DR2003024

Table DR1. Ion-microprobe U–Th–Pb data for zircons from the Alboran Domain

Analysis[1]	Character[2]	[U] ppm	[Pb] ppm	Th/U[3]	$^{206}Pb/^{204}Pb$	f_{206}[4] %	$^{207}Pb/^{206}Pb$	$^{206}Pb/^{238}U$	Disc[5] %	$^{207}Pb/^{206}Pb$ age (Ma)	$^{206}Pb/^{238}U$ age (Ma)	$^{206}Pb/^{238}U_{corr}$[6] age (Ma)
PB-383 (Carratraca)												
13	*eu-r-s-uz*	*419*	*1.5*	*0.30*	*629*	*0.00*	*0.0632 ± 0.0038*	*0.00308 ± 0.00010*			*19.9 ± 0.7*	*19.4 ± 0.7*
G5	sub-r-o-uz	134	0.5	0.29	1930	0.09	0.0585 ± 0.0035	0.00312 ± 0.00008			20.1 ± 0.5	19.8 ± 0.5
10	*sub-r-s-uz*	*347*	*1.2*	*0.24*	*>1e6*	*0.30*	*0.0459 ± 0.0026*	*0.00315 ± 0.00009*			*20.2 ± 0.6*	*20.3 ± 0.6*
16	*sub-r-s-uz*	*334*	*1.2*	*0.21*	*1390*	*0.00*	*0.047 ± 0.0028*	*0.00320 ± 0.00009*			*20.6 ± 0.6*	*20.6 ± 0.6*
4	*an-r-s-uz*	*401*	*1.4*	*0.26*	*4110*	*0.10*	*0.0457 ± 0.0024*	*0.00321 ± 0.00009*			*20.7 ± 0.6*	*20.7 ± 0.6*
15	*an-r-s-uz*	*804*	*2.8*	*0.08*	*1190*	*10.3*	*0.0518 ± 0.0017*	*0.00327 ± 0.00009*			*21.0 ± 0.6*	*20.9 ± 0.6*
G3	sub-r-o-uz	387	1.4	0.19	3910	3.38	0.0483 ± 0.0020	0.00328 ± 0.00007			21.1 ± 0.4	21.1 ± 0.4
G1	an-r-s-uz	301	1.2	0.40	8950	0.84	0.0484 ± 0.0019	0.00328 ± 0.00007			21.1 ± 0.5	21.1 ± 0.5
G6	an-r-s-uz	367	1.4	0.21	1090	1.13	0.0473 ± 0.0018	0.00330 ± 0.00007			21.2 ± 0.5	21.2 ± 0.5
G8a	sub-r-o-uz	282	1.1	0.33	558	2.35	0.0473 ± 0.0020	0.00330 ± 0.00007			21.3 ± 0.5	21.2 ± 0.5
2	*sub-r-s-uz*	*405*	*1.5*	*0.31*	*4010*	*2.93*	*0.0463 ± 0.0025*	*0.00331 ± 0.00009*			*21.3 ± 0.6*	*21.3 ± 0.6*
3	*sub-r-s-uz*	*354*	*1.4*	*0.23*	*2060*	*0.52*	*0.0496 ± 0.0026*	*0.00336 ± 0.00009*			*21.7 ± 0.6*	*21.6 ± 0.6*
9	*sub-r-s-uz*	*333*	*1.3*	*0.39*	*6010*	*1.06*	*0.0443 ± 0.0022*	*0.00336 ± 0.00009*			*21.7 ± 0.6*	*21.7 ± 0.6*
14	*an-r-s-uz*	*324*	*1.4*	*0.61*	*1620*	*0.56*	*0.0485 ± 0.0029*	*0.00340 ± 0.00009*			*21.9 ± 0.6*	*21.8 ± 0.6*
6	*sub-r-s-uz*	*453*	*1.8*	*0.29*	*1400*	*1.87*	*0.0514 ± 0.0019*	*0.00340 ± 0.00010*			*21.9 ± 0.6*	*21.7 ± 0.6*
