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EOCENE AND EARLY OLIGOCENE FORELAND BASIN SEDIMENTATION IN THE WESTERN ALPS

This section briefly outlines the Eocene-early Oligocene evolution of the pro-foreland of the western Alps, prior to the deposition of the target units of this study. The sedimentary rock archive of the Alpine collision in the western Alps is preserved in a series of Eocene to Quaternary foreland deposits both atop and in front of the Digne thrust sheet (Fig. 1). From mid-Eocene to mid-Oligocene times, marine deposits accumulated diachronously in a flexural foreland basin ahead of the developing Alpine orogenic wedge. These were deposited atop Mesozoic carbonates, emergent since the end-Cretaceous, and autochthonous Paleocene-Eocene valley-fill conglomerates (Ford and Lickorish, 2004; Ford et al., 1999; Gupta, 1999). During this time, the basin fill comprised the classic Nummulitic Trilogy found extensively around the Alpine arc: basal nummulitic limestones (Calcaires Nummulitiques), overlain by globigerina marls (Marnes Bleues), overlain in turn by turbiditic clastic sandstones (Grès d'Annot) and local equivalents (e.g., Grès de Ville), all of which record generally increasing water depths. In SE France, these turbidites record N-directed paleoflow, with the principal source identified as the Maures-Tanneron massif, a polymetamorphic basement terrane chiefly comprising Silurian-Devonian orthogneisses intruded by late Carboniferous granitoids (Joseph and Lomas, 2004).

A major change in basin character occurred in the mid Oligocene following Grès d'Annot deposition: the Nummulitic flexure-dominated foreland basin ceased to exist as the Digne thrust sheet became increasingly emergent. Remnants of the Nummulitic succession are patchily preserved across the Alpine foreland of SE France (Fig. 1), including the lower fill of the Barrême basin (Fig. 2). Deposition was increasingly confined to a series of small wedge-top basins atop the Digne sheet near the thrust front, coupled with alluvial fan deposits eroding from the front of the thrust sheet. Ford et al. (1999) link this event to overthrusting of the eastern Nummulitic basin margin by the Autapie (lower) member of the Embrunais-Ubaye nappes, an event recorded by the Schistes à Blocs olistostrome (Kerckhove, 1969). The combination of nappe emplacement and continued shallow-crustal shortening of the Digne thrust sheet sufficiently distributed the orogenic load to permit uplift and partial erosion of the units of the Nummulitic trilogy (Ford et al., 1999). The western limit of nappe emplacement is inferred to have been slightly further west than its current extent (Labaume et al., 2008).

CONSTRAINTS ON DEPOSITION AGES OF BARRÊME AND VALENSOLE BASIN UNITS

Biostratigraphic schemes: Planktonic foraminifers NP zones, calcareous nannoplankton NN zones, and European mammalian MN-MP zones. All biozone ages are those of Gradstein et al. (2012) unless otherwise stated.

Poudingues d'Argens: Pre-Priabonian? Age poorly constrained.

Calcaires Nummulitiques: 35.71 - 34.03 Ma, plankton zone P16-P17 (Joseph et al., 2012).

Marnes Bleues: 34.03 - 30.28 Ma, plankton zone P18–19 (Joseph et al., 2012).

Grès d'Ville (Grès d'Annot): 30.28 - 29.18 Ma, plankton zone P20 (Joseph et al., 2012).

Conglomérat de Clumanc, BA01: 29.18 - 26.93 Ma. Based on presence in intercalated marls of biota from plankton zones P20-P21, and nannoplankton zone NP24 (Joseph et al., 2012).

Grès de Senez, BA02: 29.18 - 26.93 Ma (?). Poorly fossiliferous. Traditionally correlated with the Conglomérat de Clumanc (BA01; Joseph et al., 2012). Cannot be more than ca. 1.75 Ma younger and likely less, as overlaying basin-blanketing Molasse Rouge units are in turn overlain by Série Grise units no older than 25.18 Ma.

Molasse Rouge, BA03: 26.93 - 25.18 Ma. Based on ages of under/overlying units.

Série Grise, BA04: 25.18 - 24.73 Ma. Based on presence of biota from vertebrate microfauna zone MP28 (Carbonnel et al., 1972; calibrated by Mertz et al., 2006).

Grès Verts, BA05: 24.73 – 22.46 Ma. Constrained only by age of underlying Série Grise, and deposition onset in the Valensole basin during MN2a. Yields the vertebrate microfauna Eucricetodon sp. and Theridomyidae sp., and the charophytes Tectochara meriani and Rhabdochara praelangeri (Carbonnel et al., 1972). All of these are non-age diagnostic, but suggest a late Oligocene age.

Marnes de Tuilerie, VA01: 22.46 - 17.95 Ma. Sample from the base-Miocene Marnes de Tuilerie, which stratigraphically correlates to MM1 of Couëffé and Maridet (2003). Base MM1 deposited during vertebrate microfaunal zone MN2a, and mid MM2 is calcareous nannoplankton zone NN3/NN4 (Couëffé and Maridet, 2003).

Marine Molasse 4, VA02: 17.62 - 15.03 Ma. Yields biota from vertebrate microfauna zone MN4; top of unit at boundary with Lower Conglomérat de Valensole yields biota from MN5-mid (Couëffé and Maridet, 2003; calibrated by Agustí et al., 2001 and Kempf et al., 1999).

