SUPPLEMENTARY DATA (INCLUDING APPENDIXES AND TABLES)

APPENDIX 1. Apatite fission track dating

The method (see Gallagher, 1998) is based on the accumulation radiation damage due to the spontaneous nuclear fission of ^{238}U and it is commonly used to quantify timing and rates of exhumation through temperatures of about 110°C. In this work, fission track dating was performed according to the external detector method, after irradiation in the atomic reactor TRIGA Mark II at the Oregon State University. Track counting was carried out at the DSTGA lab in Bologna, using a microscope Zeiss Axioscope with a total magnification of 1250x, equipped with motorized stage, transmitted and reflected lights. Zeta calibration was performed according to the procedure recommended by Hurford & Green (1983) using Durango and Fish Canyon Tuff apatites were used as standards. Neutron fluences were measured counting neutron induced tracks in the Corning glass dosimeters CN-5, placed both at the top and at the bottom of the sample holder to have the maximum control on the neutron fluence gradient.

APPENDIX 2. Ar data

In thin section, the grain size of the analysed sample ranges from 25 to 250 µm. The first aliquot comprised three grain aggregates, with the aggregates measuring 1220 µm x 590 µm, 1150 µm x 80 µm and 390 µm x 260 µm, the second comprising two grain aggregates of 1600 µm x 800 µm and 1600 µm x 1000 µm. The two aliquots were cleaned in methanol and deionised water in an ultrasonic bath, dried and wrapped in aluminium foil. Biotite age standard Tinto B, with a K-Ar age of 409.24 ± 0.71 Ma (Rex & Guise 1995) was loaded at 5 mm intervals along the package to monitor the neutron flux gradient. The package was Cd-shielded and irradiated in the H5 position of the McMaster University Nuclear Reactor, Hamilton, Canada, for 90 hours. The Tinto B standards yield a J value for the sample of 0.012454 with a J value error of 0.5%. The samples were analysed at the Western Australian Argon Isotope Facility, Curtin University of Technology; a facility operated by a consortium comprising Curtin University and the University of Western Australia. Argon data were collected by infra-red laser step-heating using an automated extraction and data acquisition system.

The irradiated white mica aliquots were loaded into two sample pits in an ultra-high vacuum laser chamber with a Kovar viewport and baked to 120°C overnight to remove adsorbed atmospheric argon from the samples and chamber walls. A 110 W Spectron Laser Systems continuous-wave neodymium-yttrium-aluminium-garnet (CW-Nd-YAG) laser (λ = 1064 nm), fitted with a TEM00 aperture, was used to laser step-heat the mineral sample at increasing laser power (10.0-11.3A). The laser was fired through a Merchantek computer-controlled X-Y-Z sample chamber stage and microscope system, fitted with a high-resolution CCD camera, 6x computer controlled zoom, high magnification objective lens, and two light sources for sample illumination. Prior to analysis, the dimensions of each grain were measured using the calibrated stage system.

Following laser heating gases were gettered using 3 SAES AP10 getter pumps to remove active gases (CO_2, H_2O, H_2, N_2, O_2, CH_4). The remaining noble gases were equilibrated into a high sensitivity mass spectrometer (MAP 215-50), operated at a mass-resolution of 600, and fitted with a Balzers SEV 217 multiplier. Mean 5 minute extraction system blanks obtained during data collection were: $^{40}Ar = 2.6x10^{-12}$ cm^3, $^{39}Ar = 2.9x10^{-14}$ cm^3, $^{38}Ar = 5.5x10^{-15}$ cm^3, $^{37}Ar = 3.4$ _ 10^{-14} cm^3 and $^{36}Ar = 1.7x10^{-14}$ cm^3 at standard temperature and pressure. Data were corrected for mass spectrometer discrimination and nuclear interference reactions. $^{40}Ar/^{39}Ar$ ages were calculated using the decay constant quoted by Steiger and Jäger (1977). J values and 1σ errors are noted in Table 6. Errors shown in step-heating profiles (Fig. 12) represent analytical errors and do not include J value uncertainties.

