Additional data for GSA Data Repository

Analytical method of $^{40}Ar/^{39}Ar$ laser dating

Feldspars, biotites or amphiboles (kaersutite) were separated from intrusive rocks and lavas and 5 to 11 single crystals analyzed by the $^{40}Ar/^{39}Ar$ laser method. All analyses were carried out at the Geomar Tephrochronology Laboratory. Of the 22 samples analyzed, 17 show initial $^{40}Ar/^{36}Ar_t$ identical to the atmospheric value of 295.5 within 1σ or 2σ, five samples within 3σ error limits. Their individual isochron ages and mean apparent ages overlap within 1σ errors. Analytical scatter, as expressed by the MSWD, varies greatly from 0.3 to 13.3, and for three samples it is hence significantly larger than would be expected from homogeneous populations (MSWD≤3). For two of these samples, this scatter probably reflects primarily heterogeneous argon isotope compositions ("ages") of the crystal populations (xenocrystic contamination or partial thermal resetting due to heat transfer from neighbouring intrusions), whereas for the other sample, the high MSWD is probably due to irradiation parameters. While the irradiation parameter J was determined for the average crystal position in 5 mm diameter moulds. In these cases the effective neutron dose of each crystal may deviate up to ca. 5% due to an observed significant lateral neutron flux gradient.

Ar isotope compositions, apparent ages and 1σ-errors of individual feldspars are listed below. $^{40}Ar^*$ denotes the radiogenic ^{40}Ar produced only by decay of ^{40}K present in the sample; Vol.$^{39}Ar_K$ denotes the blank-corrected volume in ccSTP of the ^{39}Ar produced from ^{39}K by irradiation, typical system blank for ^{39}Ar is 6.5E-14 ccSTP; Ar_{atmos} denotes the amount of atmospheric ^{40}Ar present in the sample assuming an atmospheric $^{40}Ar/^{36}Ar$ ratio of 295.5. Data are normalized to $J = 1.0 \times 10^{-3}$.

TABLE 1. ANALYTICAL DATA FOR $^{40}Ar/^{39}Ar$ SINGLE-CRYSTAL LASER FUSION

Sample (Mineral)	Apparent age [a]	1σ-error [a]	$^{40}Ar^*/^{39}Ar_K$	Vol. $^{39}Ar_K$	Ar_{atmos} [%]	Ca/K
GCCS-1	1.35E+07	7.81E+04	8.86E+00	1.71E-11	1.60E+01	1.85E-02
Feldspar	1.34E+07	9.41E+04	8.80E+00	2.32E-11	1.84E+01	1.69E-02
	1.35E+07	1.88E+05	8.87E+00	9.30E-12	1.50E+01	4.34E-02
	1.37E+07	1.59E+05	8.99E+00	1.91E-11	3.81E+01	2.40E-02
	1.37E+07	1.74E+05	9.01E+00	1.23E-11	1.65E+01	1.93E-02
	1.35E+07	1.38E+05	8.89E+00	8.72E-12	1.49E+01	2.55E-02
	1.33E+07	1.06E+05	8.72E+00	1.37E-11	2.17E+01	2.25E-02
	1.36E+07	9.09E+04	8.94E+00	1.89E-11	1.39E+01	1.91E-02
	1.35E+07	2.07E+05	8.90E+00	1.27E-11	1.88E+01	2.09E-02

Mean apparent age [Ma] = 13.49 ± 0.04
MSWD = 1.2
$^{36}Ar/^{40}Ar$ vs $^{39}Ar/^{40}Ar$ isochron age [Ma] = 13.45 ± 0.12 Ma
MSWD = 1.6
$^{40}Ar/^{36}Ar_t$ = 300 ± 10

Sample (Mineral)	Apparent age [a]	1σ-error [a]	$^{40}Ar^{*}/^{39}Ar_K$	Vol. $^{39}Ar_K$	Ar_{atmos} [%]	Ca/K
GCCS-35A	1.27E+07	5.39E+05	3.30E+00	9.36E-12	3.19E+01	9.80E+00
Amphibole	1.27E+07	2.48E+05	3.28E+00	4.63E-11	6.67E+01	9.40E+00
	1.21E+07	4.55E+05	3.14E+00	2.03E-11	6.73E+01	8.08E+00
	1.22E+07	2.56E+05	3.16E+00	3.20E-11	4.92E+01	9.03E+00
	1.18E+07	3.70E+05	3.05E+00	2.37E-11	6.39E+01	6.26E+00
	1.20E+07	2.04E+05	3.12E+00	4.36E-11	7.29E+01	7.47E+00
	1.20E+07	3.31E+05	3.11E+00	1.76E-11	3.54E+01	1.07E+01
	1.23E+07	2.89E+05	3.19E+00	2.94E-11	4.05E+01	4.67E+00
	1.22E+07	6.03E+05	3.16E+00	9.74E-12	2.49E+01	1.16E+01
	1.27E+07	2.63E+05	3.28E+00	4.97E-11	8.33E+01	7.02E+00
	1.23E+07	6.81E+05	3.18E+00	8.49E-12	5.70E+01	1.07E+01