G7	an-r-s-uz	450	1.7	0.12	2810	0.50	0.0461 ± 0.0015	0.00343 ± 0.00007			22.1 ± 0.5	22.1 ± 0.5
G9a	an-r-o/mix-uz	302	2.2	0.10	18	2.45	0.0589 ± 0.0019	0.00657 ± 0.00013			42.2 ± 0.8	41.5 ± 0.8
1a	*sub-r-o-uz*	*171*	*1.3*	*0.11*	*3900*	*1.73*	*0.0477 ± 0.0023*	*0.00717 ± 0.00011*			*46.1 ± 0.7*	*46 ± 0.7*
G4a	sub-r-o-uz	302	3.2	0.07	5950	2.53	0.0521 ± 0.0016	0.00991 ± 0.00023			63.6 ± 1.5	63.2 ± 1.5
8a	*sub-r-o-uz*	*236*	*3.2*	*0.09*	*3280*	*0.73*	*0.0537 ± 0.0017*	*0.0124 ± 0.0003*			*79.4 ± 2.1*	*78.8 ± 2.1*
7a	*eu-r-o-uz*	*221*	*7.9*	*0.07*	*2010*	*4.13*	*0.052 ± 0.0011*	*0.0332 ± 0.0009*		*285 ± 48*	*210 ± 6*	*210 ± 6*
17	*sub-r-s-uz*	*268*	*11.8*	*0.06*	*4790*	*0.27*	*0.0512 ± 0.0009*	*0.0410 ± 0.0011*		*252 ± 40*	*259 ± 7*	*259 ± 7*
8c	*c-z*	*304*	*23.8*	*1.68*	*7520*	*0.44*	*0.0597 ± 0.0015*	*0.0507 ± 0.0015*		*593 ± 54*	*319 ± 9*	*316 ± 9*
12	*an-r-c-z*	*106*	*6.9*	*0.58*	*4420*	*1.44*	*0.0656 ± 0.0016*	*0.0541 ± 0.0015*		*795 ± 52*	*339 ± 9*	*334 ± 9*
1b	*c-z*	*1064*	*77.6*	*0.59*	*7360*	*0.00*	*0.0592 ± 0.0011*	*0.0600 ± 0.0016*		*574 ± 41*	*375 ± 10*	*373 ± 10*
5	*an-r-c-z*	*136*	*9.7*	*0.43*	*2360*	*1.86*	*0.0566 ± 0.0009*	*0.0601 ± 0.0016*		*475 ± 33*	*376 ± 10*	*375 ± 10*
11	*c-z*	*190*	*19.5*	*0.59*	*6580*	*0.86*	*0.06918 ± 0.00064*	*0.0831 ± 0.0023*	*-37*	*904 ± 19*	*514 ± 14*	*507 ± 14*
7b	*c-z*	*812*	*117.0*	*0.86*	*5240*	*3.32*	*0.07053 ± 0.00028*	*0.102 ± 0.003*	*-31*	*944 ± 8*	*627 ± 16*	*620 ± 17*
G2	an-r-s-uz	30	16.9	2.07	>1e6	4.48	0.109 ± 0.002	0.318 ± 0.006		1789 ± 28	1780 ± 30	1780 ± 30
PB-69 (Beni Bousera)												
A-4b	an-r-o-uz	294	1.1	0.17	647	2.89	0.0505 ± 0.0024	0.00327 ± 0.00007			21.1 ± 0.5	21.0 ± 0.5
A-2b	sub-r-s-uz	243	0.9	0.22	1400	1.33	0.0457 ± 0.0036	0.00339 ± 0.00011			21.8 ± 0.7	21.8 ± 0.7
A-5a	an-r-o-uz	402	1.6	0.20	1220	1.53	0.0502 ± 0.0019	0.00345 ± 0.00007			22.2 ± 0.4	22.1 ± 0.4
B-3	an-r-s-uz	761	2.9	0.16	3440	0.54	0.0486 ± 0.0012	0.00347 ± 0.00006			22.3 ± 0.4	22.3 ± 0.4
B-5	an-r-o-uz	561	2.2	0.15	2080	0.90	0.0479 ± 0.0015	0.00348 ± 0.00006			22.4 ± 0.4	22.4 ± 0.4