Table captions

Table 1. *Compositional data on carpholite from Lungro-Verbicaro Unit quartz veins and Miocene metapelites (Scisti del Fiume Lao Fm).*

Table 2. *Compositional data on chlorite and white micas from Lungro-Verbicaro Unit quartz veins and Miocene metapelites (Scisti del Fiume Lao Fm).*

Table 3. *Compositional data on chloritoid and chlorite from Lungro-Verbicaro Unit Triassic phyllites.*

Table 4. *Compositional data on white micas from Cetraro Unit phyllites.*

Table 5. *Central ages calculated using dosimeter glass CN5 and ζ-CN5=366.5±3.5. ρ_s: spontaneous track densities (x 10^5 cm^{-2}) measured in internal mineral surfaces; ρi and ρ_d:*

induced and dosimeter track densities (x 10^6 cm^{-2}) on external mica detectors (g=0.5); N_i and N_d: total numbers of tracks; $P(\chi^2)$: probability of obtaining χ^2-value for ν degrees of freedom (where ν=number of crystals-1); a probability >5% is indicative of an homogenous population.

Table 6. *Ar data from Cetraro Unit phyllites.*

Scisti del Fiume Lao Fm (Lungro-Verbicaro Unit)																		
	Fe-Mg-carpholite																	
	quartz-vein																slate	
Sample	SC1	SC1	MM2	SC 2.1	SC 2.2	MM1	SC2.1A	SC 2.2	MM2	SC1	SC2.1A	SC 2.3	SC 2.2	SC 2.3	MM1	MM1	MM1	SC1
Locality	1	1	2	1	1	2	1	1	2	1	1	1	1	1	2	2	2	1
	■	■	▲	▲	▲	○	○	○	◊	◊	◊	◊	+	+	*	*	●	●
SiO_2	35.72	35.76	37.77	37.35	37.23	37.31	37.64	36.96	37.71	36.21	38.72	37.52	37.53	37.46	37.10	37.19	37.68	35.24
TiO_2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.00	0.51	0.41	0.00	0.00	0.00	0.34	0.00	0.34
Al_2O_3	29.84	29.31	30.41	30.66	29.95	29.95	31.10	30.49	31.19	29.86	31.92	30.41	30.55	31.07	31.14	30.40	31.05	28.15
FeO	14.17	14.72	13.36	13.05	13.32	12.60	13.48	13.13	11.50	10.64	12.37	12.63	14.03	13.24	12.94	12.81	11.25	13.91
MnO	0.00	0.00	0.46	0.49	0.41	0.54	0.00	0.00	0.52	0.00	0.00	0.00	0.00	0.47	0.47	0.45	0.41	0.00
MgO	4.12	4.17	5.62	4.74	5.17	5.73	4.98	5.19	6.18	5.96	5.69	5.12	5.05	4.76	5.04	5.70	6.19	6.58
Total	83.85	83.96	87.62	86.29	86.08	86.13	87.20	85.77	87.69	82.67	89.21	86.09	87.16	87.00	86.69	86.89	86.58	84.22
	CATIONS calculated on the basis of 5 cations and 8 oxygens																	
Si	2.01	2.01	2.02	2.03	2.03	2.03	2.02	2.02	2.00	2.03	2.03	2.04	2.02	2.02	2.01	2.00	2.02	1.96
Ti	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.02	0.00	0.00	0.00	0.01	0.00	0.01
Al	1.98	1.94	1.92	1.97	1.92	1.92	1.97	1.96	1.95	1.97	1.97	1.95	1.94	1.98	1.98	1.93	1.96	1.84
Fe^{2+}	0.53	0.52	0.44	0.48	0.45	0.41	0.49	0.48	0.42	0.39	0.47	0.46	0.49	0.49	0.49	0.45	0.40	0.41
Fe^{3+}	0.02	0.06	0.08	0.03	0.08	0.09	0.03	0.04	0.03	0.03	0.11	0.03	0.06	0.02	0.02	0.06	0.04	0.15
Mn	0.00	0.00	0.02	0.02	0.02	0.03	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.02	0.02	0.01	0.02	0.00
Mg	0.35	0.35	0.45	0.39	0.42	0.46	0.40	0.42	0.49	0.50	0.44	0.42	0.41	0.38	0.41	0.46	0.49	0.54
X_{Mg}	0.39	0.40	0.49	0.44	0.45	0.51	0.45	0.47	0.52	0.56	0.48	0.47	0.45	0.43	0.44	0.50	0.54	0.57

