

Inner non-xenolithic granite: zircon U-Pb age results

Fraction	Dates (Ma)								Composition				Isotopic Ratios							
	206Pb/ 238U <Th> a	±2σ abs	207Pb/ 235U b	±2σ abs	207Pb/ 206Pb b	±2σ abs	Corr. coef.	% disc c	Th/ U d	Pb* (pg) e	Pbc (pg) f	Pb*/ Pbc g	206Pb/ 204Pb h	206Pb/ 238U <Th> ia	±2σ %	207Pb/ 235U i	±2σ %	207Pb/ 206Pb i	±2σ %	
z1	470.94	0.21	470.85	0.62	470.87	3.5	0.31	0.005	0.340	24.408	0.472	51.725	3257.2	0.075789	0.046	0.58997	0.16	0.056495	0.153	
z2	469.28	0.48	469.9	3.4	473.2	19.9	0.17	0.837	0.198	33.347	4.060	8.213	553.0	0.075513	0.107	0.58843	0.91	0.056553	0.899	
z3	468.98	0.17	469.00	0.21	469.57	0.91	0.68	0.146	0.309	50.749	0.248	204.361	12927.5	0.075461	0.038	0.58708	0.06	0.056461	0.026	
z4	469.09	0.30	469.5	1.9	472.0	11.0	0.18	0.640	0.291	45.348	2.951	15.365	993.4	0.075480	0.067	0.58787	0.50	0.056524	0.495	
z5	469.17	0.17	469.33	0.32	470.56	1.7	0.44	0.316	0.102	83.973	0.616	136.299	9142.5	0.075495	0.038	0.58759	0.09	0.056487	0.071	

a Corrected for initial Th/U disequilibrium using radiogenic 208Pb and Th/U[magma] = 3.50000.

b Isotopic dates calculated using $\lambda_{238} = 1.55125E-10$ (Jaffey et al. 1971) and $\lambda_{235} = 9.8485E-10$ (Jaffey et al. 1971).

c % discordance = $100 - (100 * (206Pb/238U \text{ date}) / (207Pb/206Pb \text{ date}))$

d Th contents calculated from radiogenic 208Pb and 230Th-corrected 206Pb/238U date of the sample, assuming concordance between U-Pb Th-Pb systems.

e Total mass of radiogenic Pb.

f Total mass of common Pb.

g Ratio of radiogenic Pb (including 208Pb) to common Pb.

h Measured ratio corrected for fractionation and spike contribution only.

i Measured ratios corrected for fractionation, tracer and blank.

Run_ID	Run_Date	Plateau step	40Ar	±	39Ar	±	38Ar	±	37Ar	±	36Ar	±	40Ar/39Ar	±	40Ar*/39Ar	±	%40Ar*	±	Age	±
<i>Outer Burnbanks granite, muscovite, Age = 468.7 ± 0.3 (83% 39Ar, MSWD 0.8, p 0.6, n7, 2s analytical precision)</i>																				
D =	1.008127	0.000466																		
J =	0.0092051	0.0000192																		
50112-1	10/10/13		1.56861	0.00210	0.05145	0.00017	0.00221	0.00003	0.00036	0.00003	0.00051	0.00003	30.4	0.1	27.5	0.2	90.4	0.7	408.57	2.86
50112-2	10/10/13		2.45437	0.00085	0.07492	0.00011	0.00131	0.00002	0.00041	0.00002	0.00060	0.00002	32.7	0.0	30.4	0.1	92.8	0.2	445.58	1.02
50112-3	10/10/13		3.54393	0.00140	0.11000	0.00014	0.00173	0.00003	0.00036	0.00002	0.00049	0.00001	32.2	0.0	30.9	0.0	95.9	0.1	452.06	0.63
50112-4	11/10/13		8.23991	0.00360	0.25451	0.00018	0.00322	0.00003	0.00018	0.00001	0.00034	0.00001	32.3	0.0	31.9	0.0	98.8	0.1	466.01	0.39
50112-5	11/10/13	*	14.39300	0.00510	0.44349	0.00027	0.00540	0.00002	0.00020	0.00003	0.00040	0.00001	32.4	0.0	32.1	0.0	99.2	0.1	468.61	0.30
50112-6	11/10/13	*	8.99800	0.00300	0.27584	0.00020	0.00355	0.00003	0.00024	0.00001	0.00043	0.00001	32.6	0.0	32.1	0.0	98.6	0.1	468.27	0.37
50112-7	11/10/13	*	13.78028	0.00430	0.42407	0.00031	0.00576	0.00003	0.00023	0.00002	0.00041	0.00002	32.4	0.0	32.2	0.0	99.1	0.1	468.85	0.36
50112-8	11/10/13	*	11.53053	0.00380	0.35436	0.00024	0.00451	0.00002	0.00025	0.00002	0.00040	0.00001	32.5	0.0	32.2	0.0	99.0	0.1	468.88	0.34
50112-9	11/10/13	*	7.57954	0.00290	0.23181	0.00024	0.00275	0.00003	0.00040	0.00002	0.00042	0.00002	32.6	0.0	32.1	0.0	98.4	0.1	468.40	0.52
50112-10	11/10/13	*	10.88539	0.00300	0.33400	0.00029	0.00438	0.00005	0.00037	0.00004	0.00043	0.00002	32.5	0.0	32.2	0.0	98.8	0.1	468.97	0.42
50112-11	11/10/13	*	0.54716	0.00091	0.00835	0.00010	0.00061	0.00003	0.00050	0.00002	0.00091	0.00002	65.4	0.8	33.3	0.8	50.8	1.1	483.05	10.02