continued…

Table DR1 continued

Analysis[1]	Character[2]	[U] ppm	[Pb] ppm	Th/U[3]	$^{206}Pb/^{204}Pb$	f_{206}[4] %	$^{207}Pb/^{206}Pb$	$^{206}Pb/^{238}U$	Disc[5] %	$^{207}Pb/^{206}Pb$ age (Ma)	$^{206}Pb/^{238}U$ age (Ma)	$^{206}Pb/^{238}U_{corr}$[6] age (Ma)
PB-69 continued												
B-6	an-r-s-uz	385	1.5	0.14	1460	1.28	0.0465 ± 0.0016	0.00349 ± 0.00007			22.4 ± 0.5	22.4 ± 0.5
B-7	an-r-o-uz	382	1.5	0.22	786	2.38	0.051 ± 0.0019	0.00351 ± 0.00006			22.6 ± 0.4	22.5 ± 0.4
A-2a	sub-r-s-uz	253	1.0	0.25	>1e6	0.00	0.0422 ± 0.0024	0.00352 ± 0.00008			22.6 ± 0.5	22.7 ± 0.5
A-5b	an-r-o-uz	321	1.3	0.21	916	2.04	0.0506 ± 0.0028	0.00355 ± 0.00010			22.8 ± 0.7	22.7 ± 0.7
B-4b	sub-r-s-uz	447	1.8	0.23	7340	0.25	0.0423 ± 0.0015	0.00356 ± 0.00006			22.9 ± 0.4	23.0 ± 0.4
B-4a	sub-r-s-uz	538	2.2	0.27	1020	1.83	0.0509 ± 0.0014	0.00359 ± 0.00006			23.1 ± 0.4	23.0 ± 0.4
B-1	sub-r-s-uz	431	1.7	0.11	2490	0.75	0.0473 ± 0.0021	0.00360 ± 0.00008			23.1 ± 0.5	23.1 ± 0.5
A-6	an-r-s-uz	217	0.9	0.19	>1e6	0.00	0.0479 ± 0.0026	0.00363 ± 0.00010			23.4 ± 0.7	23.3 ± 0.7
B-2	an-r-s-uz	369	1.5	0.21	1590	1.17	0.0493 ± 0.002	0.00367 ± 0.00006			23.6 ± 0.4	23.5 ± 0.4
B-10	sub-r-o?-uz	2956	11.7	0.06	8670	0.22	0.04705 ± 0.00041	0.00372 ± 0.00004		52 ± 21	24.0 ± 0.3	23.9 ± 0.3
A-4a	an-r-o-uz	261	1.1	0.16	1650	1.14	0.0481 ± 0.0022	0.00385 ± 0.00007			24.8 ± 0.5	24.7 ± 0.5
A-1	an-r-o-uz	277	1.3	0.41	907	2.06	0.0508 ± 0.0023	0.00388 ± 0.00008			24.9 ± 0.5	24.8 ± 0.5
A-7	sub-r-o-uz	326	1.6	0.06	1210	1.55	0.0484 ± 0.0019	0.00444 ± 0.00009			28.6 ± 0.6	28.5 ± 0.6
A-9	sub-r-o-uz	235	2.9	0.06	403	4.64	0.0565 ± 0.0034	0.0113 ± 0.0004			72.1 ± 2.6	71.3 ± 2.6
A-3	an-r-o-uz	281	3.7	0.05	2740	0.68	0.0611 ± 0.0029	0.0123 ± 0.0004			78.6 ± 2.6	77.2 ± 2.5
B-8	c-z	87	2.3	0.70	763	2.45	0.0685 ± 0.0021	0.0195 ± 0.0003		882 ± 62	125 ± 2	122 ± 2
A-10	an-r-o-uz	265	6.6	0.04	724	2.58	0.0536 ± 0.0015	0.0234 ± 0.0007		352 ± 60	149 ± 4	148 ± 4
A-8	sub-r-o/mix-uz	266	7.0	0.04	5750	0.33	0.0521 ± 0.0016	0.0248 ± 0.0006		290 ± 71	158 ± 4	157 ± 4
B-12	c-uz	2483	158.6	0.12	1060	0.02	0.0601 ± 0.0016	0.0582 ± 0.0006		605 ± 57	365 ± 4	362 ± 4
B-11	an-r-c-z?	727	90.1	0.39	3390	0.06	0.06763 ± 0.00032	0.103 ± 0.001	-24	857 ± 10	631.8 ± 6.3	626 ± 6
B-9	c-z	582	127.2	0.39	1850	0.10	0.11 ± 0.001	0.173 ± 0.002	-41	1796 ± 19	1030 ± 10	983 ± 12
PB-182 (Ronda)												
A-7	sub-r-s-uz	298	1.2	0.43	>1e6	0.43	0.0528 ± 0.0026	0.00322 ± 0.00007			20.7 ± 0.4	20.5 ± 0.4
B-3a	sub-r-s-uz	607	2.3	0.27	3420	0.11	0.0459 ± 0.0013	0.00329 ± 0.00005			21.2 ± 0.3	21.2 ± 0.3
A-5	an-r-s-uz	232	1.0	0.53	1740	0.55	0.0453 ± 0.0038	0.00337 ± 0.00007			21.7 ± 0.4	21.7 ± 0.5
A-1	an-r-o-uz	232	0.9	0.17	1900	0.40	0.0544 ± 0.0029	0.00341 ± 0.00008			21.9 ± 0.5	21.7 ± 0.5
B-7	an-r-o-uz	461	1.7	0.07	301	0.03	0.0538 ± 0.0021	0.00343 ± 0.00007			22.1 ± 0.5	21.9 ± 0.5
B-1	an-r-s-uz	478	1.9	0.20	4370	58.5	0.0485 ± 0.0016	0.00343 ± 0.00005			22.1 ± 0.3	22 ± 0.3
B-3b	sub-r-s-uz	612	2.5	0.46	3010	6.21	0.0481 ± 0.0014	0.00347 ± 0.00008			22.3 ± 0.5	22.3 ± 0.5
A-6	an-r-s-uz	427	1.7	0.31	>1e6	0.03	0.0481 ± 0.0019	0.00347 ± 0.00005			22.4 ± 0.4	22.3 ± 0.4
B-3c	sub-r-s-uz	622	2.6	0.49	1050	0.99	0.0463 ± 0.0014	0.00348 ± 0.00008			22.4 ± 0.5	22.4 ± 0.5
A-3	sub-r-s-uz	644	2.5	0.25	6830	0.13	0.0457 ± 0.0016	0.0035 ± 0.00005			22.5 ± 0.3	22.5 ± 0.3
B-6	sub-p-o-uz	527	2.1	0.05	32	0.27	0.0566 ± 0.0016	0.00367 ± 0.00006			23.6 ± 0.4	23.3 ± 0.4
B-4	an-r-o-uz	284	1.4	0.04	4640	0.25	0.0478 ± 0.0016	0.00464 ± 0.00008			29.8 ± 0.5	29.8 ± 0.5
A-4	an-r-o-(z?)	240	5.9	0.04	7430	1.08	0.0511 ± 0.0012	0.0232 ± 0.0007		245 ± 52	148 ± 4	147 ± 4