Locality: 1. Maierà; 2. Alberosa (Verbicaro).

Legend : quartz-vein ■ = core of post-D_1 prismatic crystal, ▲ = post-D_1 prismatic crystal, ○ = syn-D_2 crystal with subgranular structure, ◊ = syn-D_2 long needle-like crystal, + = late-D_2 short needle-like crystal, * = syn-D_3 short needle-like crystal; slate: ● = late-D_2 crystal.

Table 1

	Scisti del Fiume Lao Fm (Lungro-Verbicaro Unit)																							
	chlorite											white mica												
	slate						quartz-vein					slate								quartz-vein			
Sample	**SC1**	**SC1**	**SC2.1**	**SC2.1**	**SC2.1**	**SC2.4B**	**MM1**	**MM1**	**SC2.1**	**SC2.1A**	**SC2.3**	**MM1**	**SC1**	**SC2.1**	**SC2.4B**	**SC2.1**	**SC2.1**	**SC2.4B**	**SC2.4B**	**MM2**	**SC2.1A**	**SC2.1A**	**SC2.2**
Locality	**1**	**1**	**1**	**1**	**1**	**1**	**2**	**2**	**1**	**1**	**1**	**2**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**2**	**1**	**1**	**1**
	○	○	○	●	●	●	x	x	x	x	x	○	○	○	○	●	●	●	●	x	x	x	x
SiO_2	25.86	26.22	25.32	24.20	25.18	24.04	26.12	24.61	25.16	24.54	24.81	48.63	49.80	50.28	48.84	45.19	46.45	46.69	47.84	48.51	48.40	49.38	48.17
TiO_2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68	0.73	0.00	0.00	0.00	0.00	0.00	0.00
Al_2O_3	22.64	22.04	22.83	22.08	22.14	21.22	20.89	22.34	21.90	21.59	22.82	36.19	30.78	26.01	33.61	35.20	33.42	35.76	34.97	32.74	36.33	33.87	35.19
FeO	26.48	25.10	28.14	30.31	30.25	28.09	27.24	28.20	29.04	29.26	28.06	0.00	0.00	1.18	0.00	0.46	0.13	0.00	0.00	0.00	0.00	0.00	0.81
Fe_2O_3												0.94	1.56	5.91	1.32	0.74	1.26	2.03	1.80	1.10	0.61	1.33	0.00
MgO	12.03	12.28	10.97	9.63	10.27	10.16	11.10	11.14	10.61	9.84	10.39	0.70	1.92	1.92	1.39	0.52	1.14	1.09	1.04	1.52	0.80	1.18	0.95
CaO												0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	1.25
Na_2O												4.20	0.75	0.00	2.17	1.02	1.00	4.65	3.58	0.61	2.96	1.19	2.44
K_2O												3.43	9.08	10.23	7.19	10.00	9.64	3.28	5.17	9.56	5.90	8.01	6.48
H_2O												4.65	4.50	4.45	4.57	4.44	4.45	4.60	4.60	4.51	4.64	4.60	4.58
Total	87.01	85.64	87.26	86.22	87.84	83.51	85.35	86.29	86.71	85.23	86.08	98.74	98.40	99.98	99.08	98.26	98.22	98.10	99.01	98.55	99.64	99.86	99.86
	cations calculated on the basis of 14 oxygens											cations calculated on the basis of 11 oxygens and 6 cations + Na + K + Ca											
Si	2.75	2.81	2.71	2.67	2.71	2.71	2.85	2.67	2.73	2.72	2.69	3.14	3.32	3.38	3.20	3.05	3.13	3.05	3.12	3.23	3.13	3.22	3.15
Ti	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00
Al	2.83	2.78	2.88	2.87	2.81	2.82	2.68	2.86	2.80	2.82	2.92	2.75	2.42	2.06	2.60	2.80	2.65	2.75	2.69	2.57	2.77	2.60	2.71
Fe^{2+}	2.35	2.25	2.52	2.79	2.72	2.65	2.48	2.56	2.63	2.71	2.55	0.00	0.00	0.07	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.04
Fe^{3+}	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.08	0.30	0.07	0.04	0.06	0.10	0.09	0.06	0.03	0.07	0.00
Mg	1.90	1.96	1.75	1.58	1.65	1.71	1.80	1.80	1.72	1.63	1.68	0.07	0.19	0.19	0.14	0.05	0.11	0.11	0.10	0.15	0.08	0.12	0.09
Ca												0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.09
Na												0.53	0.10	0.00	0.28	0.13	0.13	0.59	0.45	0.08	0.37	0.15	0.31
K												0.28	0.77	0.88	0.60	0.86	0.83	0.27	0.43	0.81	0.49	0.67	0.54
OH												2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
$X_{Mg}(Fe^{2+})$	0.45	0.47	0.41	0.36	0.38	0.39	0.42	0.41	0.39	0.38	0.40	1.00	1.00	0.74	1.00	0.67	0.94	1.00	1.00	1.00	1.00	1.00	0.68
$X_{Mg}(Fe^{tot})$												0.60	0.71	0.35	0.68	0.45	0.62	0.52	0.53	0.73	0.72	0.64	0.68
Al(IV)												0.86	0.68	0.62	0.80	0.95	0.87	0.96	0.88	0.77	0.87	0.78	0.85
Al(VI)												1.89	1.73	1.44	1.80	1.85	1.78	1.79	1.81	1.79	1.89	1.82	1.86