Inner non-xenolithic granite, muscovite, Age = 468.4 ± 0.3 (90% 39Ar, MSWD 1.4, p 0.2, n7, 2s analytical precision)

D =	1.008127	0.000466																		
J =	0.0092051	0.0000192																		
50113-1	10/10/13		0.50729	0.00026	0.01408	0.00006	0.00051	0.00002	0.00035	0.00002	0.00044	0.00001	36.0	0.2	26.7	0.2	74.1	0.5	397.26	2.92
50113-2	10/10/13		2.50425	0.00110	0.08391	0.00009	0.00132	0.00002	0.00030	0.00001	0.00045	0.00001	29.8	0.0	28.2	0.1	94.6	0.2	417.42	0.75
50113-3	10/10/13		3.43173	0.00130	0.10861	0.00010	0.00160	0.00003	0.00030	0.00002	0.00044	0.00002	31.6	0.0	30.4	0.1	96.2	0.2	445.48	0.91
50113-4	10/10/13		2.70919	0.00097	0.08341	0.00009	0.00132	0.00003	0.00033	0.00002	0.00036	0.00001	32.4	0.0	31.2	0.0	96.1	0.2	456.09	0.79
50113-5	10/10/13	*	12.90213	0.00510	0.39630	0.00027	0.00494	0.00002	0.00025	0.00002	0.00048	0.00002	32.5	0.0	32.1	0.0	98.9	0.1	468.72	0.37
50113-6	10/10/13	*	13.81090	0.00420	0.42563	0.00025	0.00531	0.00003	0.00024	0.00002	0.00039	0.00002	32.4	0.0	32.1	0.0	99.2	0.1	468.47	0.31
50113-7	10/10/13	*	13.22169	0.00460	0.40765	0.00029	0.00509	0.00002	0.00033	0.00002	0.00039	0.00001	32.4	0.0	32.1	0.0	99.1	0.1	468.16	0.35
50113-8	10/10/13	*	15.05080	0.00440	0.46338	0.00030	0.00576	0.00002	0.00030	0.00002	0.00044	0.00002	32.4	0.0	32.2	0.0	99.1	0.1	468.79	0.32
50113-9	10/10/13	*	24.25067	0.00810	0.75021	0.00046	0.00909	0.00003	0.00022	0.00002	0.00049	0.00001	32.3	0.0	32.1	0.0	99.4	0.0	467.90	0.29
50113-10	10/10/13	*	8.01645	0.00220	0.24319	0.00021	0.00324	0.00003	0.00032	0.00002	0.00063	0.00001	32.9	0.0	32.2	0.0	97.7	0.1	468.81	0.43
50113-11	10/10/13	*	0.57751	0.00036	0.01318	0.00009	0.00085	0.00003	0.00046	0.00002	0.00055	0.00001	43.7	0.3	31.6	0.4	72.1	0.7	461.54	4.98