Mean apparent age [Ma] = 12.27 ± 0.10
MSWD = 1.0
$^{36}Ar/^{40}Ar$ vs $^{39}Ar/^{40}Ar$ isochron age [Ma] = 12.11 ± 0.17 Ma
MSWD = 1.0
$^{40}Ar/^{36}Ar_t$ = 297.5 ± 1.6

GCCS-391	1.19E+07	1.53E+05	7.20E+00	1.07E-11	3.17E+00	1.62E-02
Feldspar	1.27E+07	1.07E+06	7.71E+00	1.88E-11	5.35E-01	1.01E-01
	1.19E+07	3.54E+04	7.22E+00	3.18E-11	1.27E+00	4.61E-02
	1.20E+07	5.13E+04	7.24E+00	2.51E-11	1.65E+00	5.29E-02
	1.20E+07	8.38E+04	7.25E+00	1.44E-11	1.90E+00	4.06E-02
	1.22E+07	1.20E+05	7.41E+00	9.50E-12	6.13E+00	5.98E-02
	1.21E+07	1.84E+05	7.30E+00	7.83E-12	1.70E+00	6.42E-02
	1.19E+07	5.37E+04	7.23E+00	2.25E-11	2.51E+00	4.08E-02
	1.19E+07	6.96E+04	7.21E+00	1.90E-11	1.55E+00	2.92E-02
	1.22E+07	8.74E+04	7.37E+00	1.37E-11	1.84E+01	6.54E-02

Mean apparent age [Ma] = 11.96 ± 0.03
MSWD = 1.7
$^{36}Ar/^{40}Ar$ vs $^{39}Ar/^{40}Ar$ isochron age [Ma] = 11.92 ± 0.03 Ma
MSWD = 0.6
$^{40}Ar/^{36}Ar_t$ = 327 ± 11

GCCS-384	1.17E+07	7.23E+04	7.09E+00	2.93E-11	3.19E+00	3.48E-02
Feldspar	1.18E+07	4.25E+04	7.12E+00	3.72E-11	3.67E+00	3.76E-02
	1.16E+07	4.61E+04	7.05E+00	3.28E-11	1.03E+01	2.68E-02
	1.17E+07	7.99E+04	7.06E+00	1.47E-11	5.21E+00	9.25E-03
	1.17E+07	4.52E+04	7.07E+00	2.58E-11	3.38E+00	6.93E-02

Mean apparent age [Ma] = 11.70 ± 0.02
MSWD = 1.0
$^{36}Ar/^{40}Ar$ vs $^{39}Ar/^{40}Ar$ isochron age [Ma] = 11.75 ± 0.04 Ma
MSWD = 0.9
$^{40}Ar/^{36}Ar_t$ = 273 ± 16

GCCS-383	9.97E+06	2.71E+04	6.03E+00	6.81E-11	2.18E+00	3.19E-02
Feldspar	1.00E+07	1.80E+04	6.06E+00	1.84E-10	7.50E+00	2.17E-02
	9.99E+06	2.00E+04	6.05E+00	1.52E-10	8.38E+00	3.59E-02
	9.96E+06	2.27E+04	6.03E+00	5.61E-11	5.56E+00	5.06E-02
	1.01E+07	2.89E+04	6.09E+00	3.80E-11	4.22E+00	1.07E-02
	1.00E+07	2.97E+04	6.07E+00	5.21E-11	1.04E+01	1.93E-02
	9.97E+06	6.42E+04	6.03E+00	3.23E-11	1.25E+01	1.22E-02
	1.01E+07	3.59E+04	6.10E+00	9.16E-11	2.06E+01	1.37E-02
	9.99E+06	4.56E+04	6.05E+00	4.26E-11	9.89E+00	1.23E-02
	9.97E+06	3.75E+04	6.03E+00	4.38E-11	6.41E+00	1.76E-02
	9.94E+06	3.09E+04	6.02E+00	8.10E-11	2.09E+01	4.85E-02

Mean apparent age [Ma] = 9.99 ± 0.01
MSWD = 1.8
$^{36}Ar/^{40}Ar$ vs $^{39}Ar/^{40}Ar$ isochron age [Ma] = 9.99 ± 0.02
MSWD = 2.2
$^{40}Ar/^{36}Ar_t$ = 298 ± 5