Locality: 1. Maierà; 2. Alberosa (Verbicaro) .

Legend chlorite and white mica: ○ = D_1 crystal, ● = D_2 crystal, x = late-D_2 crystal after carpholite.

Table 2

Phyllites (Lungro-Verbicaro Unit)																							
	chloritoid									white mica													
Sample	Pe 17	Pe 18	Pe 18	Pe 18	Pe 20	Pe 17	Pe 17	Pe 18	Pe 20	Pe 17	Pe 20	Pe17	Pe 18	Pe 18	Pe 20	Pe 17	Pe 18	Pe 18	Pe20	Pe 18	Pe 18	Pe 20	Pe 20
Locality	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	□	□	□	□	□	Δ	Δ	Δ	Δ	□	□	○	○	○	○	●	●	●	●	x	x	x	x
SiO_2	23.93	24.27	24.13	23.92	24.28	22.73	24.07	24.49	24.64	53.94	50.33	48.55	47.18	47.21	47.91	47.22	46.08	46.36	46.80	46.57	46.57	47.69	48.18
TiO_2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al_2O_3	38.87	39.50	38.31	40.00	39.43	38.35	40.35	40.79	41.06	28.77	28.74	35.41	32.47	33.11	32.61	35.14	36.54	35.99	34.30	33.40	32.92	33.83	32.18
FeO	23.83	25.51	25.15	23.92	23.09	21.96	21.62	21.50	20.74	1.02	0.00	0.90	0.09	0.90	0.00	0.73	0.00	0.00	0.00	0.00	0.38	0.03	0.00
Fe_2O_3										0.00	2.17	0.12	3.29	1.31	1.48	0.32	1.04	0.70	1.63	3.46	2.28	1.47	2.05
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00														
MgO	2.89	2.73	2.84	3.55	3.43	3.42	4.40	4.67	4.69	1.47	3.16	0.35	1.13	0.85	1.49	0.76	0.42	0.39	1.20	0.95	0.89	1.11	1.64
CaO										0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Na_2O										0.91	0.50	1.40	0.37	0.54	0.44	0.88	0.88	1.02	0.80	0.48	0.60	0.85	0.91
K_2O										8.63	10.44	8.70	10.71	10.39	9.67	10.39	10.27	9.45	10.17	10.39	10.24	9.88	9.51
H_2O										4.56	4.52	4.58	4.48	4.46	4.48	4.53	4.52	4.49	4.51	4.50	4.44	4.57	4.50
Total	89.52	92.01	90.43	91.39	90.23	86.46	90.44	91.45	91.13	99.66	99.87	100.01	99.72	98.78	98.08	99.97	99.76	98.41	99.42	99.76	98.32	99.38	98.98
	cations calculated on the basis of 12 oxygens									cations calculated on the basis of 11 oxygens and 6 cations + Na + K + Ca													
Si	2.04	2.03	2.05	2.00	2.04	2.00	2.00	2.01	2.02	3.55	3.33	3.18	3.16	3.17	3.21	3.13	3.05	3.10	3.11	3.11	3.15	3.17	3.21
Ti	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al	3.90	3.89	3.84	3.93	3.91	3.97	3.96	3.95	3.97	2.23	2.24	2.73	2.56	2.62	2.57	2.74	2.85	2.83	2.69	2.63	2.62	2.65	2.53
Fe^{2+}	1.61	1.68	1.64	1.61	1.54	1.58	1.47	1.43	1.40	0.06	0.00	0.05	0.01	0.05	0.00	0.04	0.00	0.00	0.00	0.00	0.02	0.00	0.00
Fe^{3+}	0.01	0.11	0.16	0.07	0.09	0.03	0.04	0.05	0.03	0.00	0.11	0.01	0.17	0.07	0.07	0.02	0.05	0.04	0.08	0.17	0.12	0.07	0.10
Mn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00														
Mg	0.37	0.34	0.36	0.44	0.43	0.45	0.55	0.57	0.57	0.14	0.31	0.03	0.11	0.09	0.15	0.08	0.04	0.04	0.12	0.09	0.09	0.11	0.16
Ca										0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Na										0.12	0.06	0.18	0.05	0.07	0.06	0.11	0.11	0.13	0.10	0.06	0.08	0.11	0.12
K										0.72	0.88	0.73	0.91	0.89	0.83	0.88	0.87	0.81	0.86	0.88	0.88	0.84	0.81
OH										2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
X_{Mg} (Fe^{2+})	0.19	0.17	0.18	0.22	0.22	0.22	0.28	0.29	0.29	0.72	1.00	0.41	0.96	0.63	1.00	0.65	1.00	1.00	1.00	1.00	0.81	0.98	1.00
X_{Mg} (Fe^{tot})										0.72	0.74	0.38	0.40	0.42	0.67	0.57	0.44	0.52	0.59	0.35	0.39	0.59	0.61
Al(IV)										0.45	0.67	0.82	0.84	0.83	0.79	0.87	0.95	0.91	0.89	0.89	0.85	0.83	0.79
Al(VI)										1.78	1.58	1.91	1.72	1.80	1.78	1.87	1.91	1.93	1.80	1.73	1.77	1.81	1.73

Locality: 1. San Donato di Ninea.

Legend chloritoid: □ = D_1 relict core; Δ = D_2 crystal.

Legend white mica: □ = D_1 relict core; ○ = D_1 crystal ; ● = D_2 crystal; x = late-D_2 crystal after chloritoid.

