	0.50		
z24	0.3	2.03	1210	0.05219	0.57	0.3381	0.64	0.047001	0.16	0.51	296.09	0.45		
z20	0.4	1.72	1812	0.05219	0.58	0.3376	0.66	0.046935	0.16	0.57	295.68	0.46		
z14	0.6	1.40	1350	0.05200	0.56	0.3362	0.63	0.046908	0.16	0.55	295.51	0.47		
z04	1.4	1.71	778	0.05240	0.84	0.3380	0.92	0.046802	0.21	0.48	294.86	0.60		

a Total mass of common Pb.

b Th contents calculated from radiogenic ^{208}Pb and ^{230}Th -corrected $^{206}\text{Pb}/^{238}\text{U}$ date of the sample, assuming concordance between U-Pb Th-Pb systems.

c Measured ratio corrected for fractionation and tracer contribution only.

d Measured ratios corrected for fractionation, tracer and blank.

e Corrected for initial Th/U disequilibrium using radiogenic ^{208}Pb and Th/U[magma] specified. Deficient radiogenic ^{206}Pb due to initial deficit of ^{230}Th is accounted for by assuming a partition coefficient ratio DTh/DU of 0.2 (as applied in Wotzlaw et al., 2014).f Isotopic dates calculated using $^{238}\text{U} = 1.55125\text{E-}10$ (Jaffey et al. 1971) and $^{235}\text{U} = 9.8485\text{E-}10$ (Jaffey et al. 1971).

Italized measurements are interpreted as Pb-loss and rejected from the age interpretation.

Table S2. U-Pb detrital zircon U-Pb data

Sample	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{235}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	rr	$^{207}\text{Pb}/^{232}\text{Th}$	Th/U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{235}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$	%Dic.	Best Age	error	
	2s	2s	2s	2s	2s	2s	2s	2s	2s				
ANT_66_051.FIN2	0.19796	0.00202	14.20407	0.24838	0.52049	0.0059	0.83	0.14207	0.00158	0.6997906	2809	16	2763
ANT_66_067.FIN2	0.19796	0.00216	11.15422	0.23388	0.4488	0.00578	0.85	0.12636	0.00154	0.6997906	2685	20	2356
ANT_66_093.FIN2	0.14155	0.00168	1.55	0.08	0.08	0.004	0.73	0.10122	0.0013	0.25751906	2317	12	2311
ANT_66_102.FIN2	0.13281	0.00168	6.53225	0.12084	0.35672	0.00444	0.76	0.10056	0.00112	0.54749521	2135	20	2050
ANT_66_109.FIN2	0.1279	0.0019	6.223	0.12	0.3562	0.004	0.64	0.1041	0.0035	1.10235383	2069	22	2008
ANT_66_030.FIN2	0.12755	0.00164	6.20773	0.12052	0.32979	0.00406	0.76	0.10056	0.00112	0.54749521	2065	22	2006
ANT_66_125.FIN2	0.1242	0.002	5.444	0.1	0.3182	0.0034	0.49	0.0908	0.0008	1.60640459	2042	24	2000
ANT_66_130.FIN2	0.1242	0.002	5.307	0.1	0.3182	0.0037	0.49	0.0908	0.0008	1.60640459	2009	20	1962
ANT_66_046.FIN2	0.1235	0.0011	6.123	0.079	0.3593	0.0043	0.75	0.10493	0.0048	0.99512389	2007	16	1984
ANT_66_114.FIN2	0.12016	0.0016	4.905	0.082	0.2969	0.0034	0.61	0.08185	0.0027	1.08108108	1959	20	1803
ANT_66_089.FIN2	0.11807	0.0029	5.6555	0.1824	0.34739	0.0043	0.73	0.09974	0.0014	0.29714423	1927	44	1925
ANT_66_045.FIN2	0.11778	0.00088	4.898	0.057	0.301	0.0037	0.81	0.0867	0.0039	0.10722277	1923	14	1802
ANT_66_048.FIN2	0.11774	0.00068	5.394	0.062	0.3338	0.0036	0.87	0.07999	0.0044	0.19575092	1922	10	1857
ANT_66_069.FIN2	0.11718	0.00074	4.957	0.054	0.3068	0.0034	0.84	0.0863	0.0037	0.26338548	1914	12	1809
ANT_66_083.FIN2	0.11724	0.0012	5.218	0.072	0.3067	0.004	0.71	0.10121	0.0012	0.26338548	1912	18	1798
ANT_66_002.FIN2	0.1166	0.0094	5.306	0.064	0.3334	0.0037	0.76	0.09608	0.0043	1.28700192	1905	14	1870
ANT_66_121.FIN2	0.11656	0.0015	5.202	0.086	0.3241	0.0032	0.63	0.09517	0.0033	1.21212121	1904	20	1853
ANT_66_006.FIN2	0.11645	0.0008	5.329	0.066	0.3343	0.0037	0.83	0.09911	0.0045	1.05614242	1902	12	1874
ANT_66_123.FIN2	0.11613	0.0015	5.366	0.091	0.3339	0.0037	0.65	0.09584	0.0035	0.85763293	1897	20	1879
ANT_66_110.FIN2	0.116	0.0018	5.309	0.097	0.3326	0.0039	0.54	0.0971	0.0032	0.79365079	1895	24	1870
ANT_66_111.FIN2	0.1161	0.0018	4.483	0.062	0.3067	0.0038	0.87	0.0964	0.0042	0.19575092	1890	12	1777
ANT_66_016.FIN2	0.11731	0.00334	5.1889	0.1996	0.32833	0.00412	0.69	0.09462	0.0016	1.01419878	1869	54	1848
ANT_66_062.FIN2	0.11365	0.00284	5.06243	0.16362	0.32308	0.0038	0.72	0.09312	0.0012	0.947666	1859	44	1830
ANT_66_056.FIN2	0.11359	0.00236	5.17599	0.1433	0.33059	0.00402	0.72	0.09528	0.0011	0.17843137	1858	38	1849
ANT_66_061.FIN2	0.11342	0.00158	5.07941	0.1010	0.32481	0.00356	0.74	0.09364	0.001	0.18540332	1855	28	1833
ANT_66_059.FIN2	0.11344	0.00264	4.83608	0.14628	0.30928	0.0037	0.71	0.08916	0.001	0.08731145	1855	42	1791
ANT_66_029.FIN2	0.11337	0.0028	4.954	0.1604	0.31694	0.00386	0.72	0.09017	0.0012	0.09930049	1854	44	1812
ANT_66_077.FIN2	0.11337	0.0028	4.954	0.1604	0.31694	0.00386	0.72	0.09017	0.0012	0.09930049	1846	40	1800
ANT_66_078.FIN2	0.11344	0.00254	5.08801	0.16456	0.32655	0.0043	0.72	0.09418	0.0018	0.18676767	1846	44	1833
ANT_66_068.FIN2	0.11282	0.00282	5.1298	0.15426	0.32397	0.00398	0.72	0.09512	0.0018	0.62686997	1845	40	1841
ANT_66_070.FIN2	0.11283	0.00258	5.03634	0.1519	0.3255	0.00398	0.72	0.09388	0.0018	0.06805556	1845	40	1830
ANT_66_072.FIN2	0.11165	0.00314	5.01265	0.1799	0.32563	0.00394	0.74	0.09402	0.0012	0.16382979	1826	50	1821
ANT_66_080.FIN2	0.11094	0.00192	4.8892	0.1152	0.31923	0.00354	0.72	0.09223	0.0009	0.06341541	1815	32	1786
ANT_66_071.FIN2	0.10756	0.0029	4.39435	0.15786	0.29631	0.00406	0.76	0.08858	0.0018	0.73834873	1758	48	1711
ANT_66_074.FIN2	0.10756	0.0029	4.39435	0.15786	0.29631	0.00406	0.76	0.08858	0.0018	0.73834873	1758	48	1711
ANT_66_003.FIN2	0.09749	0.00064	5.371	0.044	0.32641	0.00303	0.75	0.0769	0.0005	0.55980862	1757	12	1534
ANT_66_043.FIN2	0.09553	0.0017	4.40913	0.08262	0.25883	0.00278	0.73	0.07595	0.0008	0.51490336	1538	34	1507
ANT_66_063.FIN2	0.09371	0.00172	3.26372	0.07922	0.25261	0.0028	0.7	0.07427	0.0008	0.05461496	1502	34	1472
ANT_66_129.FIN2	0.10178	0.00176	4.36489	0.11128	0.24697	0.00532	0.76	0.07199	0.00156	0.29359789	1657	28	1519
ANT_66_032.FIN2	0.09922	0.00064	3.24	0.023	0.2327	0.00218	0.83	0.06467	0.0003	0.04737094	1610	12	1467
ANT_66_015.FIN2	0.09938	0.00062	3.026	0.037	0.2348	0.0026	0.84	0.06833	0.0003	0.65944444	1506	12	1414
ANT_66_089.FIN2	0.09899	0.00058	3.018	0.027	0.2337	0.0026	0.83	0.06874	0.0004	0.65944444	1506	12	1414
ANT_66_020.FIN2	0.07601	0.00278	1.82101	0.08132	0.17376	0.00308	0.74	0.06225	0.0002	0.61168831	1095	72	1033
ANT_66_113.FIN2	0.07417	0.0011	1.779	0.031	0.1732	0.0018	0.53	0.05296	0.0018	0.47483381	1046	26	1038
ANT_66_127.FIN2	0.07465	0.0011	1.778	0.031	0.1714	0.0019	0.54	0.0522	0.0017	0.62192699	1059	26	1037
ANT_66_011.FIN2	0.07431	0.00066	1.739	0.024	0.1705	0.0019	0.77	0.05209	0.0023	0.13837001	1050	18	1023
ANT_66_005.FIN2	0.07098	0.00088	1.6655	0.029	0.1681	0.0019	0.72	0.05127	0.0023	0.30352271	1192	22	1055
ANT_66_081.FIN2	0.07402	0.00064	1.708	0.022	0.1675	0.002	0.76	0.05469	0.0025	0.12025626	1042	18	1012
ANT_66_082.FIN2	0.07402	0.00064	1.708	0.022	0.1675	0.002	0.76	0.05469	0.0025	0.12025626	1008	42	1000
ANT_66_084.FIN2	0.07275	0.00088	1.656	0.022	0.1648	0.0019	0.62	0.05356	0.0024	0.13080013	1007	22	992
ANT_66_021.FIN2	0.07126	0.00094	1.547	0.024	0.1578	0.0019	0.57	0.04974	0.0024	0.29394474	965	26	949
ANT_66_086.FIN2	0.07165	0.00072	1.545	0.02	0.1569	0.0017	0.65	0.05061	0.0023	0.59066745	976	20	949
ANT_66_064.FIN2	0.07173	0.00094	1.558	0.023	0.1567	0.0018	0.53	0.04763	0.0023	0.14271151	978	20	945
ANT_66_095.FIN2	0.07155	0.0011	1.509	0.015	0.1564	0.0011	0.62	0.05282	0.0012	0.14613535	1020	36	948
ANT_66_122.FIN2	0.07855	0.0011	1.515	0.015	0.1564	0.0011	0.62	0.07559	0.0029	1.26266686	550	36	548
ANT_66_094.FIN2	0.07839	0.00098	0.7228	0.014	0.15883	0.00098	0.56	0.07886	0.0002	0.59266311	544	32	552
ANT_66_117.FIN2	0.07845	0.0011	1.6884	0.014	0.15893	0.00098	0.41	0.02695	0.0002	0.13612653	547	36	532
ANT_66_017.FIN2	0.07519	0.00099	3.418	0.064	0.2165	0.0003	0.69	0.06119	0.0004	0.13966014	1355	12	1169
ANT_66_069.FIN2	0.07674	0.00056	2.163	0.029	0.1802	0.0002	0.88	0.05022	0.0002	0.39447332	1317	26	1114
ANT_66_011.FIN2	0.07514	0.00166	2.1026	0.0320	0.1810	0.001	0.6	0.0349	0.0004	0.38104887	1073	38	801
ANT_66_077.FIN2	0.07971	0.00034	1.79717	0.08654	0.16352	0.00218	0.33	0.04891	0.000802	0.41981528	803	12	670
ANT_66_078.FIN2	0.07858	0.00082	0.9778	0.011	0.09078	0.001	0.67	0.04903	0.0029	0.38095283	1726	66	946
ANT_66_023.FIN2	0.06600	0.0058	0.7394	0.0091	0.0943	0.001	0.67	0.02911	0.0013	0.63134702	693	18	724
ANT_66_060.FIN2	0.06647	0.00074	0.7425	0.012	0.09874	0.001	0.64	0.03142	0.0014	0.49067713	699	22	657
ANT_66_026.FIN2	0.06744	0.00071	0.75018	0.012	0.0984	0.001	0.62	0.02563	0.0008	0.64968059	822	22	661
ANT_66_098.FIN2	0.07418	0.0011	1.011	0.019	0.09863	0.0012	0.77	0.03152	0.0014	0.14696205	1046	26	

