

**Supplementary Material**

**Table A6 - Ar/Ar analytical results.**

Relative Abundances	36Ar [fA]	% 1σ	37Ar [fA]	% 1σ	38Ar [fA]	% 1σ	39Ar [fA]	% 1σ	40Ar [fA]	% 1σ	40(r)/39(k) ± 1σ	Age ± 1σ (Ma)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 1σ	
ST004H-2A	0,30 W	0,0085	1217,2606	85,5116	9,0054	0,6812	7,0480	42,6817	0,2302	281,6081	0,0498	6,7063 0,7214	112,2559 11,7079	101,4985	2,1874	0,2143 0,0193
ST004H-2B	0,60 W 4	0,1635	53,2201	62,7364	7,2365	3,8056	2,6060	296,1642	0,1639	1508,0820	0,0310	4,9449 0,0872	83,4414 1,4382	97,0966	15,1975	2,0296 0,1469
ST004H-2C	0,90 W 4	0,1124	75,6293	213,3031	2,0993	5,3091	1,0140	442,8598	0,1621	2213,7359	0,0217	5,1121 0,0574	86,1963 0,9447	102,2338	22,7208	0,8925 0,0188
ST004H-2D	1,20 W 4	0,0483	224,6985	582,4517	1,1116	5,3064	1,4146	438,1137	0,1625	2171,9137	0,0198	5,0336 0,0737	84,9031 1,2150	101,4415	22,4638	0,3231 0,0036
ST004H-2E	1,50 W 4	0,0774	118,5657	587,5312	1,0947	4,6620	0,8672	375,4788	0,1646	1863,4676	0,0259	5,1523 0,0729	86,8583 1,1991	103,7018	19,2491	0,2745 0,0030
ST004H-2F	1,80 W 4	0,0406	165,0125	117,6633	5,0022	1,3541	4,9592	103,7582	0,1693	512,6040	0,0362	5,1486 0,1910	86,7967 3,1436	104,1312	5,3208	0,3789 0,0190
ST004H-2G	2,10 W 4	0,0610	112,1772	34,2420	18,2163	2,6473	2,7807	216,8052	0,1737	1082,1183	0,0273	5,0859 0,0938	85,7639 1,5445	101,8854	11,1257	2,7223 0,4959
ST004H-2H	2,40 W	0,0600	124,3577	0,2077	3138,6477	0,3765	16,2911	25,8154	0,2663	131,0425	0,1080	4,3869 0,8549	74,2149 14,1694	86,4221	1,3249	53,4478 1677,5387
ST004H-2I	2,70 W	0,0997	73,4400	6,7046	122,4144	0,0515	214,8295	6,1524	1,1526	29,5089	0,6213	0,0942 3,5202	1,6254 60,7372	1,9616	0,3155	0,3943 0,4827
ST004H-2J	3,00 W	0,0783	129,9673	64,3492	9,1892	0,0626	172,3959	1,8847	4,7760	10,3840	1,5467	21,0070 16,3856	330,6244 235,6866	372,0409	0,0944	0,0123 0,0013
Σ	0,0102660	2690,174	1754,2854	1,142	24,131013	1,014	1949,7139	0,070	9804,4650	0,011						

**Information on Analysis and Constants Used in Calculations**

Project = G26  
 Analyst = Roberto Siqueira  
 Sample = st-004h\_2  
 Material = Biotite  
 Lithology = Tefritolite  
 Mass Discrimination Law = LIN  
 Irradiation = SP2 (20/07/2013)  
 J = 0.00955000 ± 0.00005000  
 FC = 28.305 ± 0.036 Ma  
 Age Equations = Min et al. (2000)  
 Negative Intensities = Allowed  
 Decay Constant 40K = 5.530 ± 0.048 E-10 1/a  
 Decay Constant 39Ar = 2.940 ± 0.016 E-07 1/h  
 Decay Constant 37Ar = 8.230 ± 0.012 E-04 1/h  
 Decay Constant 36Cl = 2.257 ± 0.015 E-06 1/a  
 Decay Activity 40K(EC,β<sup>+</sup>) = 3.310 ± 0.040 1/g  
 Decay Activity 40K(β<sup>-</sup>) = 28.270 ± 0.050 1/g  
 Atmospheric Ratio 40/36(a) = 298.50 ± 1.49  
 Atmospheric Ratio 38/36(a) = 0.1869  
 Production Ratio 39/37(ca) = 0.000662 ± 0.000005  
 Production Ratio 36/37(ca) = 0.000262 ± 0.000003  
 Production Ratio 40/39(k) = 0.000070 ± 0.000005  
 Production Ratio 38/39(k) = 0.012110  
 Production Ratio 36/38(c) = 262.80 ± 1.71  
 Scaling Ratio K/Ca = 0.430  
 Abundance Ratio 40K/K = 1.1700 ± 0.0100 E-04  
 Atomic Weight K = 39.0983 ± 0.0001 g

Instrument = Argus VI (ThermoScientific, Bremen DE)  
 Extraction Method = Step Heating by Laser Verdi 6W

Results	40(a)/36(a) ± 1σ	40(r)/39(k) ± 1σ	Age ± 1σ (Ma)	Σσ	39Ar(k) (%n)	K/Ca ± 1σ
<b>Age Plateau</b>		5,07964 ± 0,03247 ± 0,64%	85,66 ± 0,69 ± 0,81%	0,85	96,08	0,305 ± 0,037
			Full External Error ± 1,15	1,63	1σ Confidence Limit	
			Analytical Error ± 0,53	1,0000	Error Magnification	
<b>Total Fusion Age</b>		5,10028 ± 0,04205 ± 0,82%	86,00 ± 0,82 ± 0,95%	10	10	0,478 ± 0,005
			Full External Error ± 1,23			
			Analytical Error ± 0,69			
<b>Normal Isochron</b>	68,20 ± 43,06 ± 63,13%	5,01541 ± 0,01912 ± 0,38%	84,60 ± 0,54 ± 0,63%	0,55	96,08	
			Full External Error ± 1,05	1,71	1σ Confidence Limit	
			Analytical Error ± 0,32	1,0000	Error Magnification	
				1	Number of Iterations	
				0,0000020937	Convergence	
<b>Inverse Isochron</b>		5,03417 ± 0,02008 ± 0,40%	84,91 ± 0,55 ± 0,64%	0,51	96,08	
<b>Clustered Points</b>	137,06 ± 50,11 ± 36,56%		Full External Error ± 1,06	1,71	1σ Confidence Limit	
			Analytical Error ± 0,33	1,0000	Error Magnification	
				4	Number of Iterations	
				0,0000376672	Convergence	
				3%	Spreading Factor	