continued…

Table DR1 continued

Analysis[1]	Character[2]	[U] ppm	[Pb] ppm	Th/U[3]	$^{206}Pb/^{204}Pb$	f_{206}[4] %	$^{207}Pb/^{206}Pb$	$^{206}Pb/^{238}U$	Disc[5] %	$^{207}Pb/^{206}Pb$ age (Ma)	$^{206}Pb/^{238}U$ age (Ma)	$^{206}Pb/^{238}U_{corr}$[6] age (Ma)
PB-182 continued												
B-2c	o-uz (mix?)	404	10.4	0.05	1700	0.00	0.0534 ± 0.001	0.024 ± 0.0006		344 ± 42	153 ± 4	152 ± 4
B-2c2	o-uz (mix?)	403	10.6	0.05	1400	0.00	0.0529 ± 0.0011	0.0247 ± 0.0008		326 ± 48	157 ± 5	156 ± 5
A-8	sub-r-o-uz	274	7.3	0.03	9780	0.19	0.0529 ± 0.0047	0.0249 ± 0.0017		325 ± 191	158 ± 11	158 ± 11
B-9b	an-r-o-uz (mix)	325	9.4	0.10	1410	0.62	0.0576 ± 0.0013	0.0266 ± 0.0007		514 ± 48	169 ± 4	167 ± 4
A-2	sub-r-s-uz	258	8.3	0.04	1440	0.18	0.0507 ± 0.0013	0.0303 ± 0.0005		225 ± 60	192 ± 3	192 ± 3
B-2a	an-r-o-uz	253	10.2	0.03	1670	0.12	0.0467 ± 0.0012	0.0379 ± 0.0006		36 ± 60	240 ± 4	241 ± 4
B-10	sub-p-z	401	19.7	0.65	1910	0.02	0.0518 ± 0.0006	0.0395 ± 0.0009		278 ± 26	250 ± 6	250 ± 6
B-8	an-r-o-uz	672	31.3	0.15	6430	0.10	0.05222 ± 0.00037	0.0414 ± 0.0006		295 ± 16	262 ± 4	261 ± 4
B-5a	sub-p-o-uz	603	27.6	0.04	7480	0.04	0.0511 ± 0.0006	0.0427 ± 0.0007		245 ± 27	270 ± 4	270 ± 4
B-5b	c(?)-uz	673	37.9	0.51	1580	0.13	0.05131 ± 0.00035	0.0471 ± 0.0011		255 ± 16	296 ± 7	297 ± 7
B-9	an-r-o-uz (mix)	491	27.0	0.05	8140	0.11	0.0534 ± 0.0007	0.0515 ± 0.0012		347 ± 28	324 ± 7	323 ± 7
B-2b	c-z	758	76.1	0.35	4320	1.32	0.0599 ± 0.0011	0.0865 ± 0.002		600 ± 39	535 ± 12	533 ± 12

Analytical methodology follows that reported by Platt and Whitehouse (1999) and references therein. $^{207}Pb/^{206}Pb$ ratio errors are counting statistics only; $^{206}Pb/^{238}U$ ratios include a component propogated from replicate analyses of the Geostandards 91500 reference zircon (Wiedenbeck et al., 1995). All errors quoted in this table are 1σ. Data are sorted according to $^{206}Pb/^{238}U_{corr}$ age (see 6 below).