ANT_113_079.FIN2	0.10998	0.0019	5.025	0.18	0.33	0.012	0.89	0.09343	0.0046	0.83906696	1799	32	1824	30	1838	58	2.2	1799	32
ANT_113_140.FIN2	0.10949	0.0033	4.34708	0.18686	0.28795	0.0084	0.71	0.08331	0.00246	0.56035812	1791	56	1702	36	1631	42	-8.9	1791	56
ANT_113_008.FIN2	0.1047	0.003	4.015	0.086	0.2738	0.0066	0.21	0.0918	0.0028	1.70755872	1709	54	1637	38	1560	34	-8.7	1709	54
ANT_113_300.FIN2	0.10264	0.0024	3.93123	0.4228	0.0074	0.012	0.75	0.0894	0.0017	0.446534	1699	48	1501	50	1564	26	-7.6	1699	48
ANT_113_092.FIN2	0.10324	0.0024	3.61616	0.0074	0.25371	0.00374	0.46	0.0784	0.0018	0.46620047	1683	38	1555	20	1458	18	-0.4	1683	38
ANT_113_151.FIN2	0.0984	0.0024	3.821	0.057	0.2788	0.006	0.14	0.085	0.0025	0.44620047	1594	46	1597	12	1585	30	-0.6	1594	46
ANT_113_049.FIN2	0.09515	0.0056	3.22553	0.29576	0.25855	0.01038	0.87	0.07217	0.00288	0.82101806	1531	106	1463	72	1417	54	-7.4	1531	106
ANT_113_056.FIN2	0.10168	0.00428	3.35524	0.24394	0.23932	0.0095	0.8	0.06977	0.00272	0.62150404	1655	74	1494	56	1383	50	-16.4	1383	50
ANT_113_168.FIN2	0.08934	0.00198	2.92903	0.05716	0.23778	0.0051	0.42	0.07026	0.0016	0.24606299	1411	42	1389	14	1375	26	-2.6	1375	26
ANT_113_081.FIN2	0.08589	0.0015	2.695	0.097	0.2274	0.008	0.88	0.07261	0.0036	1.16092931	1336	34	1327	26	1321	42	-1.1	1321	42
ANT_113_082.FIN2	0.08588	0.0016	2.642	0.085	0.2279	0.0079	0.88	0.07269	0.00371	1313	36	1312	26	1309	42	-1.3	1309	42	
ANT_113_061.FIN2	0.09941	0.00494	2.56638	0.2203	0.25057	0.0062	0.85	0.06675	0.00254	0.60975761	1434	100	1291	62	1207	46	-15.8	1207	46
ANT_113_097.FIN2	0.08336	0.0038	2.41198	0.128	0.19797	0.0035	0.68	0.05857	0.0011	0.72621641	1390	84	1246	38	1164	18	-16.3	1164	18
ANT_113_009.FIN2	0.07747	0.0014	2.063	0.073	0.193	0.0068	0.87	0.05555	0.0027	0.43271311	1133	34	1137	24	1138	36	0.4	1138	36
ANT_113_064.FIN2	0.07699	0.0015	1.993	0.073	0.1894	0.0067	0.85	0.05781	0.0029	0.48828125	1121	38	1113	24	1118	36	-0.3	1118	36
ANT_113_098.FIN2	0.0757	0.0014	1.986	0.043	0.1892	0.0031	0.56	0.05545	0.0019	0.82850041	1087	38	1111	14	1117	16	2.8	1117	16
ANT_113_139.FIN2	0.0773	0.0024	1.986	0.045	0.1892	0.0031	0.56	0.05545	0.0019	0.82850041	1129	64	1081	16	1074	22	-5.1	1074	22
ANT_113_240.FIN2	0.0704	0.0013	1.827	0.058	0.179	0.0063	0.8	0.05327	0.00268	0.41215868	1044	34	1085	29	1062	34	1.7	1062	34
ANT_113_172.FIN2	0.0743	0.002	1.775	0.034	0.1739	0.0039	0.16	0.05345	0.0011	0.14931794	1050	54	1044	12	1034	22	-1.5	1034	22
ANT_113_083.FIN2	0.07131	0.0014	1.664	0.06	0.1685	0.006	0.85	0.0509	0.0027	0.76804916	966	42	995	22	1000	34	3.9	1004	34
ANT_113_106.FIN2	0.0735	0.0014	1.698	0.036	0.1644	0.0027	0.51	0.0514	0.0018	0.37921881	1028	40	1008	14	992	14	-3.5	992	14
ANT_113_154.FIN2	0.0734	0.0023	1.689	0.048	0.1646	0.0041	0.28	0.05334	0.0017	0.68212824	1025	64	1004	18	982	22	-4.2	982	22
ANT_113_153.FIN2	0.0724	0.0026	1.538	0.043	0.1546	0.0037	0.08	0.0485	0.0018	0.5952381	997	74	946	18	927	20	-7.0	927	20
ANT_113_009.FIN2	0.0757	0.0014	1.538	0.043	0.1546	0.0037	0.08	0.0485	0.0018	0.5952381	827	84	846	14	832	18	3.3	832	18
ANT_113_146.FIN2	0.08972	0.002	1.538	0.043	0.1578	0.0031	0.08	0.04749	0.0015	0.62644628	844	70	840	14	823	18	-1.4	823	18
ANT_113_136.FIN2	0.0826	0.0027	1.126	0.041	0.1511	0.0031	0.01	0.04112	0.0018	0.57240958	694	94	766	20	794	18	-2.2	794	18
ANT_113_128.FIN2	0.0655	0.0019	1.147	0.025	0.1273	0.0028	0.12	0.04002	0.0017	0.19107059	790	62	776	12	772	16	-2.3	772	16
ANT_113_170.FIN2	0.06307	0.0017	1.047	0.018	0.1195	0.0025	0.01	0.03825	0.0011	0.59241706	711	52	727	8	728	14	2.4	728	14
ANT_113_173.FIN2	0.0645	0.0017	1.044	0.018	0.1176	0.0026	0.12	0.03886	0.0012	0.53163211	758	56	717	8	717	14	-5.4	717	14
ANT_113_048.FIN2	0.0621	0.0013	0.958	0.035	0.11263	0.0004	0.83	0.03475	0.0017	0.94966762	678	42	682	18	688	24	1.5	688	24
ANT_113_009.FIN2	0.0621	0.0013	0.958	0.035	0.11263	0.0004	0.83	0.03475	0.0017	0.94966762	641	40	630	18	643	22	0.3	643	22
ANT_113_104.FIN2	0.05974	0.0012	0.876	0.035	0.1092	0.0025	0.17	0.0307	0.0011	0.61919238	594	44	606	10	615	10	5.5	615	10
ANT_113_104.FIN2	0.06108	0.0016	0.825	0.015	0.09847	0.0021	0.13	0.0309	0.0017	0.60802721	642	58	611	8	605	12	-5.8	605	12
ANT_113_020.FIN2	0.05949	0.0011	0.7777	0.028	0.09518	0.0034	0.87	0.02906	0.0014	0.93335822	585	38	584	16	586	20	0.2	586	20
ANT_113_065.FIN2	0.05822	0.0014	0.763	0.028	0.09485	0.0034	0.79	0.02881	0.0015	0.92922202	538	50	576	16	584	20	8.6	584	20
ANT_113_072.FIN2	0.05941	0.0012	0.746	0.028	0.09131	0.0032	0.85	0.02836	0.0014	0.93257824	582	44	566	16	563	18	-3.3	563	18
ANT_113_047.FIN2	0.05729	0.0013	0.709	0.027	0.09037	0.0032	0.81	0.02702	0.0014	0.51579834	503	48	544	16	558	18	10.9	558	18
ANT_113_071.FIN2	0.05711	0.0013	0.709	0.027	0.09037	0.0032	0.81	0.02702	0.0014	0.51579834	515	42	547	16	558	18	8.3	558	18
ANT_113_031.FIN2	0.06955	0.00184	0.73732	0.0455	0.09898	0.00342	0.8	0.02778	0.0011	0.33388982	585	64	561	26	555	20	-5.1	555	20
ANT_113_059.FIN2	0.05988	0.0012	0.7456	0.027	0.09882	0.0032	0.84	0.02879	0.0014	0.48496605	599	42	566	16	555	18	-2.3	555	18
ANT_113_163.FIN2	0.05837	0.0012	0.7206	0.027	0.09864	0.0032	0.84	0.02859	0.0014	0.36693378	544	44	551	16	553	18	-1.7	553	18
ANT_113_118.FIN2	0.05621	0.0012	0.689	0.025	0.09747	0.0032	0.87	0.02675	0.0014	0.20496246	511	44	520	16	532	20	20.2	532	16
ANT_113_158.FIN2	0.0577	0.0018	0.695	0.016	0.0867	0.002	0.88	0.0262	0.0013	0.32526705	541	62	540	12	538	16	8.5	538	16
ANT_113_105.FIN2	0.05866	0.0019	0.683	0.018	0.0861	0.002	0.85	0.0262	0.0013	0.40055622	552	72	529	10	532	12	-3.6	532	12
ANT_113_021.FIN2	0.05841	0.0011	0.6929	0.025	0.08591	0.00303	0.86	0.02634	0.0013	0.25031289	545	40	535	14	531	18	-2.6	531	18
ANT_113_051.FIN2	0.05871	0.001	0.674	0.034	0.08352	0.0029	0.86	0.02541	0.0012	0.16195779	522	134	500	26	520	12	-0.4	520	12
ANT_113_145.FIN2	0.05844	0.002	0.677	0.03	0.0833	0.0021	0.86	0.02326	0.0014	0.4178855	545	112	525	18	516	12	-7.0	516	12
ANT_113_125.FIN2	0.05833	0.0018	0.669	0.015	0.08313	0.0018	0.82	0.02365	0.0008	0.64143682	541	70	520	10	515	10	-4.8	515	10
ANT_113_137.FIN2	0.05802	0.0017	0.668	0.015	0.08324	0.0019	0.82	0.02371	0.0008	0.64548585	537	66	519	8	515	10	-4.1	515	10
ANT_113_021.FIN2	0.05875	0.0012	0.6359	0.024	0.07886	0.0028	0.89	0.02568	0.0013	0.68121727	558	42	509	14	489	16	-12.4	489	16
ANT_113_135.FIN2	0.05666	0.0017	0.639	0.017	0.07886	0.0028	0.83	0.02687	0.0013	0.44782803	515	50	485	16	479	18	-7.0	479	18
ANT_113_041.FIN2	0.05028	0.0017	2.16827	0.04578	0.15862	0.0216	0.98	0.04578	0.0019	0.086517896	492	60	494	8	506	12	2.8	506	12
ANT_113_112.FIN2	0.0577	0.0017	1.647	0.015	0.0817	0.002	0.24	0.02635	0.0008	1	518	66	507	10	506	12	-2.3	506	12
ANT_113_164.FIN2	0.05898	0.0015	1.76	0.014	0.08184	0.002	0.39	0.02863	0.0008	0.044682752	566	51	515	8	504	12	-11.0	504	12
ANT_113_120.FIN2	0.05611																		