Sample (Mineral)	Apparent age [a]	1 σ-error [a]	$^{40}Ar^{*}/^{39}Ar_K$	Vol. $^{39}Ar_K$	Ar_{atmos} [%]	Ca/K
GCCS-57	9.89E+06	5.81E+04	2.56E+00	1.12E-10	2.13E+01	7.27E-02
Biotite	9.95E+06	3.98E+04	2.58E+00	2.53E-10	3.42E+01	1.21E-03
	9.84E+06	2.67E+04	2.55E+00	2.12E-10	1.28E+01	4.96E-03
	9.89E+06	4.83E+04	2.57E+00	8.26E-11	7.72E+00	4.88E-03
	9.82E+06	5.92E+04	2.55E+00	1.05E-10	1.40E+01	2.25E-03
	9.88E+06	3.82E+04	2.56E+00	2.22E-10	1.83E+01	9.63E-03
	9.91E+06	5.92E+04	2.57E+00	9.54E-11	2.12E+01	1.55E-01
	9.82E+06	1.03E+05	2.55E+00	5.21E-11	2.00E+01	2.84E-03
	9.88E+06	8.56E+04	2.56E+00	9.31E-11	1.64E+01	1.15E-03
	9.89E+06	8.57E+04	2.56E+00	7.49E-11	1.43E+01	1.25E-03
	9.91E+06	1.27E+05	2.58E+00	5.20E-11	1.88E+01	3.62E-03
Mean apparent age [Ma] = 9.88 ± 0.02						
MSWD = 0.8						
$^{36}Ar/^{40}Ar$ vs $^{39}Ar/^{40}Ar$ isochron age [Ma] = 9.81 ± 0.04						
MSWD = 0.3						
$^{40}Ar/^{36}Ar_t$ = 303.5 ± 3.2						
GCCS-368	9.65E+06	7.15E+04	2.50E+00	6.23E-11	8.37E+00	4.94E-02
Feldspar	9.78E+06	5.35E+04	2.54E+00	8.28E-11	3.50E+00	4.39E-02
	9.69E+06	3.99E+04	2.51E+00	1.50E-10	6.78E+00	5.00E-02
	9.81E+06	3.05E+04	2.54E+00	1.83E-10	2.14E+00	4.28E-02
	9.71E+06	3.19E+04	2.51E+00	2.06E-10	6.21E+00	3.87E-02
	9.83E+06	3.37E+04	2.55E+00	1.92E-10	9.37E-01	3.44E-02
	9.79E+06	3.42E+04	2.53E+00	2.32E-10	6.13E+00	3.92E-02
	9.77E+06	4.41E+04	2.54E+00	1.85E-10	1.47E+01	3.11E-02
	9.84E+06	3.89E+04	2.55E+00	2.97E-10	2.07E+01	3.77E-02
	9.79E+06	3.79E+04	2.53E+00	3.29E-10	1.73E+01	4.20E-02
Mean apparent age [Ma] = 9.78 ± 0.02						
MSWD = 2.0						
$^{36}Ar/^{40}Ar$ vs $^{39}Ar/^{40}Ar$ isochron age [Ma] = 9.77 ± 0.04 Ma						
MSWD = 2.6						
$^{40}Ar/^{36}Ar_t$ = 298.9 ± 6.7						
GCCS-43	9.66E+06	3.30E+04	5.99E+00	1.45E-10	2.81E+01	2.29E-02
Feldspar	9.61E+06	2.60E+04	5.95E+00	2.98E-10	2.19E+01	4.30E-02
	9.64E+06	2.60E+04	5.97E+00	1.34E-10	1.02E+01	1.93E-02
	9.62E+06	4.50E+04	5.96E+00	4.10E-11	3.00E+00	1.67E-02
	9.67E+06	4.70E+04	6.00E+00	5.66E-11	8.48E+00	1.41E-02
	9.66E+06	2.50E+04	5.99E+00	8.94E-11	6.17E+00	3.22E-02
	9.65E+06	2.70E+04	5.98E+00	1.26E-10	2.14E+01	3.22E-02
	9.59E+06	2.40E+04	5.94E+00	1.32E-10	1.29E+01	3.01E-02
	9.68E+06	2.50E+04	6.00E+00	1.27E-10	1.29E+01	2.19E-02
	9.65E+06	3.80E+04	5.98E+00	1.63E-10	4.11E+01	4.06E-02
	9.67E+06	2.70E+04	5.99E+00	2.40E-10	2.28E+01	4.03E-02
	9.78E+06	3.00E+04	6.11E+00	7.96E-11	4.87E+01	2.31E-02
	9.64E+06	2.90E+04	6.03E+00	2.25E-10	3.38E+01	5.29E-02
	9.69E+06	2.00E+04	6.06E+00	1.17E-10	2.46E+01	1.51E-02
	9.65E+06	2.30E+04	6.03E+00	2.36E-10	2.94E+01	1.49E-02
	9.73E+06	3.80E+04	6.08E+00	4.94E-11	2.84E+01	1.49E-02
	9.61E+06	4.40E+04	6.00E+00	6.92E-11	5.09E+01	3.36E-02
	9.68E+06	8.90E+04	6.05E+00	8.99E-11	6.11E+01	3.18E-02
	9.67E+06	6.00E+04	6.04E+00	1.41E-10	4.46E+01	3.02E-02
	9.64E+06	2.50E+04	6.02E+00	1.59E-10	1.35E+01	1.85E-02
	9.74E+06	5.60E+04	6.09E+00	1.45E-10	6.16E+01	2.48E-02
	9.70E+06	2.80E+04	6.06E+00	2.01E-10	3.32E+01	2.22E-02
	9.62E+06	8.40E+04	6.93E+00	4.64E-11	2.38E+01	3.40E-02
	9.75E+06	8.10E+04	7.02E+00	3.24E-11	5.48E+00	5.19E-02
	9.66E+06	4.70E+04	6.96E+00	1.12E-10	3.35E+01	5.05E-02
	9.67E+06	4.70E+04	6.96E+00	9.54E-11	2.01E+01	5.04E-02
	9.62E+06	5.00E+04	6.93E+00	1.15E-10	2.45E+01	6.00E-02
	9.68E+06	5.00E+04	6.97E+00	1.78E-10	2.33E+01	3.40E-02
	9.64E+06	6.40E+04	6.95E+00	1.74E-10	2.42E+01	2.83E-02