Table 3

Phyllites (Cetraro Unit)

chloritoid

Sample	Pe 2	Pe 2	Pe 10	Pe 10	Pe 2	Pe 2	Pe 2	Pe 10	Pe 10
Locality	1	1	1	1	1	1	1	1	1
	□	□	□	□	Δ	Δ	Δ	Δ	Δ
SiO_2	23.87	23.83	23.64	23.74	23.97	23.77	23.95	23.99	23.63
TiO_2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al_2O_3	37.81	39,05	38,33	38.71	38.32	38.60	38.20	38.63	38.45
FeO	27.49	27.13	26.37	27.01	27.10	26.73	26.19	27.12	25.74
MnO	0.00	0.00	0.84	0.67	0.00	0.00	0.00	0.94	0.72
MgO	1.40	1.72	1.50	1.74	1.31	1.65	2.00	1.48	1.99
Total	90.57	91.73	90.68	91.87	90.70	90.75	90.34	92.16	90.53
	cations calculated on the basis of 12 oxygens								
Si	2.05	2.02	2.03	2.01	2.05	2.03	2.05	2.03	2.02
Ti	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al	3.83	3.89	3.87	3.87	3.86	3.88	3.85	3.85	3.88
Fe^{2+}	1.82	1.82	1.77	1.79	1.82	1.80	1.74	1.78	1.73
Fe^{3+}	0.17	0.11	0.13	0.14	0.14	0.12	0.15	0.15	0.13
Mn	0.00	0.00	0.06	0.05	0.00	0.00	0.00	0.07	0.05
Mg	0.18	0.22	0.19	0.22	0.17	0.21	0.26	0.19	0.25
X_{Mg} (Fe^{2+})	0.09	0.11	0.10	0.11	0.08	0.10	0.13	0.09	0.13

chlorite

Sample	Pe 2	Pe 2	Pe 2	Pe 2	Pe 10	Pe 10	Pe 10	Pe 10
Locality	1	1	1	1	1	1	1	1
	●	●	●	●	○	○	○	○
SiO_2	23.25	23.15	23.66	23.08	23.53	23.52	23.79	23.76
TiO_2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al_2O_3	21.70	21.95	21.94	21.22	22.98	22.79	22.59	22.14
FeO	32.45	31.08	31.06	30.63	29.12	27.91	28.94	29.46
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MgO	9.81	9.86	10.43	10.47	11.82	11.98	12.21	12.28
Total	87.21	86.04	87.09	85.40	87.45	86.20	87.53	87.64
	cations calculated on the basis of 14 oxygens							
Si	2.57	2.58	2.60	2.59	2.54	2.56	2.56	2.57
Ti	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al	2.83	2.88	2.84	2.80	2.92	2.93	2.87	2.82
Fe^{2+}	3.00	2.89	2.85	2.87	2.63	2.54	2.61	2.66
Fe^{3+}	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mg	1.68	1.64	1.71	1.75	1.90	1.95	1.96	1.98
X_{Mg} (Fe^{2+})	0.35	0.36	0.37	0.38	0.42	0.43	0.43	0.43