ANT_113_022.FIN2	0.05693	0.0013	0.3677	0.014	0.04644	0.0017	0.81	0.01793	0.00092	0.36523009	489	48	318	10	293	10	-40.1
ANT_113_137.FIN2	0.0616	0.0031	0.396	0.018	0.04636	0.0012	0.09	0.0252	0.0013	0.2921414	660	110	339	14	292	8	-55.8
ANT_113_036.FIN2	0.05866	0.0012	0.3652	0.014	0.04523	0.0017	0.85	0.0189	0.00094	0.3525851	555	42	316	10	285	10	-48.6
ANT_113_174.FIN2	0.05961	0.0016	0.3551	0.014	0.04516	0.0016	0.4	0.0248	0.00094	0.3500569	495	76	307	10	283	8	-42.8
ANT_113_021.FIN2	0.05679	0.0014	0.3621	0.016	0.04605	0.0008	0.01	0.0238	0.00024	0.24148756	632	56	319	8	278	4	-50.0
ANT_113_102.FIN2	0.0581	0.0016	0.324	0.0096	0.0412	0.0013	0.6	0.022	0.0008	0.28042625	534	62	285	8	260	8	-51.3
ANT_113_07.FIN2	0.0751	0.0016	0.4132	0.017	0.03999	0.0016	0.86	0.0249	0.0016	0.22563177	1071	40	351	12	253	10	-76.4
ANT_113_117.FIN2	0.05090	0.00342	0.2647	0.0178	0.03834	0.00082	0.11	0.0212	0.00046	0.0922592	199	162	238	14	243	6	22.1
ANT_113_161.FIN2	0.06	0.0018	0.304	0.019	0.0362	0.0024	0.89	0.01641	0.001	0.37864445	604	66	270	14	229	14	-62.1
ANT_113_111.FIN2	0.0593	0.0019	0.397	0.017	0.04505	0.0009	0.07	0.0225	0.00024	0.32916392	583	38	262	8	228	8	-60.9
ANT_113_014.FIN2	0.05474	0.001	0.2553	0.0092	0.03387	0.0012	0.57	0.01467	0.00072	0.44014085	595	70	260	6	228	6	-61.6
ANT_113_139.FIN2	0.06006	0.00392	0.39026	0.0183	0.03143	0.0074	0.38	0.01928	0.00056	0.17288907	1427	86	335	14	199	4	-86.1
ANT_113_110.FIN2	0.0622	0.0014	0.2542	0.0067	0.02965	0.0062	0.57	0.02551	0.00094	0.2108403	681	50	230	6	188	4	-72.4
ANT_113_030.FIN2	0.0652	0.0018	0.252	0.015	0.02815	0.0019	0.91	0.0238	0.0012	0.49019608	781	56	228	12	181	12	-76.8
ANT_113_029.FIN2	0.05791	0.0017	0.2216	0.0115	0.02769	0.0014	0.83	0.00859	0.00048	0.08553358	526	62	203	10	176	6	-66.5
ANT_113_115.FIN2	0.05908	0.0017	0.393	0.023	0.04646	0.0016	0.41	0.02522	0.00046	0.18361616	1891	126	335	22	157	8	-91.7
ANT_113_178.FIN2	0.0602	0.0017	0.354	0.017	0.04591	0.0013	0.87	0.01592	0.00082	0.32916367	759	56	190	6	150	6	-80.0
ANT_113_119.FIN2	0.04874	0.00248	0.14922	0.01564	0.0222	0.0098	0.56	0.00703	0.00078	0.08143322	135	202	141	14	142	6	-5.2
ANT_113_106.FIN2	0.0696	0.002	0.1997	0.007	0.02117	0.0082	0.7	0.02245	0.00096	0.08097166	917	60	185	6	135	6	-85.3
ANT_113_141.FIN2	0.0698	0.003	0.1703	0.0071	0.01785	0.0054	0.32	0.02128	0.001	0.14880952	922	90	160	6	114	4	-87.6
ANT_113_163.FIN2	0.13457	0.01334	0.21134	0.021934	0.01139	0.00234	0.86	0.00323	0.00824	0.06410256	2159	1980	195	184	73	14	-96.6
ANT_113_052.FIN2	0.89	0.58	0.49	0.16	0.0079	0.0026	0.98	0.108	0.063	0.04329004	5073	1020	405	110	51	16	-99.0