Sample (Mineral)	Apparent age [a]	1σ-error [a]	$^{40}Ar^*/^{39}Ar_K$	Vol. $^{39}Ar_K$	Ar_{atmos} [%]	Ca/K
	9.72E+06	5.70E+04	7.00E+00	1.25E-10	1.58E+01	3.22E-02
	9.70E+06	6.80E+04	6.99E+00	2.07E-10	3.67E+01	2.44E-02
	9.68E+06	6.40E+04	6.97E+00	1.41E-10	3.13E+01	3.03E-02
	9.69E+06	6.30E+04	6.98E+00	1.20E-10	2.62E+01	3.08E-02
	9.69E+06	5.70E+04	6.98E+00	2.50E-10	2.90E+01	1.69E-02
	9.65E+06	6.80E+04	6.95E+00	1.00E-10	2.91E+01	3.02E-02
	9.68E+06	6.30E+04	6.97E+00	1.14E-10	2.67E+01	2.04E-02
	9.67E+06	6.30E+04	6.97E+00	5.51E-11	2.19E+01	1.96E-01
	9.59E+06	8.50E+04	5.47E+00	2.83E-10	3.72E+01	3.10E-02
	9.68E+06	9.20E+04	5.63E+00	1.44E-10	4.46E+01	9.82E-02
	9.34E+06	1.10E+05	6.34E+00	1.77E-10	6.79E+01	2.38E-02
	9.62E+06	1.40E+05	6.00E+00	8.20E-11	6.12E+01	2.83E-02
	9.65E+06	1.30E+05	5.93E+00	1.06E-10	5.96E+01	3.60E-02
	9.67E+06	7.60E+04	6.04E+00	1.28E-10	5.34E+00	2.94E-02
	9.67E+06	1.10E+05	5.98E+00	6.32E-11	5.63E+01	3.15E-02
	9.69E+06	1.10E+05	6.03E+00	7.96E-11	2.05E+01	1.39E-02
	9.70E+06	1.10E+05	6.08E+00	1.18E-10	3.59E+01	3.10E-02
	9.71E+06	9.70E+04	6.06E+00	8.59E-11	3.30E+01	2.28E-02
	9.80E+06	1.00E+05	6.13E+00	7.87E-11	4.35E+01	2.04E-02
	9.48E+06	1.00E+05	5.45E+00	1.71E-10	6.09E+01	6.06E-02
	9.55E+06	9.40E+04	5.60E+00	1.91E-10	5.57E+01	2.84E-02
	9.59E+06	7.80E+04	5.21E+00	1.63E-10	4.60E+01	1.99E-02
	9.64E+06	7.60E+04	6.45E+00	2.68E-10	4.19E+01	1.92E-02
	9.64E+06	8.30E+04	6.60E+00	1.84E-10	4.87E+01	4.79E-02
	9.66E+06	7.00E+04	5.25E+00	1.19E-10	3.76E+01	1.69E-02
	9.67E+06	9.10E+04	5.26E+00	1.22E-10	3.32E+01	3.44E-02
	9.68E+06	8.70E+04	5.26E+00	9.04E-11	4.48E+01	3.70E-02
	9.68E+06	1.10E+05	5.26E+00	1.33E-10	4.83E+01	2.47E-02
	9.69E+06	8.40E+04	5.26E+00	9.50E-11	3.98E+01	2.20E-02
	9.73E+06	8.30E+04	5.29E+00	1.51E-10	4.94E+01	5.17E-02
	9.76E+06	6.80E+04	5.30E+00	1.26E-10	2.87E+01	1.81E-02
	9.76E+06	7.10E+04	5.30E+00	9.45E-11	2.50E+01	3.07E-02
	9.60E+06	1.50E+05	5.49E+00	1.79E-10	6.26E+01	2.53E-02
	9.66E+06	1.60E+05	5.52E+00	1.86E-10	6.82E+01	3.78E-02
	9.68E+06	7.50E+04	5.53E+00	1.93E-10	2.03E+01	2.11E-02
	9.73E+06	9.70E+04	5.56E+00	1.69E-10	3.87E+01	3.27E-02
	9.76E+06	9.70E+04	5.58E+00	1.71E-10	4.41E+01	2.89E-02

Mean apparent age [Ma] = 9.664 ± 0.006
MSWD = 1.1
$^{36}Ar/^{40}Ar$ vs $^{39}Ar/^{40}Ar$ isochron age [Ma] = 9.65 ± 0.03 Ma
MSWD = 1.5
$^{40}Ar/^{36}Ar_t = 296.4 \pm 0.6$