white mica

Sample	Pe 2	Pe 2	Pe 2	Pe 2	Pe 2	Pe 2	Pe 2	Pe 2	Pe 2	Pe 10
Locality	1	1	1	1	1	1	1	1	1	1
	□	□	○	○	○	○	●	●	●	●
SiO_2	46.99	47.30	47.29	47.65	47.39	47.92	45.65	46.25	46.60	46.47
TiO_2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al_2O_3	30.35	29.99	30.32	30.74	30.21	30.29	33.91	34.28	31.95	33.57
FeO	0.03	0.00	0.34	0.00	0.94	0.24	0.00	0.05	0.00	0.00
Fe_2O_3	5.26	5.32	4.55	4.23	3.77	4.59	4.22	3.25	4.46	4.03
MgO	1.27	1.62	1.42	1.45	1.37	1.45	0.60	0.73	1.01	0.68
CaO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Na_2O	0.59	0.55	0.53	0.65	0.67	0.51	1.37	1.82	0.76	1.01
K_2O	10.10	10.27	10.43	9.96	10.37	10.26	9.34	9.01	10.05	9.57
H_2O	4.43	4.45	4.44	4.46	4.43	4.47	4.49	4.51	4.45	4.51
Total	99.03	99.49	99.32	99.14	99.14	99.73	99.57	99.90	99.28	99.82
	cations calculated on the basis of 11 oxygens and 6 cations + Na + K + Ca									
Si	3.18	3.19	3.19	3.20	3.21	3.21	3.05	3.08	3.14	3.10
Ti	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al	2.42	2.38	2.41	2.44	2.41	2.40	2.67	2.69	2.54	2.64
Fe^{2+}	0.00	0.00	0.02	0.00	0.05	0.01	0.00	0.00	0.00	0.00
Fe^{3+}	0.27	0.27	0.23	0.21	0.19	0.23	0.21	0.16	0.23	0.20
Mg	0.13	0.16	0.14	0.15	0.14	0.15	0.06	0.07	0.10	0.07
Ca	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Na	0.08	0.07	0.07	0.08	0.09	0.07	0.18	0.24	0.10	0.13
K	0.87	0.88	0.90	0.86	0.90	0.88	0.80	0.76	0.86	0.81
OH	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
X_{Mg} (Fe^{2+})	0.99	1.00	0.88	1.00	0.72	0.91	1.00	0.96	1.00	1.00
X_{Mg} (Fe^{tot})	0.32	0.38	0.36	0.40	0.36	0.37	0.22	0.31	0.31	0.25
Al(IV)	0.82	0.81	0.81	0.80	0.79	0.79	0.95	0.92	0.86	0.91
Al(VI)	1.60	1.57	1.61	1.64	1.62	1.61	1.73	1.76	1.67	1.73

Locality: 1. Cetraro.

Legend chloritoid: □ = D_1 relict core; Δ = D_1 crystal.

Legend chlorite: ● = D_1 and D_2 crystals, sample Pe 2., ○ = D_1 and D_2 crystals, sample Pe 10;

Legend white mica: □ = D_1 relict core; ○ = D_1 crystal ; ● = D_2 crystal.

Table 4

Sample	No. of crystals	Spontaneous		Induced		$P(\chi)^2$	dosimeter		Age (Ma)
		ρ_s	N_s	ρ_i	N_i		ρ_d	N_d	$\pm 1\sigma$
MDE245	18	1,11	45	2,57	1043	99,8	1,13	5361	8,9±1,4
MDE246	20	2,08	128	371	2282	427	1,13	5361	11,6±1,1