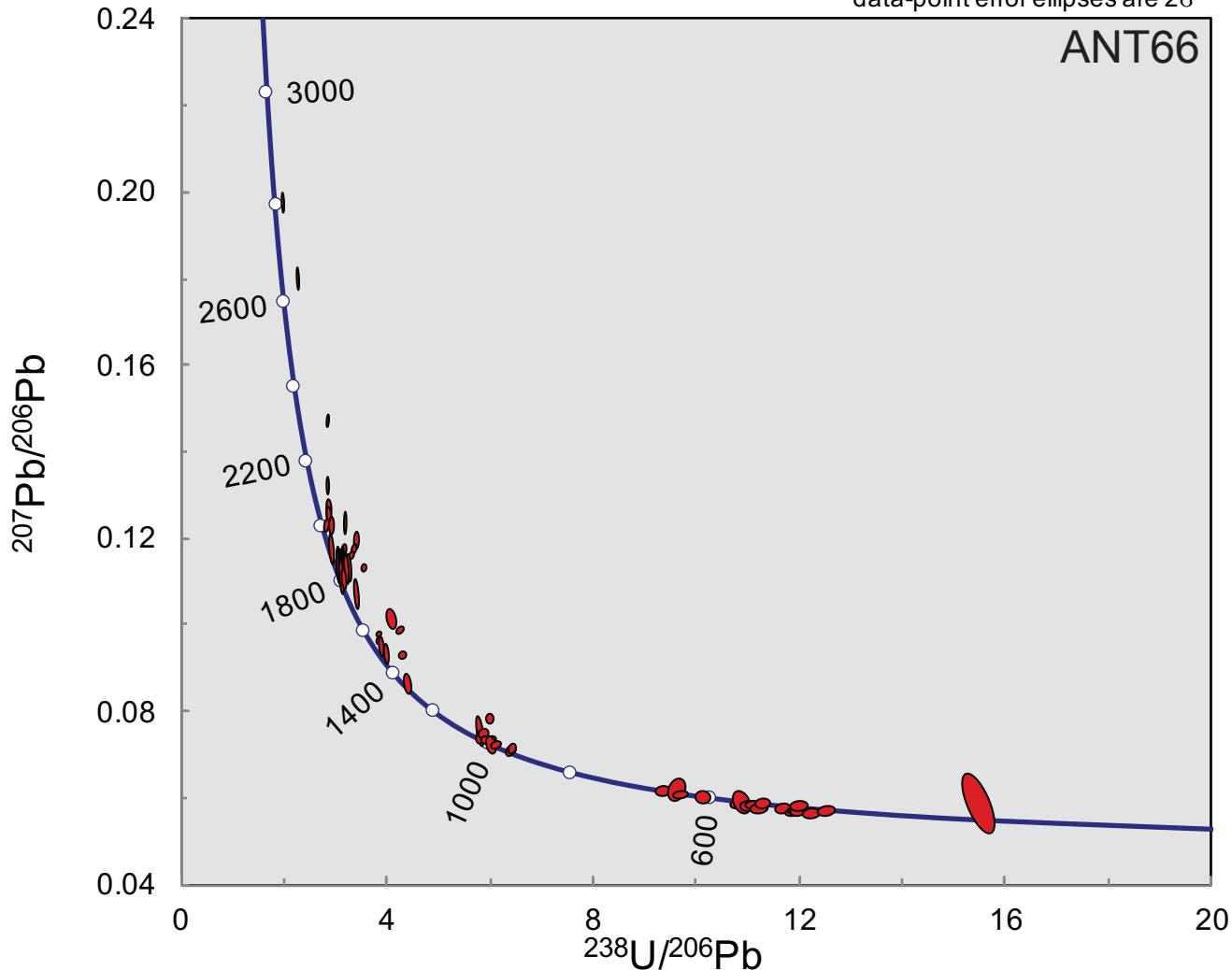
		$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{235}\text{U}$	$^{206}\text{Pb}/^{232}\text{Th}$	Th/U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{235}\text{U}$	Th/U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{235}\text{U}$	Th/U	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{235}\text{U}$	Th/U	%Dic.	Best Age	error		
ANT_222_054.FIN2	0.20077	0.00282	12.36536	0.2506	0.04469	0.00722	0.72	0.12178	0.00228	0.32948929	2832	22	2633	20	2381	32	-15.93	2822	22
ANT_222_096.FIN2	0.18713	0.0028	12.36601	0.27108	0.047926	0.01148	0.79	0.13154	0.00232	0.33863367	2717	22	2633	20	2524	50	-7.10	2717	22
ANT_222_069.FIN2	0.17008	0.0035	9.81848	0.32423	0.041869	0.00852	0.8	0.11597	0.00236	0.37950748	2558	32	2418	30	2255	38	-11.85	2558	32
ANT_222_105.FIN2	0.1574	0.0026	8.331	0.16	0.03827	0.0085	0.69	0.0911	0.003	0.09961059	2428	26	2268	18	2089	40	-13.96	2428	26
ANT_222_033.FIN2	0.1559	0.0027	9.14	0.32	0.04267	0.015	0.87	0.11764	0.0058	0.54148182	2412	28	2352	32	2291	68	-5.02	2412	28
ANT_222_024.FIN2	0.1559	0.0026	7.2391	0.3262	0.03722	0.0066	0.87	0.04847	0.0028	0.17262835	2230	20	2000	64	1803	56	-9.73	2260	48
ANT_222_038.FIN2	0.15329	0.0024	8.12	0.18	0.04227	0.015	0.87	0.1164	0.0057	0.48472097	2168	30	2344	22	2118	68	-6.92	2168	30
ANT_222_013.FIN2	0.13166	0.0023	5.742	0.21	0.03109	0.011	0.88	0.08134	0.004	0.0252683	2120	30	1938	32	1745	54	-17.69	2120	30
ANT_222_005.FIN2	0.13064	0.0023	6.017	0.22	0.03332	0.012	0.88	0.096	0.0048	0.33322226	2107	30	1978	32	1854	58	-12.01	2107	30
ANT_222_028.FIN2	0.13053	0.0022	7.049	0.24	0.03904	0.014	0.89	0.10753	0.0053	0.4562896	2105	28	2118	32	2125	64	0.95	2105	28
ANT_222_097.FIN2	0.12923	0.00252	5.6563	0.15338	0.03144	0.00766	0.71	0.09032	0.00224	0.34989503	2088	30	1925	24	1777	38	-14.89	2088	30
ANT_222_022.FIN2	0.12923	0.00252	6.617	0.25	0.03145	0.014	0.87	0.10616	0.0053	0.45477975	2084	28	2056	60	1960	50	-5.35	2084	28
ANT_222_017.FIN2	0.12924	0.0024	6.673	0.24	0.03759	0.013	0.88	0.10622	0.0051	0.53475936	2066	28	2069	32	2056	60	-0.48	2066	28
ANT_222_074.FIN2	0.1276	0.0023	6.531	0.13	0.03704	0.0062	0.53	0.1113	0.0037	0.16873802	2065	30	2050	18	2031	30	-1.65	2065	30
ANT_222_119.FIN2	0.12752	0.00196	6.2389	0.14344	0.03584	0.00202	0.77	0.10109	0.00232	0.30627352	2064	24	2010	20	1958	38	-5.14	2064	24
ANT_222_015.FIN2	0.12663	0.0022	6.755	0.24	0.03831	0.013	0.88	0.10561	0.0052	0.16915978	2052	30	2080	32	209	60	-1.90	2052	30
ANT_222_115.FIN2	0.12580	0.00238	6.06662	0.17366	0.043915	0.00928	0.75	0.0996	0.00472	0.46926236	2041	30	1985	24	1931	40	-5.39	2041	30
ANT_222_022.FIN2	0.12578	0.0022	6.075	0.22	0.03485	0.013	0.89	0.09521	0.0047	0.04671252	2040	30	1987	32	1915	62	-6.13	2040	30
ANT_222_085.FIN2	0.12576	0.002	6.075	0.17	0.03485	0.005	0.89	0.10565	0.0047	0.04671252	2036	28	2050	16	1970	50	-2.51	2036	28
ANT_222_099.FIN2	0.12512	0.00186	5.83766	0.14506	0.03387	0.00778	0.81	0.09658	0.00224	0.3875969	2031	24	1923	22	1879	38	-7.48	2031	24
ANT_222_006.FIN2	0.12246	0.0023	6.332	0.23	0.03678	0.013	0.87	0.1044	0.0045	0.14885326	2023	32	2023	32	1919	62	-0.20	2023	32
ANT_222_022.FIN2	0.12171	0.00192	5.64882	0.12299	0.03354	0.00486	0.69	0.09595	0.0014	0.44464206	2018	26	1924	18	1864	24	-6.24	1988	26
ANT_222_108.FIN2	0.12171	0.0024	5.1148	0.13748	0.03407	0.00478	0.72	0.08723	0.00136	0.02526651	2012	32	1920	20	1860	40	-1.45	1934	32
ANT_222_024.FIN2	0.12171	0.0024	5.1148	0.13748	0.03408	0.00478	0.64	0.08975	0.0014	0.02526651	2003	36	1925	20	1863	40	-5.20	1923	36
ANT_222_055.FIN2	0.12174	0.003	4.8919	0.16738	0.030193	0.00486	0.57	0.08653	0.0014	0.02049246	1919	44	1801	20	1701	24	-13.47	1919	44
ANT_222_062.FIN2	0.12178	0.00346	5.69514	0.22818	0.03159	0.0028	0.75	0.10109	0.00162	0.14525975	1917	50	1931	34	1944	28	-1.41	1917	50
ANT_222_071.FIN2	0.12174	0.00214	5.031	0.09	0.03899	0.0034	0.8	0.07030	0.003	0.37509377	1917	318	1824	18	1743	56	-9.08	1917	318
ANT_222_099.FIN2	0.12173	0.0017	4.9961	0.093	0.03806	0.0034	0.8	0.07030	0.003	0.37509377	1906	30	1896	18	1912	36	-0.31	1906	30
ANT_222_045.FIN2	0.12179	0.0013	4.854	0.093	0.03806	0.00222	0												