1 Italicized data from PB-383 have been presented previously (Platt and Whitehouse, 1999) but have been recalculated using new error propagation routines applicable to the other data presented in this study. Prefix "G" indicates that the zircon grain was separated from a garnet concentrate. Prefixes A and B for samples PB-69 and PB-182 refer to separate ion-microprobe grain mounts.

2 Characteristics of analysed grain based upon CL and optical investigation. Abbreviations: external grain morphology, eu – euhedral, sub – subhedral, an – anhedral, p – prismatic/elongate, r – rounded/irregular; zonation, c – core, o – outer, s – single phase, z – oscillatory and/or sector zoned, uz – unzoned.

3 Calculated from measured ThO intensity.

4 Percentage of common Pb detected, calculated from measured ^{204}Pb and assuming 0 Ma Stacey and Kramers (1975) average terrestrial Pb. No common Pb corrections have been applied to ratios reported in this table.

5 Degree of discordance (%); not reported for analyses that are concordant within 2σ error limits.

6 Concordia age calculated from uncorrected ratios assuming 0 Ma Stacey and Kramers (1975) average terrestrial Pb ("^{207}Pb corrected" age, Ludwig, 1998).

References

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Table DR2. Ar-Ar Data from sites in the Alboran Domain

Amounts of 39Ar x 10-12 cc STP

Erors on J values are 0.5 %

Site 1. Carratraca

J = 0.005405	^{40}**Ar/**^{39}**Ar**	^{38}**Ar/**^{39}**Ar**	^{37}**Ar/**^{39}**Ar**	^{36}**Ar/**^{39}**Ar**	^{39}**Ar**	^{40}**Ar/**^{39}**Ar***	**Age (Ma)**	±
PB378 B spot 1	2.19	0.028	0.025	0.0003	88.7	2.10	20.3	0.4
PB378 B spot 2	2.32	0.029	0.033	0.0002	139.9	2.25	21.8	0.3
PB378 B spot 3	2.16	0.030	0.026	0.0002	170.0	2.11	20.4	0.2
PB378 B spot 4	2.25	0.031	0.020	0.0002	169.0	2.18	21.2	0.2
PB378 B spot 5	2.08	0.029	-0.021	0.0000	91.8	2.07	20.0	0.5
PB378 B spot 6	2.08	0.030	-0.061	0.0001	32.6	2.04	19.8	1.5
PB378 B spot 7	2.34	0.029	-0.081	0.0009	9.2	2.07	20.1	5.2
Wt mean							**20.9**	**0.4**

J = 0.005405	^{40}**Ar/**^{39}**Ar**	^{38}**Ar/**^{39}**Ar**	^{37}**Ar/**^{39}**Ar**	^{36}**Ar/**^{39}**Ar**	^{39}**Ar**	^{40}**Ar/**^{39}**Ar***	**Age (Ma)**	±
PB379 B spot 1	2.48	0.048	-0.539	0.0016	6.8	2.01	19.5	7.7
PB379 B spot 2	2.61	0.046	-0.305	0.0011	9.2	2.29	22.2	5.7
PB379 B spot 3	2.48	0.036	-0.027	0.0007	67.8	2.26	21.9	0.8
PB379 B spot 4	2.44	0.040	0.003	0.0009	200.7	2.16	20.9	0.3
PB379 B spot 5	2.59	0.042	-0.010	0.0010	24.1	2.29	22.2	2.2
PB379 B spot 6	2.44	0.042	0.022	0.0007	58.5	2.23	21.7	0.9
PB379 B spot 7	3.05	0.047	-0.001	0.0030	23.5	2.16	21.0	2.2
PB379 B spot 8	2.90	0.045	0.003	0.0019	110.5	2.34	22.7	0.5
PB379 B spot 9	2.63	0.045	0.015	0.0015	186.1	2.20	21.3	0.3
PB379 B spot 10	2.53	0.044	0.019	0.0015	200.9	2.09	20.3	0.4
Wt mean							**21.1**	**0.4**

J = 0.005405	^{40}**Ar/**^{39}**Ar**	^{38}**Ar/**^{39}**Ar**	^{37}**Ar/**^{39}**Ar**	^{36}**Ar/**^{39}**Ar**	^{39}**Ar**	^{40}**Ar/**^{39}**Ar***	**Age (Ma)**	±
PB381 B spot 1	2.45	0.042	0.009	0.0016	256.6	1.99	19.3	0.2
PB381 B spot 2	3.14	0.052	0.031	0.0032	219.6	2.20	21.3	0.3
PB381 B spot 3	2.26	0.026	-0.127	0.0002	55.0	2.19	21.2	0.8
PB381 B spot 4	2.39	0.040	-0.173	0.0006	38.9	2.21	21.4	1.1
PB381 B spot 5	2.37	0.033	-0.023	0.0005	152.6	2.21	21.4	0.3
PB381 B spot 6	2.27	0.039	-0.005	0.0002	314.4	2.20	21.4	0.2
PB381 B spot 7	2.24	0.039	-0.004	0.0002	242.3	2.19	21.2	0.2
PB381 B spot 8	2.44	0.041	-0.002	0.0007	261.0	2.24	21.7	0.2
PB381 B spot 9	2.38	0.041	0.016	0.0011	134.6	2.06	20.0	0.3
Wt mean							**21.0**	**0.6**