GCCS-50	9.77E+06	4.25E+04	5.91E+00	3.91E-11	1.90E+01	2.32E-02
Feldspar	9.60E+06	1.94E+04	5.81E+00	2.09E-10	1.48E+01	1.83E-02
	9.41E+06	3.80E+04	5.70E+00	1.66E-10	4.17E+01	2.12E-02
	9.61E+06	2.58E+04	5.82E+00	9.35E-11	1.33E+01	2.76E-02
	9.59E+06	2.70E+04	5.80E+00	7.76E-11	8.67E+00	2.20E-02
	9.47E+06	1.70E+04	5.73E+00	8.91E-11	1.48E+01	1.78E-02
	9.52E+06	3.23E+04	5.77E+00	8.23E-11	9.72E+00	1.80E-02
	9.47E+06	2.97E+04	5.73E+00	7.12E-11	1.87E+01	7.91E-03
	9.40E+06	6.16E+04	5.69E+00	7.36E-11	3.75E+01	6.32E-03

Mean apparent age [Ma] = 9.54 ± 0.03
MSWD = 11
$^{36}Ar/^{40}Ar$ vs $^{39}Ar/^{40}Ar$ isochron age [Ma] = 9.58 ± 0.05
MSWD = 13
$^{40}Ar/^{36}Ar_t = 289 \pm 7$

Sample (Mineral)	Apparent age [a]	1σ-error [a]	$^{40}Ar^*/^{39}Ar_K$	Vol. $^{39}Ar_K$	Ar_{atmos} [%]	Ca/K
GCCS-378	9.39E+06	3.26E+04	2.40E+00	1.21E-10	3.35E+00	7.79E-03
Feldspar	9.44E+06	4.38E+04	2.42E+00	1.82E-10	1.00E+00	1.03E-02
	9.39E+06	2.98E+04	2.41E+00	1.90E-10	9.74E+00	8.29E-03
	9.48E+06	5.19E+04	2.42E+00	1.77E-10	3.89E+01	7.36E-03
	9.38E+06	8.63E+04	2.40E+00	1.15E-10	2.22E+01	9.40E-03
	9.40E+06	5.88E+04	2.40E+00	8.53E-11	6.94E+00	7.62E-03
	9.37E+06	6.88E+04	2.40E+00	7.34E-11	2.21E+00	9.77E-03
	9.33E+06	1.03E+05	2.38E+00	6.72E-11	1.16E+01	6.18E-03
	9.63E+06	1.04E+05	2.46E+00	5.37E-11	2.10E+01	1.05E-02
Mean apparent age [Ma] = 9.41 ± 0.02						
MSWD = 1.1						
$^{36}Ar/^{40}Ar$ vs $^{39}Ar/^{40}Ar$ isochron age [Ma] = 9.39 ± 0.03						
MSWD = 0.9						
$^{40}Ar/^{36}Ar_t = 299.9 \pm 2.8$						
GCCS-95	9.31E+06	9.57E+04	6.02E+00	4.95E-11	4.54E+01	2.07E-02
Feldspar	9.28E+06	5.59E+04	5.99E+00	6.15E-11	4.08E+01	2.50E-02
	9.33E+06	7.40E+04	6.03E+00	5.28E-11	2.88E+01	1.97E-02
	9.31E+06	6.13E+04	6.02E+00	3.94E-11	3.23E+01	7.32E-02
	9.22E+06	1.16E+05	5.96E+00	5.41E-11	8.03E+01	1.77E-01
	9.20E+06	1.07E+05	5.95E+00	6.02E-11	5.75E+01	3.72E-02
	9.39E+06	5.47E+04	6.07E+00	6.91E-11	4.27E+01	1.89E-02
	9.43E+06	8.22E+04	6.09E+00	3.66E-11	3.85E+01	2.60E-02
	9.28E+06	7.24E+04	6.00E+00	2.78E-11	1.89E+01	2.80E-02
	9.01E+06	7.99E+04	5.82E+00	9.11E-11	4.71E+01	1.57E-02
Mean apparent age [Ma] = 9.29 ± 0.03						
MSWD = 2.2						
$^{36}Ar/^{40}Ar$ vs $^{39}Ar/^{40}Ar$ isochron age [Ma] = 9.32 ± 0.06						
MSWD = 2.7						
$^{40}Ar/^{36}Ar_t = 294.5 \pm 1.7$						
GCCS-375	9.38E+06	1.00E+05	2.40E+00	1.64E-10	5.71E+01	1.03E-01
Feldspar	9.20E+06	4.46E+04	2.35E+00	3.74E-10	3.22E+01	9.56E-02
	9.12E+06	3.16E+04	2.33E+00	2.36E-10	2.11E+00	1.97E-01
	9.32E+06	1.02E+05	2.39E+00	1.29E-10	5.04E+01	8.69E-02
	9.23E+06	3.40E+04	2.37E+00	1.44E-10	7.37E+00	1.92E-01
	9.18E+06	9.51E+04	2.35E+00	8.61E-11	1.31E+01	1.43E-01
	9.34E+06	1.26E+05	2.39E+00	8.48E-11	4.96E+01	1.39E-01
	9.37E+06	1.93E+05	2.40E+00	3.47E-11	1.49E+00	1.13E-01
	9.21E+06	8.19E+04	2.36E+00	7.34E-11	1.54E+01	1.08E-01
	9.35E+06	2.25E+05	2.39E+00	2.71E-11	1.57E+01	1.48E-01
	9.21E+06	1.65E+05	2.36E+00	3.76E-11	1.61E+01	1.38E-01
Mean apparent age [Ma] = 9.20 ± 0.02						
MSWD = 1.4						
$^{36}Ar/^{40}Ar$ vs $^{39}Ar/^{40}Ar$ isochron age [Ma] = 9.16 ± 0.03						
MSWD = 0.8						
$^{40}Ar/^{36}Ar_t = 300.3 \pm 1.8$						