Pegmatite, K-feldspar, Age = 468.2 ± 0.3 [mini plateau] (37% 39Ar, MSWD 0.9, p 0.5, n5, 2s analytical precision)

D =	1.008127	0.000466																		
J =	0.0092094	0.0000174																		
50114-1	10/14/2013		2.90167	0.00130	0.10001	0.00009	0.00147	0.00002	0.00023	0.00001	0.00062	0.00001	29.0	0.0	27.1	0.0	93.7	0.1	403.39	0.60
50114-2	10/14/2013		5.96456	0.00210	0.21774	0.00016	0.00278	0.00002	0.00020	0.00001	0.00034	0.00001	27.4	0.0	26.9	0.0	98.3	0.1	400.07	0.38
50114-3	10/14/2013		10.96947	0.00410	0.39594	0.00025	0.00488	0.00002	0.00022	0.00001	0.00049	0.00001	27.7	0.0	27.3	0.0	98.7	0.1	405.45	0.30
50114-4	10/14/2013		12.43780	0.00480	0.44361	0.00030	0.00545	0.00002	0.00024	0.00002	0.00046	0.00001	28.0	0.0	27.7	0.0	98.9	0.1	410.68	0.31
50114-5	10/14/2013		3.53649	0.00110	0.12602	0.00010	0.00169	0.00002	0.00028	0.00002	0.00020	0.00001	28.0	0.0	27.6	0.0	98.4	0.1	409.02	0.54
50114-6	10/14/2013		2.99441	0.00092	0.10665	0.00008	0.00147	0.00002	0.00024	0.00002	0.00018	0.00001	28.0	0.0	27.5	0.0	98.2	0.1	408.64	0.60
50114-7	10/14/2013		4.28376	0.00140	0.14667	0.00011	0.00190	0.00002	0.00022	0.00002	0.00023	0.00002	29.2	0.0	28.7	0.0	98.4	0.1	424.03	0.55
50114-8	10/14/2013		4.00552	0.00130	0.13402	0.00011	0.00182	0.00002	0.00023	0.00002	0.00025	0.00001	29.8	0.0	29.3	0.0	98.1	0.1	431.77	0.41
50114-9	10/14/2013		1.84161	0.00048	0.05986	0.00006	0.00090	0.00002	0.00026	0.00002	0.00022	0.00002	30.7	0.0	29.7	0.1	96.6	0.2	436.78	1.05
50114-10	10/14/2013		0.99706	0.00017	0.03075	0.00002	0.00060	0.00002	0.00025	0.00001	0.00025	0.00001	32.4	0.0	30.0	0.1	92.8	0.3	441.71	1.42
50114-11	10/14/2013		3.45390	0.00100	0.10809	0.00007	0.00155	0.00002	0.00024	0.00002	0.00045	0.00001	31.9	0.0	30.7	0.0	96.1	0.1	449.90	0.42
50114-12	10/14/2013		5.51268	0.00180	0.17761	0.00013	0.00236	0.00002	0.00025	0.00002	0.00041	0.00001	31.0	0.0	30.3	0.0	97.8	0.1	445.08	0.44
50114-13	10/14/2013		15.24690	0.00500	0.47455	0.00031	0.00579	0.00002	0.00010	0.00001	0.00043	0.00002	32.1	0.0	31.8	0.0	99.2	0.1	464.57	0.33
50114-14	10/14/2013	*	10.32764	0.00300	0.31720	0.00023	0.00395	0.00002	0.00019	0.00002	0.00034	0.00002	32.5	0.0	32.2	0.0	99.0	0.1	469.55	0.38
50114-15	10/14/2013	*	7.66218	0.00220	0.23539	0.00018	0.00300	0.00002	0.00017	0.00001	0.00028	0.00001	32.5	0.0	32.2	0.0	98.9	0.1	469.00	0.37
50114-16	10/14/2013	*	5.67900	0.00180	0.17333	0.00013	0.00227	0.00002	0.00020	0.00001	0.00030	0.00001	32.7	0.0	32.2	0.0	98.4	0.1	469.66	0.38
50114-17	10/14/2013	*	18.74935	0.00650	0.57694	0.00038	0.00702	0.00002	0.00011	0.00001	0.00073	0.00001	32.5	0.0	32.1	0.0	98.8	0.1	467.93	0.31
50114-18	10/14/2013	*	20.17494	0.00640	0.62127	0.00038	0.00757	0.00002	0.00009	0.00002	0.00064	0.00001	32.4	0.0	32.1	0.0	99.1	0.0	468.52	0.30
50114-19	10/14/2013	*	3.91458	0.00110	0.11352	0.00009	0.00172	0.00002	0.00029	0.00002	0.00091	0.00002	34.4	0.0	32.1	0.0	93.1	0.1	467.78	0.61
50114-20	10/14/2013	*	9.71183	0.00280	0.29818	0.00021	0.00372	0.00002	0.00019	0.00001	0.00042	0.00001	32.5	0.0	32.1	0.0	98.7	0.1	468.38	0.34
50114-21	10/14/2013	*	8.35918	0.00260	0.25728	0.00018	0.00325	0.00002	0.00020	0.00002	0.00033	0.00001	32.4	0.0	32.1	0.0	98.8	0.1	467.83	0.38