Weighted mean of three Carratraca biotite samples (PB378, PB379, PB381)	**21.0**	**0.3**

Table DR2 continued

J = 0.009634	$^{40}Ar/^{39}Ar$	$^{38}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$	^{39}Ar	$^{40}Ar^{*}/^{39}Ar$	Age (Ma)	+-
TAE11 M spot 1	1.462	0.014	0.010	0.0011	124.4	1.134	19.6	0.3
TAE11 M spot 2	12.304	0.020	-0.001	0.0349	7.5	1.988	34.2	4.2
TAE11 M spot 3	4.267	0.015	0.023	0.0106	23.8	1.134	19.6	1.3
TAE11 M spot 4	9.186	0.018	0.013	0.0160	24.6	4.448	75.7	1.3
TAE11 M spot 5	40.156	0.035	0.063	0.1003	7.5	10.513	174.0	4.0
TAE11 M spot 6	6.882	0.015	0.120	0.0124	55.9	3.230	55.3	0.7
TAE11 M spot 7	1.675	0.014	0.101	0.0015	255.9	1.232	21.3	0.2
TAE11 M spot 8	2.144	0.014	-0.002	0.0015	130.7	1.697	29.3	0.3
TAE11 M spot 9	1.649	0.014	-0.005	0.0009	88.9	1.383	23.9	0.4
TAE11 M spot 10	1.585	0.014	0.015	0.0012	132.9	1.241	21.4	0.3
TAE11 M spot 11	1.274	0.014	0.000	0.0006	312.9	1.107	19.1	0.2
TAE11 M spot 12	1.777	0.012	-0.008	0.0017	55.6	1.263	21.8	0.4
TAE11 M spot 13	2.102	0.013	0.009	0.0026	47.1	1.339	23.1	0.2
TAE11 M spot 14	1.452	0.014	0.064	0.0008	198.6	1.213	21.0	0.2
TAE11 M spot 15	1.279	0.014	0.046	0.0004	180.2	1.166	20.1	0.2
Weighted mean age							**20.5**	**0.7**

Highlighted samples were not used to calculate the age

J = 0.005405	$^{40}Ar/^{39}Ar$	$^{38}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$	^{39}Ar	$^{40}Ar/^{39}Ar^{*}$	Age (Ma)	±
PB382 Hb spot 1	2.64	0.011	65.971	0.0004	99.8	2.52	24.5	0.5
PB382 Hb spot 2	2.28	0.011	90.242	0.0001	56.9	2.24	21.7	0.6
PB382 Hb spot 3	1.92	0.010	65.953	0.0001	68.6	1.90	18.4	0.5
PB382 Hb spot 4	2.50	0.011	15.470	0.0003	184.1	2.41	23.3	0.3
PB382 Hb spot 5	3.65	0.012	8.120	0.0011	89.5	3.31	32.0	0.4
PB382 Hb spot 6	3.44	0.012	14.962	0.0010	51.7	3.15	30.4	0.7
PB382 Hb spot 7	3.15	0.010	10.707	0.0010	52.2	2.85	27.6	0.8
PB382 Hb spot 8	2.35	0.011	9.116	0.0002	61.6	2.28	22.1	0.6
PB382 Hb spot 9	2.17	0.012	13.558	0.0001	49.5	2.13	20.7	1.2
Isochron Age							**19.5**	**2.0**
40Ar/36Ar intercept							1430.0	

Site 5. Almuñecar

J = 0.005405	$^{40}Ar/^{39}Ar$	$^{38}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$	^{39}Ar	$^{40}Ar/^{39}Ar^{*}$	Age (Ma)	±
PB342 B spot 1	2.03	0.022	0.001	0.0004	128.9	1.91	18.5	0.4
PB342 B spot 2	2.05	0.022	0.000	0.0004	103.2	1.93	18.7	0.3
PB342 B spot 3	1.98	0.022	0.001	0.0002	63.5	1.93	18.7	0.5
PB342 B spot 4	1.99	0.022	0.000	0.0004	161.3	1.86	18.1	0.2
PB342 B spot 5	2.09	0.022	0.001	0.0003	87.4	2.01	19.4	0.3
PB342 B spot 6	2.05	0.020	0.000	0.0002	128.5	2.00	19.4	0.2
PB342 B spot 7	1.99	0.020	0.005	0.0002	37.2	1.93	18.7	0.5
Wt mean							**18.9**	**0.5**