Sample (Mineral)	Apparent age [a]	1σ-error [a]	$^{40}Ar^{*}/^{39}Ar_K$	Vol. $^{39}Ar_K$	Ar_{atmos} [%]	Ca/K
GCCS-303	8.18E+06	2.88E+05	2.04E+00	2.46E-11	6.96E+01	1.05E-02
Biotite	9.73E+06	6.21E+05	2.43E+00	1.43E-11	7.55E+01	2.35E-03
	9.46E+06	3.05E+05	2.36E+00	1.52E-11	4.08E+01	1.31E-02
	8.81E+06	4.12E+05	2.21E+00	1.35E-11	5.88E+01	1.21E-02
	9.69E+06	4.82E+05	2.43E+00	1.30E-11	3.28E+01	1.79E-02
	1.04E+07	5.05E+05	2.60E+00	1.02E-11	1.65E+01	2.44E-02
	9.01E+06	4.04E+05	2.26E+00	9.22E-12	4.75E+01	3.06E-02
	8.82E+06	5.02E+05	2.21E+00	6.73E-12	6.53E+01	5.21E-02
	9.52E+06	5.74E+05	2.38E+00	8.65E-12	4.49E+01	1.62E-02
	9.98E+06	1.64E+06	2.51E+00	4.23E-12	6.55E+01	2.03E-01
	1.04E+07	1.10E+06	2.61E+00	4.87E-12	5.01E+01	1.38E-01
	8.30E+06	6.69E+05	2.08E+00	7.58E-12	6.25E+01	8.49E-03

Mean apparent age [Ma] = 9.1 ± 0.2
MSWD = 2.3
$^{36}Ar/^{40}Ar$ vs $^{39}Ar/^{40}Ar$ isochron age [Ma] = 9.7 ± 0.4
MSWD = 1.9
$^{40}Ar/^{36}Ar_t$ = 280.5 ± 7.6

Sample (Mineral)	Apparent age [a]	1σ-error [a]	$^{40}Ar^{*}/^{39}Ar_K$	Vol. $^{39}Ar_K$	Ar_{atmos} [%]	Ca/K
GCCS-140	9.26E+06	8.02E+04	5.15E+00	3.50E-11	3.06E+01	2.50E-02
Feldspar	8.85E+06	6.49E+04	4.92E+00	6.38E-11	2.11E+01	1.35E-02
	9.21E+06	6.69E+04	5.12E+00	4.21E-11	1.21E+01	1.24E-02
	8.97E+06	9.46E+04	4.98E+00	4.10E-11	4.40E+01	2.30E-02
	8.97E+06	9.62E+04	4.99E+00	3.68E-11	1.37E+01	1.23E-02
	8.95E+06	7.29E+04	4.97E+00	3.49E-11	8.83E+00	1.25E-02
	8.85E+06	7.56E+04	4.92E+00	3.79E-11	1.05E+01	1.29E-02
	8.96E+06	7.52E+04	4.98E+00	4.61E-11	3.20E+01	1.21E-02
	9.12E+06	4.33E+04	5.07E+00	7.78E-11	1.32E+01	1.33E-02

Mean apparent age [Ma] = 9.03 ± 0.05
MSWD = 4.4
$^{36}Ar/^{40}Ar$ vs $^{39}Ar/^{40}Ar$ isochron age [Ma] = 9.05 ± 0.09
MSWD = 6.5
$^{40}Ar/^{36}Ar_t$ = 295 ± 10

Sample (Mineral)	Apparent age [a]	1σ-error [a]	$^{40}Ar^{*}/^{39}Ar_K$	Vol. $^{39}Ar_K$	Ar_{atmos} [%]	Ca/K
GCCS-238	8.90E+06	4.72E+04	2.31E+00	9.58E-11	3.58E+00	3.64E-02
Feldspar	8.98E+06	3.17E+04	2.33E+00	1.79E-10	1.42E+00	3.56E-02
	8.89E+06	5.02E+04	2.31E+00	1.00E-10	1.99E+00	4.01E-02
	8.97E+06	5.59E+04	2.32E+00	1.03E-10	1.89E+00	3.48E-02
	9.00E+06	6.33E+04	2.34E+00	7.19E-11	6.66E-01	4.34E-02
	8.96E+06	4.46E+04	2.33E+00	1.07E-10	1.16E+00	4.15E-02
	9.04E+06	1.01E+05	2.34E+00	6.20E-11	1.90E+00	2.84E-02
	8.97E+06	6.05E+04	2.33E+00	8.04E-11	2.64E+00	3.24E-02
	8.98E+06	6.09E+04	2.33E+00	9.79E-11	4.33E+00	2.52E-02
	8.97E+06	6.00E+04	2.33E+00	1.11E-10	1.87E+00	4.43E-02