Pegmatite muscovite, Age = 468.6 ± 0.7 (60% 39Ar, MSWD 0.6, p 0.8, n10, 2s analytical precision)

D =	1.008127	0.000466																		
J =	0.0092146	0.000019																		
50115-1	12/10/13		3.19323	0.00150	0.11481	0.00011	0.00166	0.00002	0.00030	0.00002	0.00034	0.00001	27.8	0.0	26.9	0.0	96.9	0.1	400.44	0.52
50115-2	12/10/13		2.42690	0.00088	0.07919	0.00010	0.00127	0.00002	0.00034	0.00002	0.00027	0.00002	30.6	0.0	29.6	0.1	96.7	0.2	436.00	0.94
50115-3	12/10/13		2.16611	0.00090	0.06928	0.00008	0.00114	0.00003	0.00032	0.00002	0.00032	0.00001	31.2	0.0	29.9	0.1	95.7	0.2	439.58	0.87
50115-4	12/10/13		4.27636	0.00170	0.13681	0.00013	0.00192	0.00003	0.00028	0.00002	0.00033	0.00001	31.2	0.0	30.5	0.0	97.7	0.1	447.83	0.50
50115-5	12/10/13		3.60989	0.00140	0.10930	0.00010	0.00162	0.00002	0.00029	0.00002	0.00031	0.00002	33.0	0.0	32.2	0.1	97.5	0.1	469.24	0.70
50115-6	12/10/13		2.44635	0.00098	0.07311	0.00008	0.00122	0.00001	0.00031	0.00002	0.00032	0.00002	33.4	0.0	32.1	0.1	96.1	0.2	468.68	0.98
50115-7	12/10/13		1.63945	0.00068	0.04826	0.00006	0.00088	0.00002	0.00030	0.00002	0.00032	0.00002	33.9	0.0	32.0	0.1	94.2	0.3	466.80	1.32
50115-8	12/10/13	*	2.58031	0.00100	0.07712	0.00010	0.00127	0.00002	0.00031	0.00002	0.00033	0.00001	33.4	0.0	32.1	0.1	96.2	0.1	469.00	0.75
50115-9	12/10/13	*	0.84441	0.00023	0.02322	0.00006	0.00057	0.00001	0.00039	0.00002	0.00034	0.00002	36.3	0.1	32.1	0.2	88.3	0.6	468.21	2.83
50115-10	12/10/13	*	2.70211	0.00100	0.08133	0.00008	0.00130	0.00002	0.00034	0.00002	0.00030	0.00002	33.2	0.0	32.1	0.1	96.7	0.2	468.48	1.00
50115-11	12/10/13	*	2.15031	0.00094	0.06330	0.00008	0.00111	0.00002	0.00032	0.00002	0.00040	0.00001	33.9	0.0	32.1	0.1	94.5	0.2	468.15	0.82
50115-12	12/10/13	*	1.25796	0.00058	0.03654	0.00008	0.00077	0.00002	0.00039	0.00003	0.00031	0.00002	34.4	0.1	31.9	0.2	92.7	0.5	465.72	2.47
50115-13	12/10/13	*	1.50030	0.00058	0.04339	0.00006	0.00082	0.00002	0.00036	0.00002	0.00035	0.00002	34.5	0.1	32.2	0.1	93.1	0.3	469.39	1.47
50115-14	12/10/13	*	0.90077	0.00031	0.02435	0.00006	0.00070	0.00003	0.00034	0.00002	0.00040	0.00001	36.9	0.1	32.1	0.2	86.9	0.4	468.69	2.29