Table DR2 continued

J = 0.005405	$^{40}Ar/^{39}Ar$	$^{38}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$	^{39}Ar	$^{40}Ar/^{39}Ar^*$	Age (Ma)	±
PB342 M spot 1	2.27	0.013	0.000	0.0005	93.1	2.14	20.7	0.3
PB342 M spot 2	2.20	0.014	0.000	0.0010	89.6	1.92	18.6	0.3
PB342 M spot 3	2.25	0.015	0.001	0.0006	54.6	2.09	20.3	0.5
PB342 M spot 4	2.18	0.014	0.001	0.0007	94.0	1.98	19.2	0.3
PB342 M spot 5	2.06	0.014	0.000	0.0006	126.0	1.89	18.3	0.2
PB342 M spot 6	2.09	0.014	0.000	0.0005	164.9	1.95	18.9	0.1
PB342 M spot 7	2.13	0.014	0.001	0.0007	80.7	1.94	18.8	0.4
Wt mean							**19.0**	**0.7**

Site 6. Sierra Cabrera

J = 0.005405	$^{40}Ar/^{39}Ar$	$^{38}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$	^{39}Ar	$^{40}Ar/^{39}Ar^*$	Age (Ma)	±
PB411 M spot 1	2.22	0.029	-0.016	0.0012	172.1	1.86	18.1	0.3
PB411 M spot 2	2.06	0.030	-0.003	0.0008	172.7	1.82	17.7	0.3
PB411 M spot 3	2.33	0.031	-0.003	0.0014	56.0	1.93	18.8	0.9
PB411 M spot 4	2.35	0.031	0.000	0.0006	199.1	2.16	20.9	0.3
PB411 M spot 5	2.13	0.031	0.004	0.0002	319.2	2.09	20.2	0.3
PB411 M spot 6	2.57	0.032	-0.010	0.0021	91.6	1.96	19.0	0.6
PB411 M spot 7	2.84	0.036	0.020	0.0024	58.4	2.11	20.5	0.8
PB411 M spot 8	2.32	0.031	-0.010	0.0007	59.7	2.11	20.5	0.9
Wt mean							**19.3**	**1.0**

J = 0.005405	$^{40}Ar/^{39}Ar$	$^{38}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$	^{39}Ar	$^{40}Ar/^{39}Ar^*$	Age (Ma)	±
PB410 B spot 1	1.99	0.029	0.000	0.0005	54.9	1.84	17.8	0.6
PB410 B spot 2	2.06	0.032	0.000	0.0001	226.3	2.03	19.7	0.3
PB410 B spot 3	2.07	0.031	0.000	0.0001	105.4	2.05	19.9	0.3
PB410 B spot 4	2.05	0.032	0.000	0.0001	86.0	2.02	19.6	0.4
PB410 B spot 5	2.00	0.032	0.000	0.0006	123.4	1.83	17.8	0.4
PB410 B spot 6	2.73	0.035	0.000	0.0023	141.0	2.05	19.9	0.4
PB410 B spot 7	1.94	0.031	0.000	0.0006	6.5	1.76	17.1	5.0
PB410 B spot 8	1.82	0.033	0.000	0.0007	36.2	1.60	15.5	0.9
PB410 B spot 9	2.17	0.033	0.000	0.0007	273.0	1.95	18.9	0.1
PB410 B spot 10	2.02	0.032	0.000	0.0012	142.2	1.68	16.3	0.2
Wt mean							**18.6**	**0.8**

B: biotite. M: muscovite. Hb: hornblende

Table 3: Fission track analytical data on zircons from sites in the Alboran Domain

Sample No./ Field No.	Rock type	No. of crystals	Dosimeter ρd	Nd	Spontaneous ρs	Ns	Induced ρi	Ni	Age Dispersion $P\chi^2$	RE%	Central Age (Ma) $\pm 1\sigma$
Site 1 Carratraca											
CAR 5A	mica schist	13	0.423	3039	2.967	514	4.346	753	<1	26.4	**19.0 ± 2.0**
PB 437	quartzite	7	1.510	8347	0.197	72	2.408	881	95	0	**20.8 ± 2.6**
CAR 17	psammite	16	0.424	3039	4.911	1307	6.227	1657	10	10.2	**21.0 ± 1.0**
CAR 19	gneiss	21	0.425	1340	3.300	1340	4.061	1649	<1	25.1	**22.0 ± 2.0**
PB 383b	garnet gneiss	22	0.423	3520	2.900	1495	3.534	1822	10	8.5	**21.4 ± 0.9**
PB 384b	garnet gneiss	13	0.423	3520	4.669	906	5.664	1099	70	0	**21.6 ± 1.0**

Track densities are $\times 10^6$ tr cm^{-2}. Analyses are by external detector method using 0.5 for the $4\pi/2\pi$ geometry correction factor. Ages were calculated using dosimeter glass CN2; analyst Carter $\zeta_{CN2} = 127 \pm 5$; calibrated by multiple analyses of IUGS zircon age standards (see Hurford 1990). $P\chi^2$ is probability for obtaining χ^2 value for v degrees of freedom, where v = no. crystals - 1. Central age is a modal age, weighted for different precisions of individual crystals (see Galbraith and Laslett, 1993).