Mean apparent age [Ma] = 8.96 ± 0.02
MSWD = 0.6
$^{36}Ar/^{40}Ar$ vs $^{39}Ar/^{40}Ar$ isochron age [Ma] = 8.97 ± 0.05
MSWD = 0.7
$^{40}Ar/^{36}Ar_t$ = 288 ± 63

Sample (Mineral)	Apparent age [a]	1σ-error [a]	$^{40}Ar^{*}/^{39}Ar_K$	Vol. $^{39}Ar_K$	Ar_{atmos} [%]	Ca/K
GCCS-35B	8.91E+06	5.88E+04	5.39E+00	3.90E-11	3.12E+01	1.59E-02
Biotite	8.90E+06	5.66E+04	5.38E+00	2.44E-11	1.25E+01	2.85E-02
	8.91E+06	5.02E+04	5.39E+00	1.98E-11	2.41E+01	5.45E-02
	8.92E+06	4.21E+04	5.40E+00	2.74E-11	3.55E+00	1.40E-02
	8.89E+06	3.22E+04	5.38E+00	4.72E-11	1.18E+01	3.04E-02
	8.96E+06	6.01E+04	5.42E+00	2.45E-11	2.87E+01	4.35E-02
	9.08E+06	4.23E+04	5.50E+00	2.26E-11	5.18E+00	3.37E-04

Mean apparent age [Ma] = 8.94 ± 0.03
MSWD = 2.4
$^{36}Ar/^{40}Ar$ vs $^{39}Ar/^{40}Ar$ isochron age [Ma] = 8.96 ± 0.05
MSWD = 3.0
$^{40}Ar/^{36}Ar_t$ = 292 ± 7

Sample (Mineral)	Apparent age [a]	1σ-error [a]	$^{40}Ar^{*}/^{39}Ar_K$	Vol. $^{39}Ar_K$	Ar_{atmos} [%]	Ca/K
GCCS-239	8.81E+06	6.97E+04	2.28E+00	7.67E-11	4.11E+00	1.50E-02
Feldspar	8.87E+06	1.04E+05	2.30E+00	6.44E-11	3.52E+00	2.19E-02
	8.78E+06	1.12E+05	2.27E+00	6.12E-11	7.91E+00	2.77E-02
	8.82E+06	7.24E+04	2.29E+00	8.42E-11	7.98E+00	1.80E-02
	8.82E+06	6.21E+04	2.28E+00	8.10E-11	1.78E+00	1.88E-02
	8.83E+06	6.63E+04	2.29E+00	7.57E-11	3.50E+00	1.92E-02
	8.86E+06	5.58E+04	2.29E+00	8.86E-11	1.90E+00	1.93E-02
	8.77E+06	5.90E+04	2.28E+00	1.13E-10	9.27E+00	1.87E-02
	8.79E+06	6.91E+04	2.28E+00	9.08E-11	6.43E+00	1.99E-02
	8.79E+06	3.78E+04	2.28E+00	1.30E-10	1.82E+00	1.92E-02
	8.78E+06	5.25E+04	2.28E+00	1.34E-10	3.09E+00	1.48E-02

Mean apparent age [Ma] = 8.81 ± 0.02
MSWD = 0.3
$^{36}Ar/^{40}Ar$ vs $^{39}Ar/^{40}Ar$ isochron age [Ma] = 8.81 ± 0.04
MSWD = 0.3
$^{40}Ar/^{36}Ar_t = 290 \pm 21$

GCCS-301	8.76E+06	2.65E+04	2.27E+00	2.18E-10	4.29E+00	6.63E-03
Feldspar	8.82E+06	9.57E+04	2.28E+00	4.87E-11	2.81E+00	6.23E-03
	8.76E+06	5.80E+04	2.27E+00	7.05E-11	8.88E+00	9.44E-03
	8.74E+06	8.41E+04	2.27E+00	8.33E-11	6.62E+00	1.05E-02
	8.75E+06	6.15E+04	2.27E+00	1.14E-10	2.46E+00	8.63E-03
	8.84E+06	3.76E+04	2.28E+00	1.69E-10	4.20E+00	1.05E-02
	8.76E+06	3.70E+04	2.27E+00	1.79E-10	2.32E+00	8.97E-03
	8.80E+06	3.32E+04	2.28E+00	2.37E-10	4.57E+00	9.24E-03
	8.78E+06	1.92E+04	2.28E+00	5.26E-10	1.84E+00	8.25E-03

Mean apparent age [Ma] = 8.78 ± 0.01
MSWD = 0.5
$^{36}Ar/^{40}Ar$ vs $^{39}Ar/^{40}Ar$ isochron age [Ma] = 8.78 ± 0.04
MSWD = 0.7
$^{40}Ar/^{36}Ar_t = 301 \pm 19$