	Zs	Zs	Zs	Zs	Zs	Zs	Zs	Zs	Zs	Zs	Zs	*%DIC	Best Age	error	
ANT_290_22T_FIN2	0.04561	0.0016	20.35702	0.44426	0.60347	0.03454	0.61	0.02311	0.0034	1.08535703	3144	50	3108	22	3095
ANT_290_04T_FIN2	0.1964	0.0022	12.626	0.42	0.471	0.013	0.15	0.02322	0.0047	0.636575724	2397	20	2655	32	2488
ANT_290_04T_FIN2	0.0906	0.0046	14.32	0.2	0.3486	0.012	0.15	0.1646	0.0048	0.426439203	2347	36	2771	14	2812
ANT_290_018T_FIN2	0.1891	0.0023	10.84	0.37	0.4123	0.012	0.14	0.0982	0.0041	0.57703405	2734	22	2510	32	2225
ANT_290_26T_FIN2	0.1311	0.0034	6.52	0.11	0.3631	0.0079	0.12	0.1067	0.0031	1.19118523	2113	42	2049	14	1997
ANT_290_03T_FIN2	0.13067	0.0015	6.578	0.22	0.3352	0.011	0.14	0.096	0.0037	0.52383447	2107	22	2056	30	2007
ANT_290_26L1FIN2	0.1306	0.0032	6.749	0.099	0.3757	0.0082	0.12	0.1141	0.0033	0.64474533	2106	40	2079	12	2056
ANT_290_26L2FIN2	0.1306	0.0038	6.604	0.57926	0.33732	0.0056	0.15	0.0963	0.0038	0.72953269	2085	128	1976	84	1874
ANT_290_25T5FIN2	0.1283	0.0003	6.701	0.3782	0.3088	0.015	0.14	0.1143	0.0032	0.62315151	2079	38	2073	12	2068
ANT_290_095TFIN2	0.1284	0.0002	5.545	0.1	0.3148	0.0035	0.15	0.0514	0.0029	0.72662515	2076	24	1908	16	1764
ANT_290_134TFIN2	0.1801	0.0027	6.63657	0.17644	0.37115	0.0054	0.13	0.0741	0.0028	0.90738568	2071	34	2067	24	2063
ANT_290_028TFIN2	0.1272	0.0014	6.322	0.21	0.358	0.01	0.95	0.1028	0.0039	0.58038305	2067	20	2022	30	1973
ANT_290_240TFIN2	0.1276	0.0031	6.44	0.097	0.3567	0.0083	0.22	0.1047	0.0035	0.19047619	2065	40	2038	14	2009
ANT_290_245TFIN2	0.12624	0.0026	6.2394	0.1005	0.35847	0.00806	0.47	0.01223	0.0028	0.29095141	2046	34	2010	14	1975
ANT_290_100TFIN2	0.12046	0.0019	6.09	0.19	0.3444	0.0056	0.15	0.1028	0.0031	0.72952901	2043	20	1813	20	1642
ANT_290_218TFIN2	0.12803	0.0062	5.8842	1.1112	0.33923	0.0158	0.71	0.09677	0.0036	0.8830269	2040	26	1959	14	1883
ANT_290_017TFIN2	0.1252	0.0015	5.607	0.19	0.2624	0.0099	0.94	0.04435	0.0036	0.70621669	2032	22	1917	30	1821
ANT_290_096TFIN2	0.1247	0.0017	5.707	0.1	0.3362	0.004	0.63	0.0806	0.0033	0.56625124	2025	22	1932	16	1868
ANT_290_256TFIN2	0.1245	0.0034	5.39	0.12	0.3135	0.0085	0.4	0.0864	0.0039	1.20192308	2022	44	1883	20	1758
ANT_290_043TFIN2	0.1239	0.0014	5.976	0.12	0.3481	0.0099	0.15	0.00103	0.0038	0.79936051	2014	18	1972	30	1926
ANT_290_100TFIN2	0.1238	0.0019	6.04	0.14	0.3444	0.0054	0.56	0.1028	0.0031	0.76671717	2013	46	1972	16	1943
ANT_290_232TFIN2	0.1238	0.0014	5.908	0.19	0.3444	0.0088	0.94	0.09575	0.0036	0.48828885	2012	24	2002	16	2007
ANT_290_027TFIN2	0.12345	0.0014	5.472	0.18	0.3214	0.0091	0.94	0.0746	0.0035	0.61124694	2009	22	1971	30	1923
ANT_290_106TFIN2	0.12274	0.0016	5.840	0.097	0.3443	0.0036	0.63	0.07774	0.0026	0.56657224	1996	20	1947	14	1907
ANT_290_123TFIN2	0.12292	0.0023	5.9595	0.1483	0.35666	0.00426	0.67	0.10207	0.0012	0.76277651	1984	30	1975	22	1966
ANT_290_235TFIN2	0.1218	0.0023	5.79766	0.11386	0.34524	0.00768	0.59	0.09881	0.00232	0.52088333	1983	32	1948	18	1912
ANT_290_100TFIN2	0.1218	0.0019	5.79766	0.11386	0.34524	0.00768	0.59	0.08252	0.0019	1.72110404	1975	24	1821	16	1753
ANT_290_042TFIN2	0.1218	0.0019	5.088	0.094	0.34811	0.00844	0.94	0.08622	0.0028	0.73737777	1959	52	1844	14	1744
ANT_290_243TFIN2	0.11986	0.0088	5.29921	0.5946	0.32065	0.01004	0.76	0.0912	0.0072	0.87837959	1954	150	1869	14	1793
ANT_290_239TFIN2	0.11982	0.0026	5.05586	0.1451	0.30604	0.00734	0.71	0.08774	0.0026	0.71117477	1953	34	1829	24	1721
ANT_290_003TFIN2	0.11866	0.0014	5.031	0.17	0.3026	0.0089	0.94	0.0521	0.0039	0.08608582	1936	22	1825	28	1704
ANT_290_037TFIN2	0.11845	0.0014	5.202	0.17	0.3189	0.009	0.94	0.09435	0.0036	1.4025454	1933	18	1853	28	1784
ANT_290_272TFIN2	0.11806	0.0016	5.6698	0.1636	0.34832	0.00826	0.72	0.1	0.00236	0.12107263	1927	44	1927	32	1927
ANT_290_210TFIN2	0.11784	0.0016	5.79766	0.11386	0.34524	0.00768	0.59	0.09881	0.00232	0.52088333	1924	32	1948	18	1912
ANT_290_045TFIN2	0.1172	0.0013	5.321	0.18	0.3278	0.0099	0.95	0.09451	0.0036	0.81560669	1914	22	1872	28	1828
ANT_290_268TFIN2	0.1169	0.0028	5.403	0.075	0.3256	0.0071	0.11	0.1054	0.0034	0.79401256	1909	40	1885	12	1865
ANT_290_103TFIN2	0.1168	0.0017	5.517	0.097	0.3438	0.0091	0.56	0.10386	0.0034	0.94903579	1908	24	1968	16	1905
ANT_290_210TFIN2	0.1168	0.0017	5.517	0.097	0.3438	0.0091	0.56	0.10386	0.0034	0.94903579	1908	24	1865	18	1808
ANT_290_217TFIN2	0.1168	0.0017	5.626	0.097	0.3432	0.0037	0.56	0.09525	0.0031	0.10017028	1906	22	1832	28	1768
ANT_290_010TFIN2	0.1167	0.0014	5.078	0.17	0.3156	0.0081	0.94	0.08964	0.0034	1.21256214	1906	42	1711	16	1550
ANT_290_230TFIN2	0.1167	0.003	4.391	0.084	0.2718	0.0061	0.24	0.0669	0.002	1.42641591	1905	50	1826	16	1771
ANT_290_130TFIN2	0.1165	0.002	5.078	0.17	0.3156	0.0081	0.63	0.042	0.0043	0.75268582	1905	40	1889	40	1871
ANT_290_246TFIN2	0.1164	0.0029	5.315	0.08	0.3242	0.0072	0.94	0.0811	0.0033	0.86525088	1904	24	1823	28	1788
ANT_290_246FIN2	0.11625	0.0028	5.02048	0.14164	0.31322	0.00742	0.67	0.09007	0.00224	0.55066679	1909	24	1823	24	1757
ANT_290_015TFIN2	0.1162	0.0014	5.082	0.17	0.3227	0.0092	0.94	0.0915	0.0035	0.9130987	1897	22	1833	28	1803
ANT_290_009TFIN2	0.1161	0.004	5.121	0.073	0.31278	0.0073	0.15	0.1003	0.0028	1.30350104	1897	22	1821	28	1744
ANT_290_250TFIN2	0.1157	0.0019	5.07	0.17	0.3156	0.0089	0.94	0.08964	0.0034	0.74907667	1886	40	1808	16	1786
ANT_290_248TFIN2	0.1156	0.0019	5.072	0.17	0.3156	0.0089	0.94	0.08964	0.0034	0.74907667	1886	40	1808	16	1786
ANT_290_120TFIN2	0.1152	0.0029	4.538	0.081	0.2941	0.0065	0.18	0.1008	0.0028	0.44993984	1884	24	1738	14	1662
ANT_290_116TFIN2	0.1129	0.0028	5.0948	0.1518	0.32094	0.0084	0.65	0.09495	0.0016	0.97238490	1883	24	1835	26	1834
ANT_290_212TFIN2	0.1123	0.0023	4.784	0.074	0.2233	0.005	0.23	0.04444	0.0037	0.51637653	1883	22	1665	26	1613
ANT_290_109TFIN2	0.10768	0.002	1.859	0.074	0.2233	0.0051	0.23	0.04444	0.0037	0.51637653	1883	22	1665	26	1613
ANT_290_244TFIN2	0.1122	0.0019	4.644	0.073	0.2231	0.0056	0.27	0.05599	0.0037	0.51637653	1883	22	1665	26	1613
ANT_290_245TFIN2	0.1122	0.0019	4.644	0.073	0.2231	0.0056	0.27	0.05599	0.0037	0.51637653	1883	22	1665	26	1613
ANT_290_270TFIN2	0.1154	0.0014	4.97	0.0732	0.2232	0.0051	0.17	0.04833	0.0014	0.33444448	1879	44	929	8	913
ANT_290_269TFIN2	0.10648	0.0024	4.644	0.0732	0.2232	0.0051	0.17	0.04833	0.0014	0.64599483	1879	44	929	8	913
ANT_290_206TFIN2	0.11503	0.0009	4.714	0.0732	0.2232	0.0051	0.17	0.04833	0.0014	0.64599483	1879	44	929	8	913
ANT_290_205TFIN2	0.11503	0.0009	4.714	0.0732	0.2232	0.0051	0.17	0.04833	0.0014	0.64599483	1879	44	929	8	913
ANT_290_204TFIN2	0.11503	0.0009	4.714	0.0732	0.2232	0.0051	0.17	0.04833	0.0014	0.64599483	1879	44	929	8	913
ANT_290_203TFIN2	0.11503	0.0009	4.714	0.0732	0.2232	0.0051	0.17	0.04833	0.0014	0.64599483	1879	44	929	8	913
ANT_290_202TFIN2	0.11503	0.0009	4.714	0.0732	0.2232	0.0051	0.17	0.04833	0.0014	0.64599483	1879	44	929	8	913
ANT_290_201TFIN2	0.11503	0.0009	4.714	0.0732	0.2232	0.0051	0.17	0.04833	0.0014	0.64599483	1879	44	929	8	913
ANT_290_200TFIN2	0.11503	0.0009	4.714	0.0732	0.2232	0.0051	0.17	0.04833	0.0014	0.64599483	1879	44	929	8	913
ANT_290_199TFIN2	0.11503	0.0009	4.714	0.0732	0.2232	0.0051	0.17	0.04833	0.0014	0.64599483	1879	44	929	8	913
ANT_290_198TFIN2	0.11503	0.0009	4.714	0.0732	0.2232	0.0051	0.17	0.04833	0.0014	0.64599483	1879	44	929	8	913
ANT_290_197TFIN2	0.11503	0.0009	4.714	0.0732	0.2232	0.0051	0.17	0.04833	0.0014	0.64599483	1879	44	929	8	913
ANT_290_196TFIN2	0.11503	0.0009	4.714	0.0732	0.2232	0.0051	0.17	0.04833	0.0014	0.64599483	1879	44	929	8	913
ANT_290_195TFIN2	0.11503	0.0009	4.714	0.0732	0.2232	0.0051	0.17	0.04833	0.0014	0.64599483	1879	44	929	8	913
ANT_290_194TFIN2	0.11503	0.0009	4.714	0.0732	0.2232	0.0051	0.17	0.04833	0.0014	0.64599483	1879	44	929	8	913
ANT_290_193TFIN2	0.11503	0.0009</													