Table 5

Sample	Step	$^{40}Ar/^{39}Ar$	+-	$^{38}Ar/^{39}Ar$	+-	$^{37}Ar/^{39}Ar$	+-	$^{36}Ar/^{39}Ar$	+-	^{39}Ar (cm^3)	+-	$^{40}Ar^*/^{39}Ar$	+-	Age (Ma)	+-	Cumulative % 39Ar
SM-01	Step 2	1,116	0,005	0,01412	0,00027	-	-	0,00152	0,00054	6,23194E-12	1,36252E-14	0,667	0,160	14,9	3,6	1,6
SM-01	Step 3	0,968	0,003	0,01291	0,00015	-	-	0,00046	0,00000	2,29747E-11	4,732E-14	0,831	0,003	18,6	0,1	3,8
SM-01	Step 4	0,661	0,003	0,01176	0,00015	0,63911	0,09037	-	-	2,31728E-11	1,69E-14	0,709	0,003	15,9	0,1	6,1
SM-01	Step 5	1,176	0,002	0,01263	0,00003	0,12474	0,04445	0,00022	0,00001	4,24316E-10	6,59317E-13	1,111	0,003	24,8	0,1	47,1
SM-01	Step 6	1,307	0,005	0,01252	0,00008	0,29835	0,20444	0,00009	0,00002	9,22902E-11	1,56396E-13	1,281	0,007	28,5	0,2	56,1
SM-01	Step 7	1,363	0,004	0,01218	0,00008	-	-	0,00040	0,00004	4,77073E-11	4,87763E-14	1,245	0,011	27,8	0,3	60,7
SM-01	Step 8	1,596	0,004	0,01230	0,00005	-	-	0,00018	0,00001	2,31153E-10	1,93023E-13	1,541	0,005	34,3	0,2	83,1
SM-01	Step 9	1,578	0,006	0,01109	0,00040	0,44220	0,23852	0,00017	0,00010	1,02189E-10	1,55627E-13	1,528	0,030	34,0	0,7	92,9
SM-01	Step 10	1,653	0,005	0,01190	0,00006	-	-	0,00026	0,00002	7,28903E-11	1,5225E-13	1,576	0,008	35,1	0,3	100,0
SM-02	Step 01	1,020	0,010	0,01318	0,00018	0,57796	0,19070	0,00053	0,00008	2,23709E-11	8,80261E-14	0,862	0,024	19,3	0,5	0,9
SM-02	Step 02	0,664	0,003	0,01333	0,00005	0,17697	0,05839	0,00049	0,00002	7,30844E-11	9,8151E-14	0,520	0,007	11,6	0,2	3,9
SM-02	Step 03	0,842	0,001	0,01313	0,00003	0,07812	0,10310	0,00050	0,00005	1,65703E-10	2,25379E-13	0,694	0,015	15,5	0,3	10,8