GCCS-12	8.73E+06	3.67E+04	4.81E+00	9.79E-11	1.17E+01	2.21E-02
Feldspar	8.54E+06	4.86E+04	4.94E+00	7.22E-11	2.32E+01	1.46E-02
	8.84E+06	5.35E+04	5.73E+00	3.78E-11	1.07E+01	1.66E-02
	8.83E+06	4.35E+04	5.93E+00	5.32E-11	9.77E+00	2.68E-02
	8.68E+06	4.52E+04	6.03E+00	5.27E-11	9.02E+00	1.69E-02

Mean apparent age [Ma] = 8.72 ± 0.05
MSWD = 6.6
$^{36}Ar/^{40}Ar$ vs $^{39}Ar/^{40}Ar$ isochron age [Ma] = 8.88 ± 0.09
MSWD = 7.2
$^{40}Ar/^{36}Ar_t = 259 \pm 19$

GCCS-236	8.75E+06	2.69E+04	2.27E+00	2.45E-10	1.00E+01	1.56E-02
Feldspar	8.75E+06	1.91E+04	2.26E+00	3.17E-10	8.84E-01	1.40E-02
	8.74E+06	2.00E+04	2.27E+00	3.35E-10	2.66E+00	1.53E-02
	8.74E+06	4.04E+04	2.26E+00	1.29E-10	8.53E+00	1.49E-02
	8.79E+06	4.27E+04	2.28E+00	1.59E-10	2.26E+01	1.59E-02
	8.65E+06	2.76E+04	2.24E+00	1.58E-10	4.59E+00	1.62E-02
	8.72E+06	4.37E+04	2.26E+00	1.48E-10	3.58E+00	1.77E-02
	8.71E+06	3.13E+04	2.25E+00	1.77E-10	5.69E+00	1.44E-02
	8.74E+06	4.66E+04	2.27E+00	1.16E-10	1.49E+00	1.86E-02
	8.68E+06	1.89E+04	2.25E+00	3.23E-10	6.42E+00	1.79E-02

Mean apparent age [Ma] = 8.72 ± 0.01
MSWD = 2.0
$^{36}Ar/^{40}Ar$ vs $^{39}Ar/^{40}Ar$ isochron age [Ma] = 8.71 ± 0.03
MSWD = 3.3
$^{40}Ar/^{36}Ar_t = 298.4 \pm 8.2$

Sample (Mineral)	Apparent age [a]	1σ-error [a]	$^{40}Ar^{*}/^{39}Ar_K$	Vol. $^{39}Ar_K$	Ar_{atmos} [%]	Ca/K
GCCS-100	8.62E+06	7.72E+04	5.21E+00	2.59E-11	8.67E+00	2.83E-02
Feldspar	8.54E+06	5.49E+04	5.17E+00	2.39E-11	3.76E+00	2.08E-02
	8.61E+06	6.89E+04	5.21E+00	2.34E-11	3.78E+00	4.19E-02
	8.59E+06	4.02E+04	5.20E+00	3.43E-11	4.05E+00	2.48E-02
	8.54E+06	3.82E+04	5.17E+00	4.08E-11	5.69E+00	5.14E-02
	8.58E+06	3.92E+04	5.19E+00	3.67E-11	3.42E+00	6.13E-02
	8.59E+06	1.19E+05	5.20E+00	1.29E-11	3.22E+00	7.02E-02
	8.59E+06	7.65E+04	5.20E+00	1.77E-11	5.84E+00	1.58E-02
	8.55E+06	8.56E+04	5.17E+00	1.73E-11	7.33E+00	3.38E-02
Mean apparent age [Ma] = 8.57 ± 0.02						
MSWD = 0.3						
$^{36}Ar/^{40}Ar$ vs $^{39}Ar/^{40}Ar$ isochron age [Ma] = 8.57 ± 0.06						
MSWD = 0.3						
$^{40}Ar/^{36}Ar_t$ = 299 ± 40						
GCCS-8	7.48E+06	9.24E+04	4.64E+00	2.65E-11	3.97E+01	1.59E-02
Feldspar	6.95E+06	2.04E+05	4.32E+00	1.44E-11	4.90E+01	2.31E-02
	7.39E+06	7.32E+04	4.59E+00	4.54E-11	4.13E+01	1.09E-02
	7.18E+06	7.84E+04	4.46E+00	2.25E-11	3.49E+01	5.75E-03
	7.38E+06	8.96E+04	4.58E+00	2.52E-11	4.39E+01	9.89E-03
	7.48E+06	9.86E+04	4.64E+00	2.33E-11	4.66E+01	7.01E-03
	7.12E+06	9.32E+04	4.42E+00	2.42E-11	5.55E+01	5.91E-03
	7.32E+06	1.10E+05	4.54E+00	2.00E-11	4.88E+01	6.09E-03
Mean apparent age [Ma] = 7.32 ± 0.05						
MSWD = 2.5						
$^{36}Ar/^{40}Ar$ vs $^{39}Ar/^{40}Ar$ isochron age [Ma] = 7.40 ± 0.22						
MSWD = 3						
$^{40}Ar/^{36}Ar_t$ = 291 ± 11						