ANT_290_247.FIN2	0.0759	0.004	0.832	0.037	0.083	0.0024	0.01	0.0229	0.0013	0.76103501	1092	98	615	20	\$14	14	-52.9
ANT_290_129.FIN2	0.06044	0.00084	0.6892	0.012	0.08245	0.00086	0.6	0.0247	0.00086	0.13726836	619	26	532	8	511	6	-17.4
ANT_290_044.FIN2	0.05986	0.00078	0.6721	0.023	0.081	0.0023	0.93	0.02044	0.00084	0.74128984	599	26	522	14	502	14	-16.2
ANT_290_198.FIN2	0.06044	0.00071	0.7902	0.015	0.081	0.0009	0.6	0.0247	0.00086	0.59535536	985	26	522	8	493	6	-49.9
ANT_290_128.FIN2	0.06209	0.0011	0.6468	0.015	0.07942	0.0011	0.61	0.01634	0.00066	0.64391515	677	34	519	10	493	6	-2.2
ANT_290_220.FIN2	0.0639	0.0026	0.707	0.024	0.0793	0.0029	0.34	0.00591	0.00048	0.34025179	738	76	543	14	492	18	-33.3
ANT_290_002.FIN2	0.05959	0.0008	0.6328	0.021	0.07595	0.0022	0.92	0.01798	0.0007	0.52966102	589	30	498	14	472	14	-19.9
ANT_290_130.FIN2	0.06294	0.0011	0.6519	0.013	0.07481	0.001	0.51	0.02161	0.00084	0.57670127	706	34	510	8	465	6	-34.1
ANT_290_104.FIN2	0.0583	0.0013	0.597	0.014	0.07424	0.00092	0.35	0.02215	0.00076	1.36518771	541	44	475	8	462	6	-14.6
ANT_290_222.FIN2	0.05913	0.0016	0.5862	0.01	0.07255	0.0016	0.96	0.0107	0.0004	0.3431709	572	52	468	6	452	10	-21.0
ANT_290_006.FIN2	0.06044	0.0011	0.3318	0.006	0.04566	0.0058	0.0078	0.0008	0.0002	0.39355113	241	44	591	6	301	4	24.9
ANT_290_017.FIN2	0.0491	0.0023	0.104	0.012	0.04559	0.0012	0.03	0.0151	0.00052	0.42336103	153	98	270	10	287	8	87.6
ANT_290_045.FIN2	0.0537	0.001	0.3358	0.012	0.04522	0.0013	0.85	0.01146	0.00044	1.04931794	358	38	294	10	285	8	-20.4
ANT_290_113.FIN2	0.07	0.0031	0.437	0.018	0.0451	0.00088	0.07	0.01136	0.00052	1.35135135	928	80	368	12	284	6	-69.4

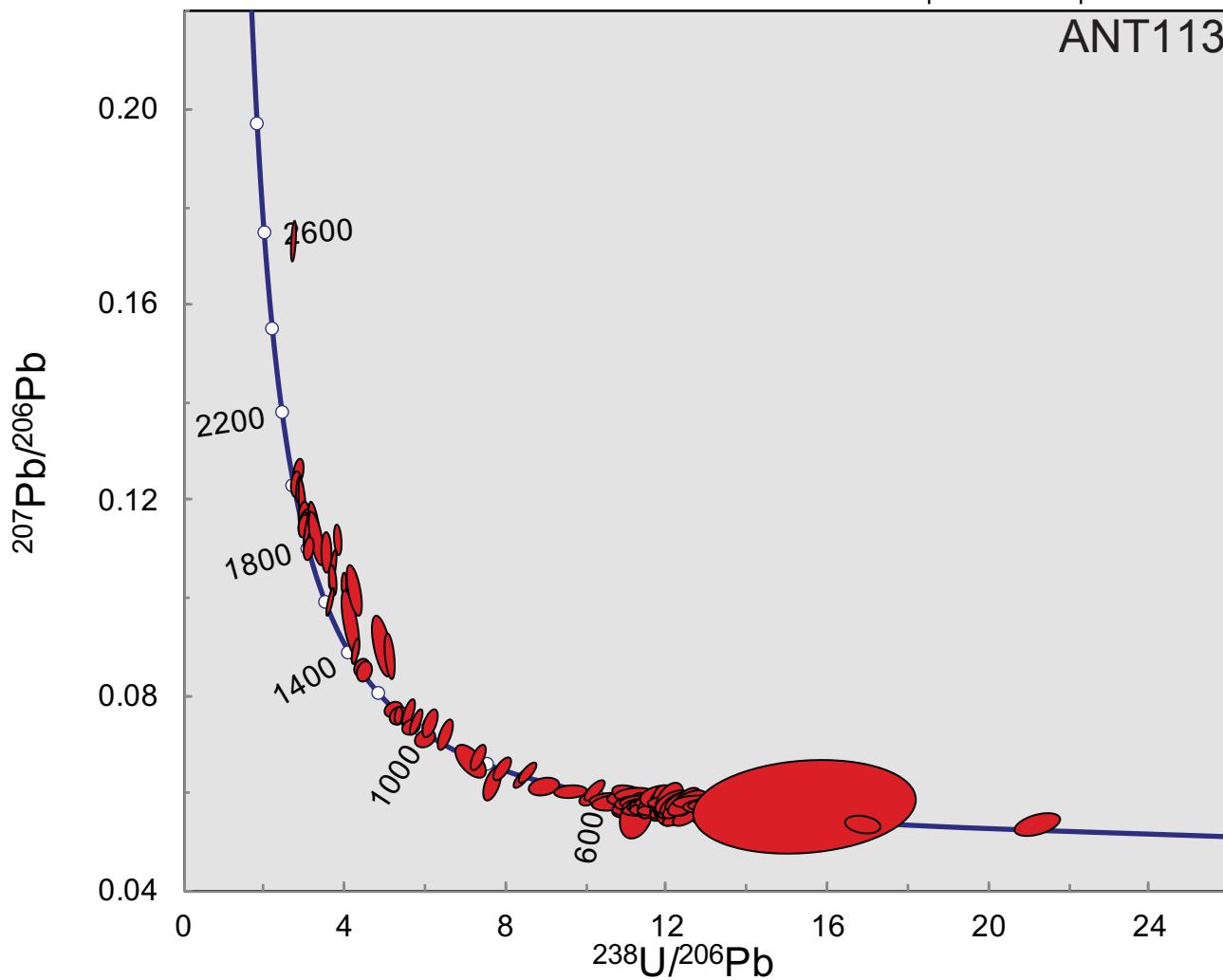
data-point error ellipses are 2σ

ANT66



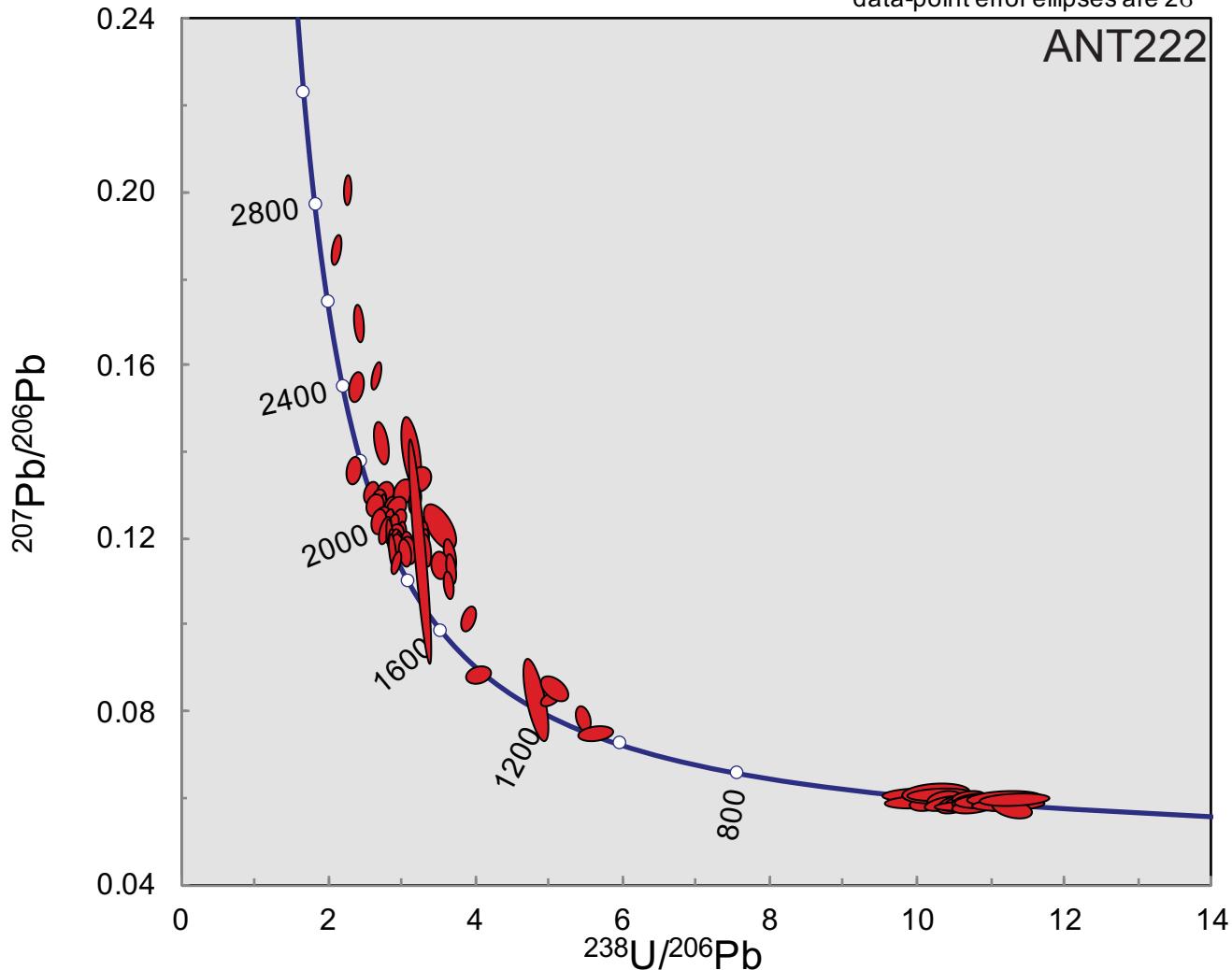
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ANT113