SM-02	Step 04	0,874	0,001	0,01236	0,00004	0,12616	0,03432	0,00023	0,00002	5,13228E-10	4,70916E-13	0,806	0,005	18,0	0,1	31,9
SM-02	Step 05	1,036	0,001	0,01229	0,00003	0,04642	0,00934	0,00012	0,00001	5,11868E-10	4,19287E-13	1,000	0,004	22,3	0,1	53,0
SM-02	Step 06	0,916	0,002	0,01244	0,00003	0,11553	0,01271	0,00005	0,00004	1,68347E-10	2,26769E-13	0,901	0,012	20,1	0,3	59,9
SM-02	Step 07	0,990	0,003	0,01258	0,00008	0,08089	0,05773	0,00009	0,00001	1,33695E-10	3,38004E-13	0,963	0,005	21,5	0,1	65,4
SM-02	Step 08	0,932	0,003	0,01253	0,00006	0,09489	0,09393	0,00005	0,00000	9,62205E-11	3,34727E-13	0,918	0,003	20,5	0,1	69,4
SM-02	Step 09	1,024	0,002	0,01232	0,00005	-	-	0,00017	0,00000	8,10584E-11	1,88948E-14	0,975	0,002	21,8	0,1	72,7
SM-02	Step 10	1,512	0,009	0,01224	0,00005	-	-	0,00026	0,00001	1,33612E-10	2,23106E-13	1,436	0,010	32,0	0,3	78,2
SM-02	Step 11	1,090	0,002	0,01218	0,00002	-	-	0,00016	0,00001	2,75934E-10	3,81955E-13	1,043	0,003	23,3	0,1	89,6
SM-02	Step 12	1,249	0,004	0,01206	0,00004	-	-	0,00015	0,00002	9,95228E-11	1,99484E-13	1,204	0,006	26,8	0,2	93,7
SM-02	Step 13	0,910	0,002	0,01168	0,00010	-	-	0,00014	0,00002	6,76564E-11	3,41781E-14	0,868	0,008	19,4	0,2	96,5
SM-02	Step 14	1,408	0,004	0,01296	0,00007	-	-	0,00037	0,00000	2,86128E-11	6,76844E-14	1,297	0,004	28,9	0,2	97,7
SM-02	Step 15	1,108	0,004	0,01186	0,00015	-	-	0,00016	0,00000	2,54593E-11	8,45676E-14	1,062	0,004	23,7	0,2	98,7
SM-02	Step 16	1,380	0,004	0,01208	0,00011	0,14873	0,14721	0,00046	0,00005	3,08471E-11	7,10001E-14	1,245	0,017	27,8	0,4	100,0

Table 6