Late vein, muscovite, Age = 468.3 ± 0.6 (93% 39Ar, MSWD 1.2, p 0.3, n7, analytical precision)

D =	1.008127	0.000466																		
J =	0.0092146	0.0000166																		
50116-1	10/10/13		0.53399	0.00020	0.01560	0.00005	0.00051	0.00002	0.00032	0.00002	0.00036	0.00001	34.2	0.1	27.4	0.3	80.1	0.7	407.00	3.49
50116-2	10/10/13		0.89437	0.00043	0.02554	0.00006	0.00065	0.00002	0.00028	0.00002	0.00031	0.00002	35.0	0.1	31.4	0.2	89.8	0.5	459.44	2.49
50116-3	10/10/13	*	3.55723	0.00130	0.10768	0.00011	0.00158	0.00002	0.00025	0.00002	0.00035	0.00001	33.0	0.0	32.0	0.0	97.1	0.1	467.79	0.57
50116-4	10/10/13	*	2.90890	0.00120	0.08797	0.00009	0.00135	0.00003	0.00027	0.00002	0.00030	0.00001	33.0	0.0	32.0	0.1	96.9	0.1	467.37	0.68
50116-5	10/10/13	*	3.73224	0.00150	0.11296	0.00012	0.00168	0.00002	0.00034	0.00002	0.00034	0.00002	33.0	0.0	32.1	0.1	97.3	0.1	468.72	0.72
50116-6	10/10/13	*	3.67755	0.00140	0.11108	0.00011	0.00163	0.00002	0.00030	0.00002	0.00035	0.00002	33.1	0.0	32.1	0.1	97.2	0.1	468.92	0.68
50116-7	10/10/13	*	1.76230	0.00073	0.05199	0.00007	0.00097	0.00002	0.00036	0.00002	0.00032	0.00001	33.8	0.0	32.1	0.1	94.7	0.2	468.02	1.20
50116-8	10/10/13	*	1.24871	0.00060	0.03621	0.00007	0.00076	0.00001	0.00037	0.00002	0.00027	0.00001	34.4	0.1	32.3	0.1	93.7	0.2	470.79	1.34
50116-9	10/10/13	*	2.32374	0.00100	0.06980	0.00010	0.00113	0.00003	0.00035	0.00002	0.00028	0.00001	33.2	0.0	32.1	0.1	96.4	0.2	468.03	0.90

Nucleogenic production ratios, OSU TRIGA reactor

(³⁶ Ar/ ³⁷ Ar)Ca	2.650	± 0.2	× 10 ⁻⁴
(³⁹ Ar/ ³⁷ Ar)Ca	6.950	± 0.9	× 10 ⁻⁴
(³⁸ Ar/ ³⁷ Ar)Ca	0.196	± 0.00816	× 10 ⁻⁴
(⁴⁰ Ar/ ³⁹ Ar)K	7.300	± 3	× 10 ⁻⁴
(³⁸ Ar/ ³⁹ Ar)K	1.220	± 0.027	× 10 ⁻²
(³⁶ Ar/ ³⁸ Ar)Cl	320.000		
Ca/K	1.960		
Cl/K	2.900		

Isotopic constants & decay rates

λ(⁴⁰ Kε)/yr	5.757	± 0.016	× 10 ⁻¹¹
λ(⁴⁰ Kβ ⁻)/yr	4.955	± 0.0134	× 10 ⁻¹⁰
λ(⁴⁰ Ktotal)/yr	5.5305		× 10 ⁻¹⁰
λ(³⁷ Ar)/d	0.01975		
λ(³⁹ Ar)/d	7.068		× 10 ⁻⁶
λ(³⁶ Cl)/d	6.308		× 10 ⁻⁹
(⁴⁰ Ar/ ³⁶ Ar)atm	298.56	± 0.31	
(⁴⁰ Ar/ ³⁸ Ar)atm	1583.7	± 2	
⁴⁰ K/Ktotal	0.1167	± 0.001	