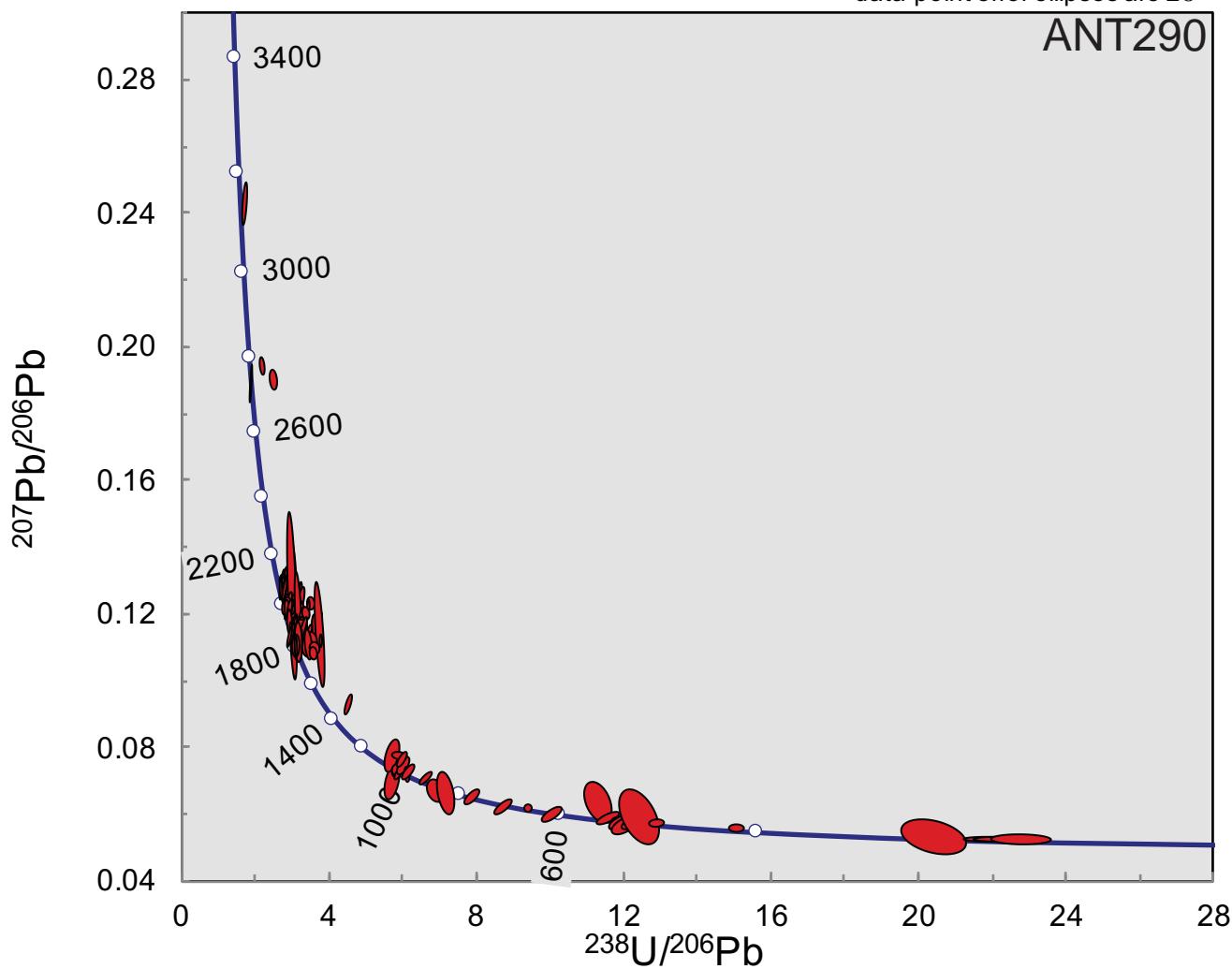


data-point error ellipses are 2σ

ANT222

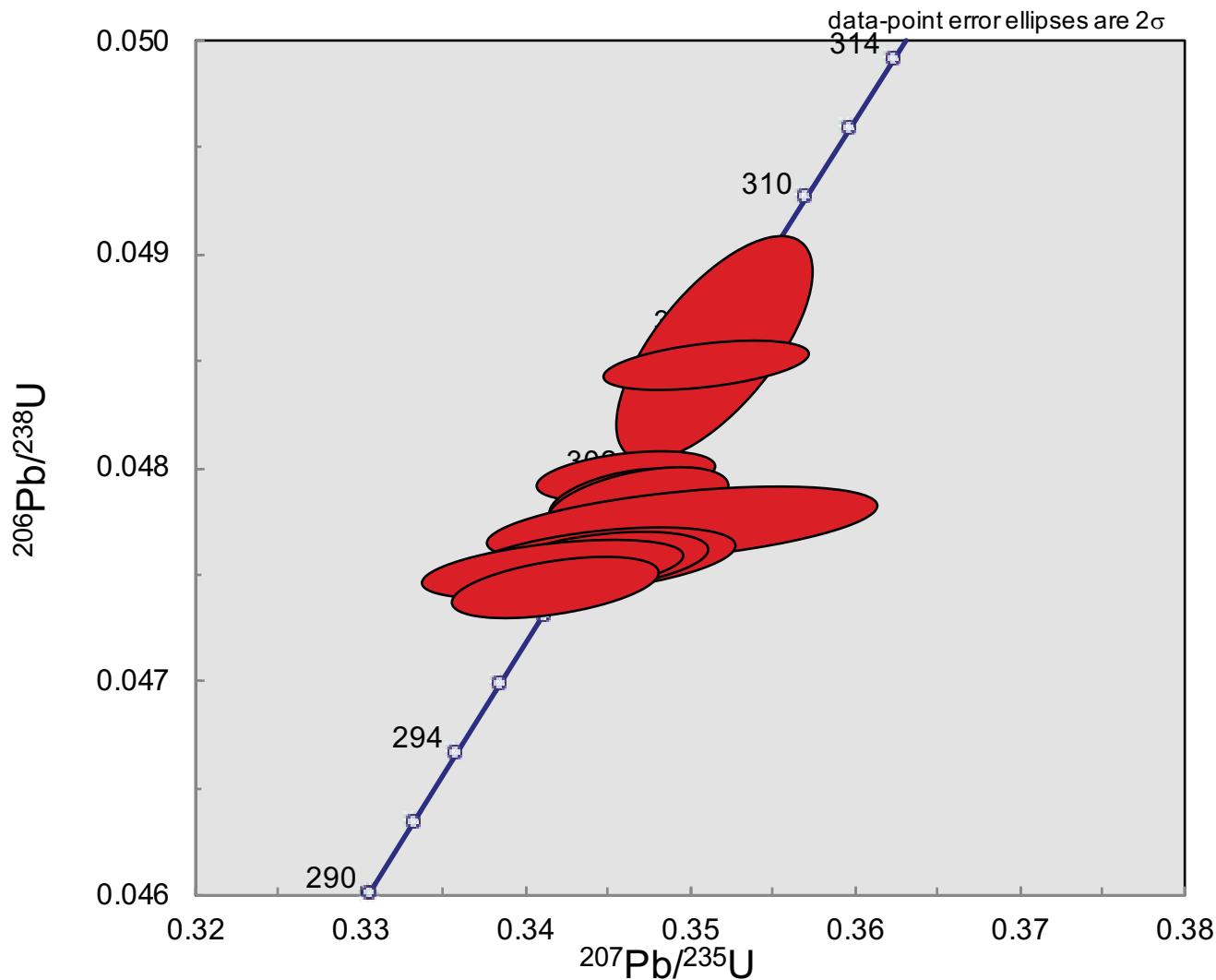


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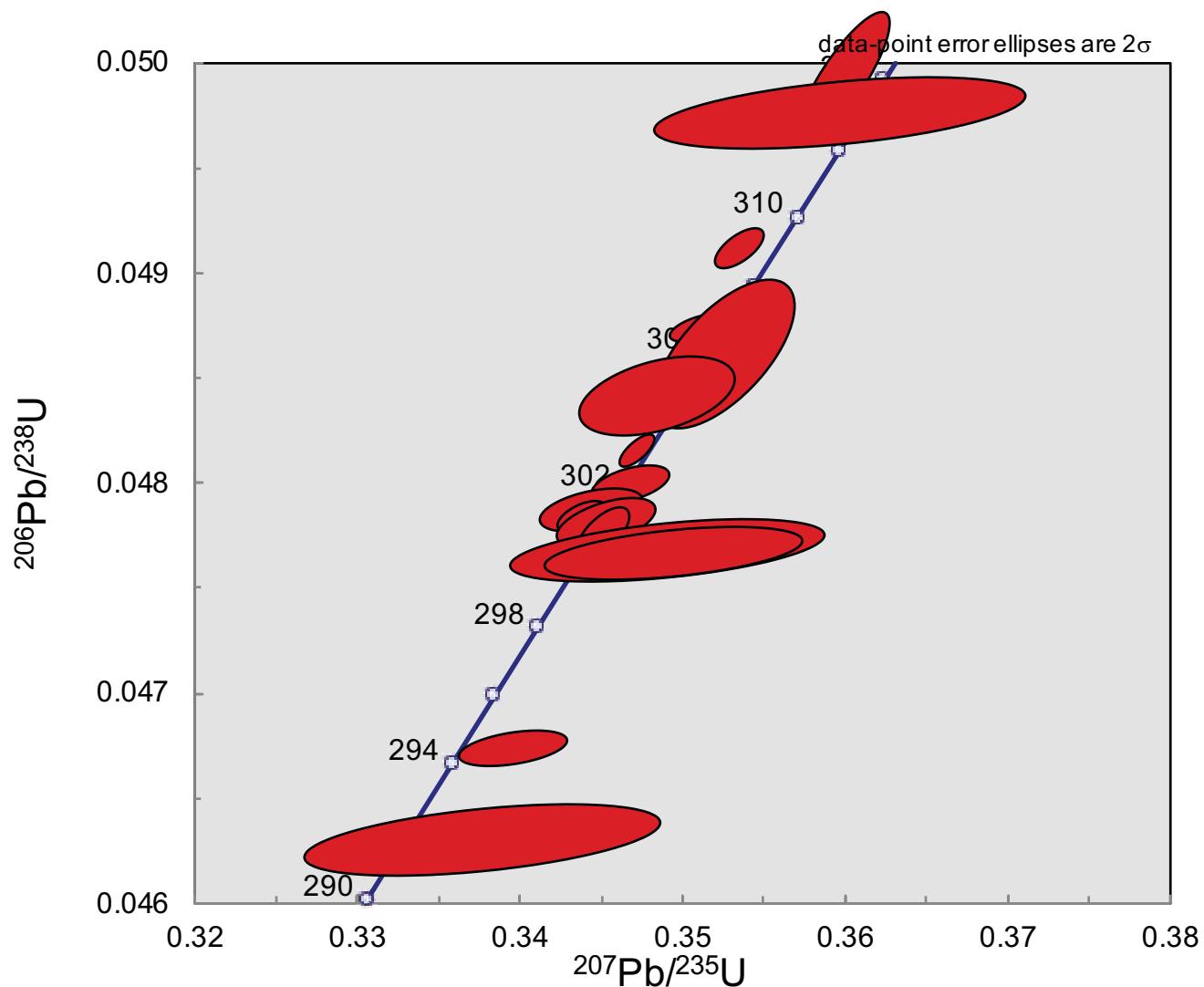