References:

Galbraith, R.F. and Laslett, G.M., 1993. Statistical models for mixed fission track ages. Nuclear Tracks and Radiation Measurement, v. 21, p. 459-470.

Hurford, A.J., 1990. Standardization of fission track dating calibration: recommendation by the Fission Track Working Group of the I.U.G.S. Subcommission on Geochronology. Chemical Geology, v. 80, p. 171-178.

Table 4: Fission track analytical data on apatite from sites in the Alboran Domain

Sample No./ Field No.	Rock type	No. of crystals	Dosimeter ρd	Dosimeter Nd	Spontaneous ρs	Spontaneous Ns	Induced ρi	Induced Ni	Age Dispersion $P\chi^2$	Age Dispersion RE%	Central Age (Ma) $\pm 1\sigma$	Mean Track length (μm)	S.d.	No. of tracks
Site 1 Carratraca														
CAR 5A	mica schist	15	0.124	6882	1.235	63	1.429	729	40	18.5	**18.0 ± 0.3**	13.80 ± 0.33	0.80	7
PB 437	quartzite	7	1.510	8347	0.197	72	2.408	881	95	0	**20.8 ± 2.6**	No lengths		
CAR 14	phyllite	18	1.064	5091	0.158	188	1.707	2061	30	11.4	**16.4 ± 1.4**	13.94 ± 0.49	1.46	10
CAR 16	qtzite	14	1.064	5091	0.431	175	4.410	1791	<1	28.8	**19.2 ± 2.3**	12.52 ± 0.46	1.82	17
CAR 17	psammite	25	1.064	5091	0.244	335	2.495	3423	40	13.6	**17.8 ± 1.2**	13.90 ± 0.14	1.44	108
CAR 19	gneiss	22	1.064	5091	0.147	198	1.783	2395	75	0.03	**14.9 ± 1.1**	13.60 ± 0.14	1.36	91
PB 439	sillimanite gneiss	20	1.510	8347	0.206	328	3.061	4871	77	0.2	**17.2 ± 1.0**	14.52 ± 0.23	1.42	41
PB 379	migmatitic gneiss	26	1.161	6429	0.232	258	2.039	2272	50	5.6	**22.4 ± 1.5**	14.77 ± 0.24	1.14	24
PB 380	leucosome	23	1.161	6429	0.271	361	2.609	3475	60	0.7	**20.4 ± 1.2**	14.62 ± 0.22	1.12	26
PB 381	garnet gneiss	21	1.161	6429	0.110	193	1.034	1814	30	16.5	**21.7 ± 1.9**	15.05 ± 0.28	1.22	20
PB 383b	garnet gneiss	24	1.510	8347	0.053	98	0.823	1603	6	25.5	**15.9 ± 1.9**	14.75 ± 0.16	1.27	61
PB 383	garnet granulite	5	1.161	6429	0.066	23	0.681	236	7	0	**19.2 ± 4.2**	no confined	tracks	
PB 384	gneiss	20	1.161	6429	0.319	215	2.667	1800	60	0.9	**23.5 ± 1.7**	14.18 ± 0.37	1.90	28
weighted mean												18.3 ± 0.7		
Site 5 Almuñecar														
PB 342	Migmatitic gneiss	24	1.161	6429	0.182	120	1.804	1193	99	0	**19.8 ± 1.9**	14.98 ± 0.21	0.62	10
PB 343	Leucosome	22	1.161	6429	0.371	332	3.573	3199	10	11.3	**20.5 ± 1.3**	14.72 ± 0.12	0.90	58

Track densities are x10^6 tr cm^{-2}. Analyses are by external detector method using 0.5 for the $4\pi/2\pi$ geometry correction factor. Ages were calculated using dosimeter glass CN5; analyst Carter $\zeta_{CN5} = 339 \pm 5$; calibrated by multiple analyses of IUGS apatite age standards (see Hurford 1990). $P\chi^2$ is probability for obtaining χ^2 value for v degrees of freedom, where v = no. crystals - 1. Central age is a modal age, weighted for different precisions of individual crystals (see Galbraith and Laslett, 1993).

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