Supplemental Fig. 1

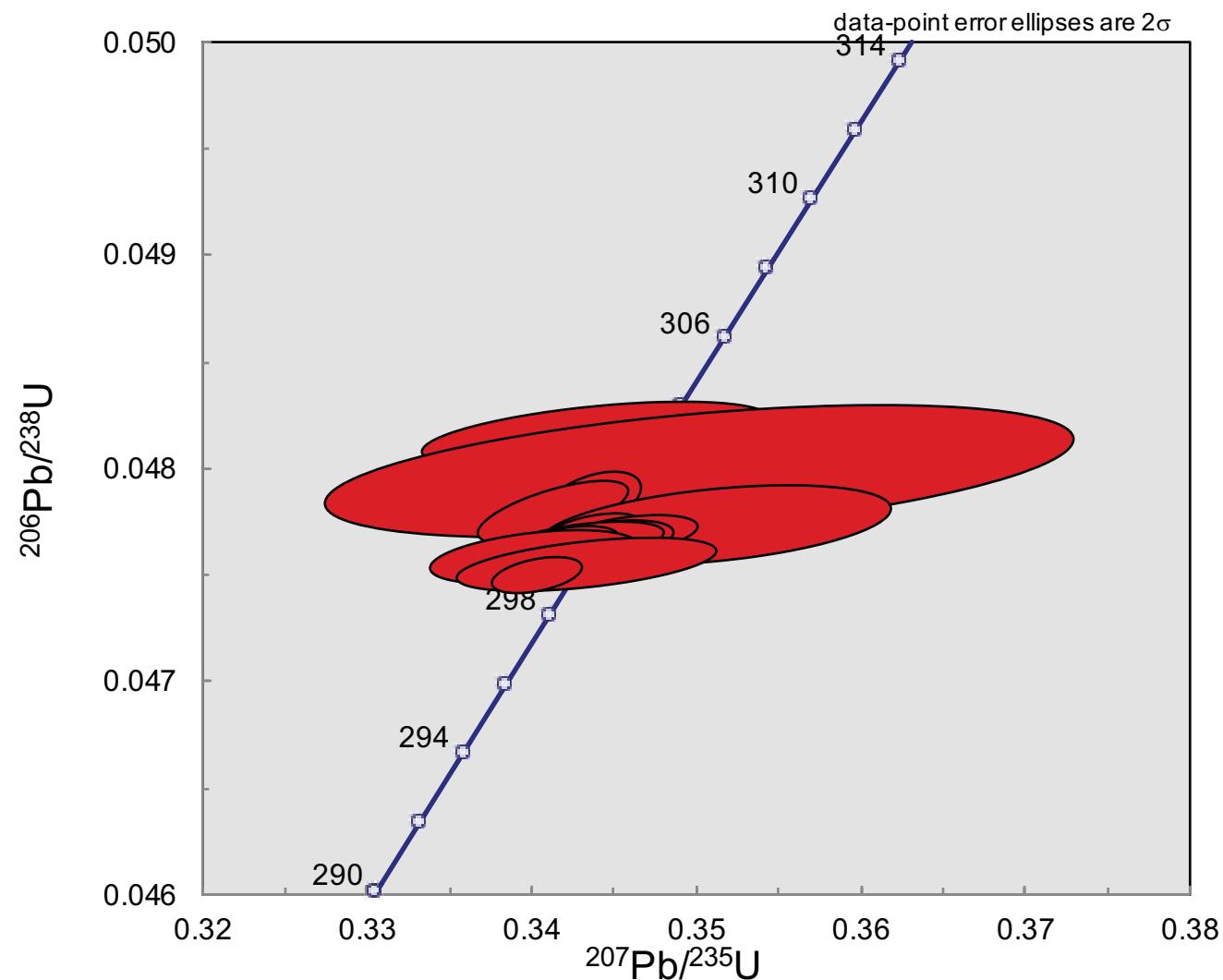
GS-1



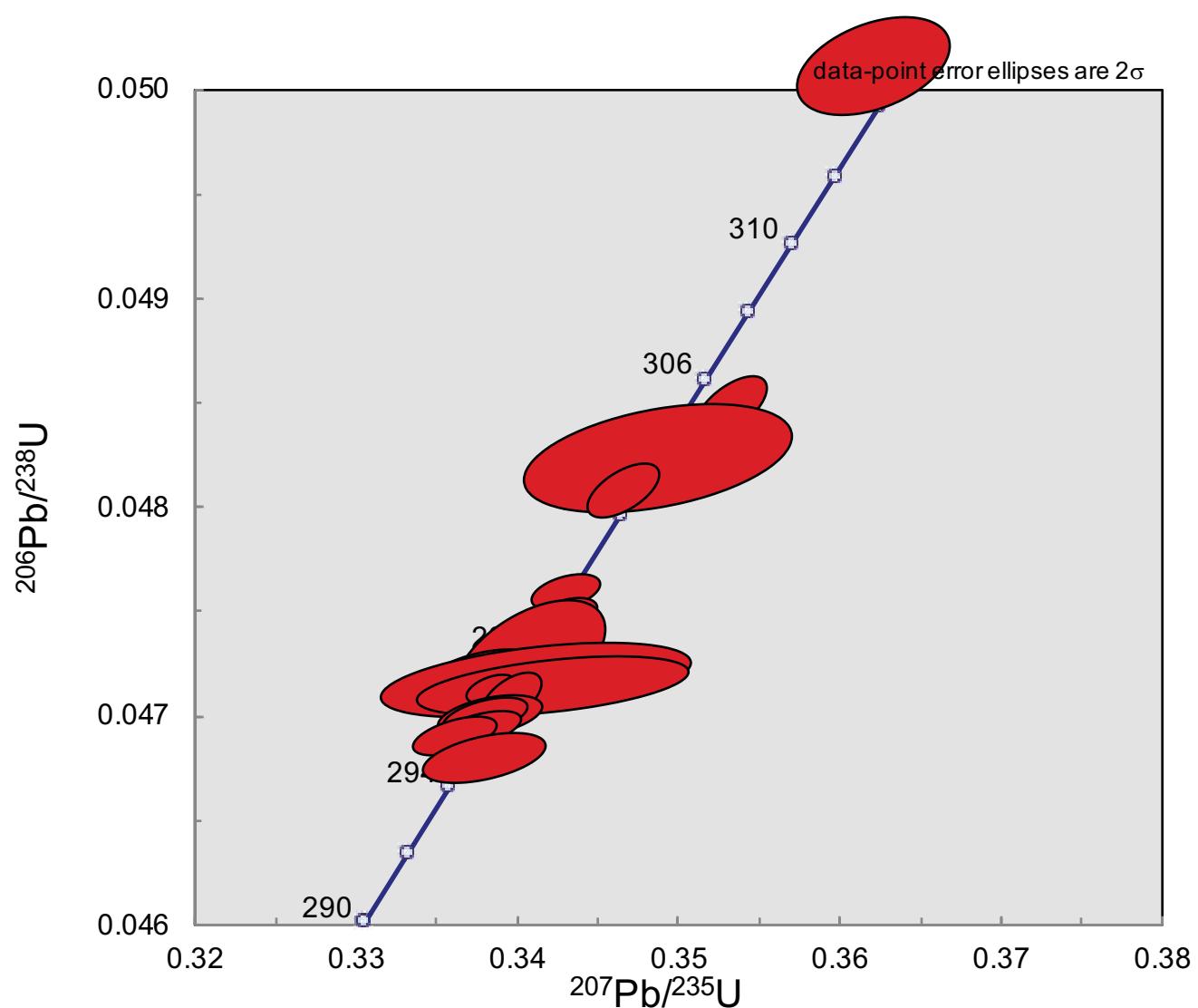
ZWFUN.1



ZWFUN.2



OG-09

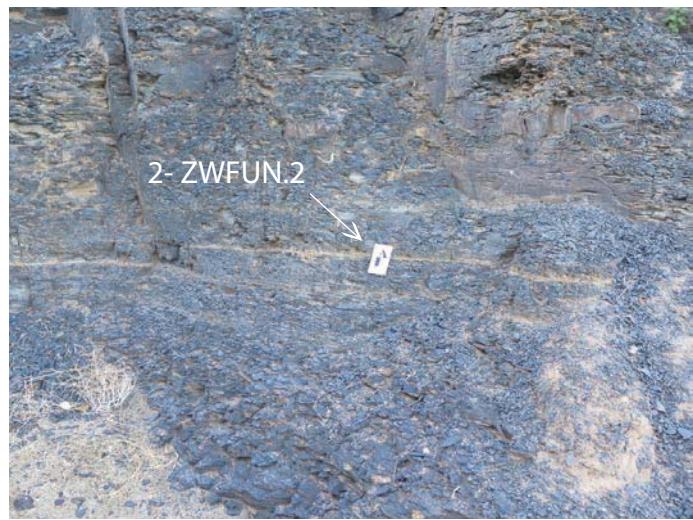
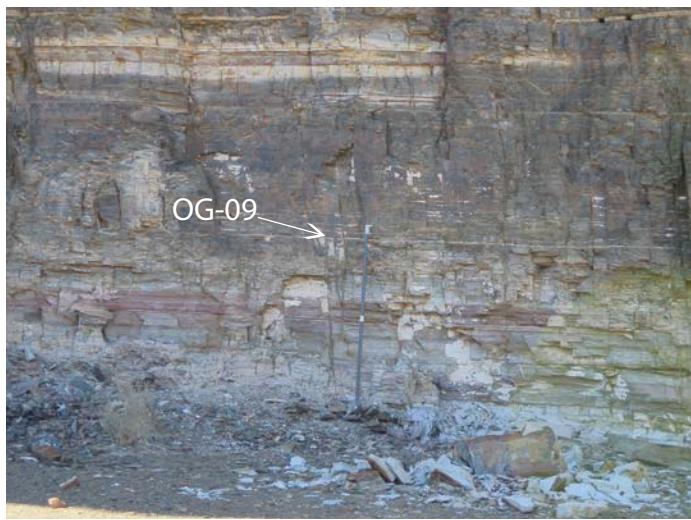


Supplemental Fig. 2

Aranos Basin (Ganigobis Shale)



Karasburg Basin (Zwartbas Shale & Owl Gorge Member)



Supplemental Fig. 3