Lower Conglomérat de Valensole, VA03: 13.51 - 12.82 Ma. Sampled location bracketed by vertebrate microfauna MN7/8 at sites Colombier Haute and Colombier Bas (Clauzon et al., 1989; calibrated by Agustí et al., 2001 and Kempf et al., 1999).

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Table DR1. Sample locations. Coordinate system is WGS84. For the Conglomérat de Clumanc (BA01), equal material was collected from the first (Champ-Richard, BA01a) and second (Tréouiller, BA01b) members (Joseph et al., 2012).

Sample	Elevation (m asl)	Long. E	Lat. N
BA01a	905	6.369942	44.030725
BA01b	865	6.375268	44.033794
BA02	771	6.408091	43.916193
BA03	734	6.387170	43.965413
BA04	761	6.377037	43.952289
BA05	846	6.393622	43.948020
VA02	581	6.184622	44.065126
VA03	547	6.127435	44.028446

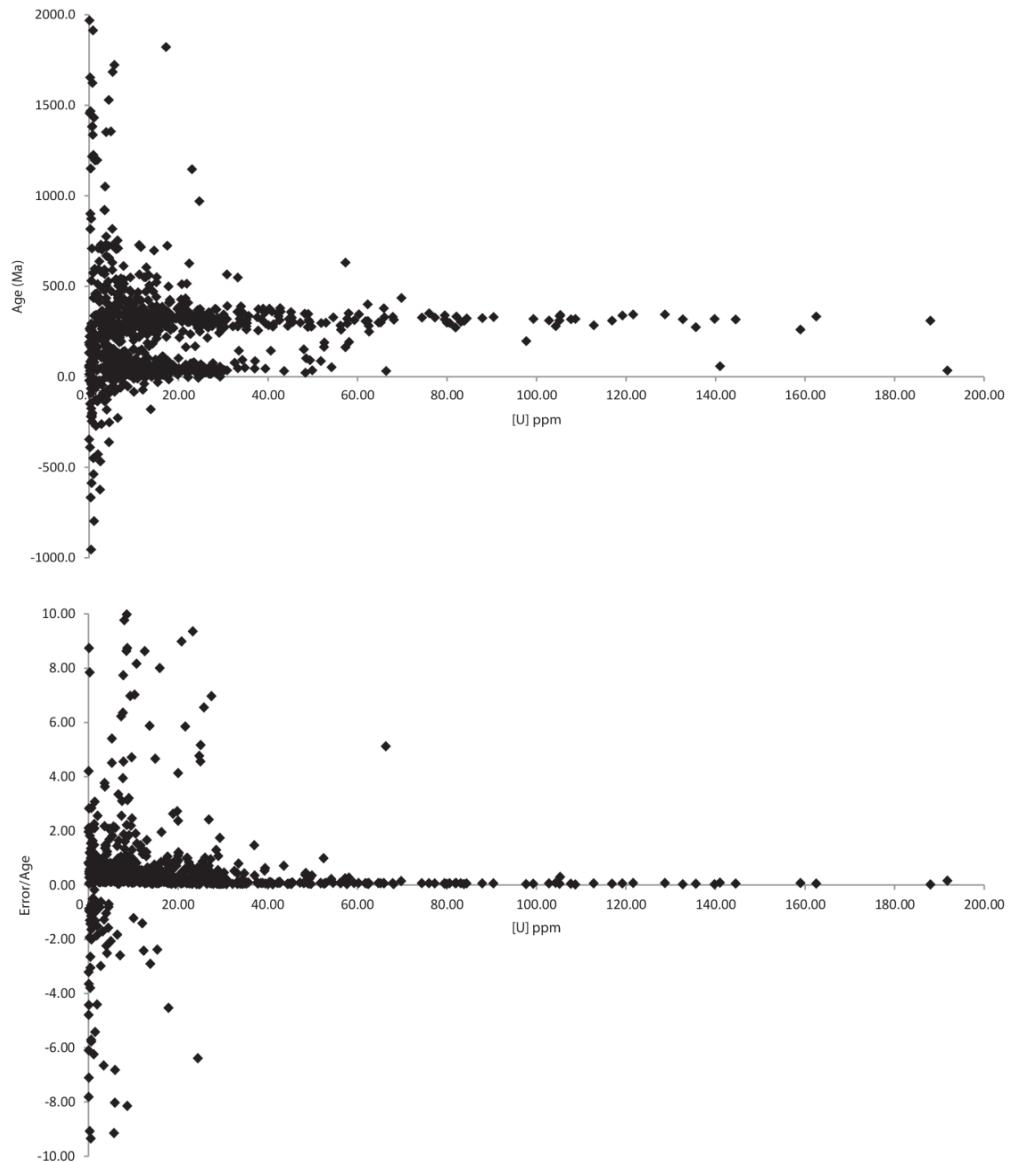


Figure DR1. Compilation of all apatite U-Pb data obtained in this study; $n = 950$. **A:** U concentration (ppm) vs apatite U-Pb age (Ma). Note the prominent clusters at ca. 300 – 400 Ma and at ca. 20 – 80 Ma, and also the wider spread of ages where $U <$ ca. 10 ppm, as also reported by Zattin et al. (2012). For convenience, excludes 19 extreme outliers ($17 < -1000$ Ma and $2 > 2000$ Ma) **B:** U concentration (ppm) vs error/age ratio. Excludes 57 extreme outliers (26 grains < -10 and 31 > 10).

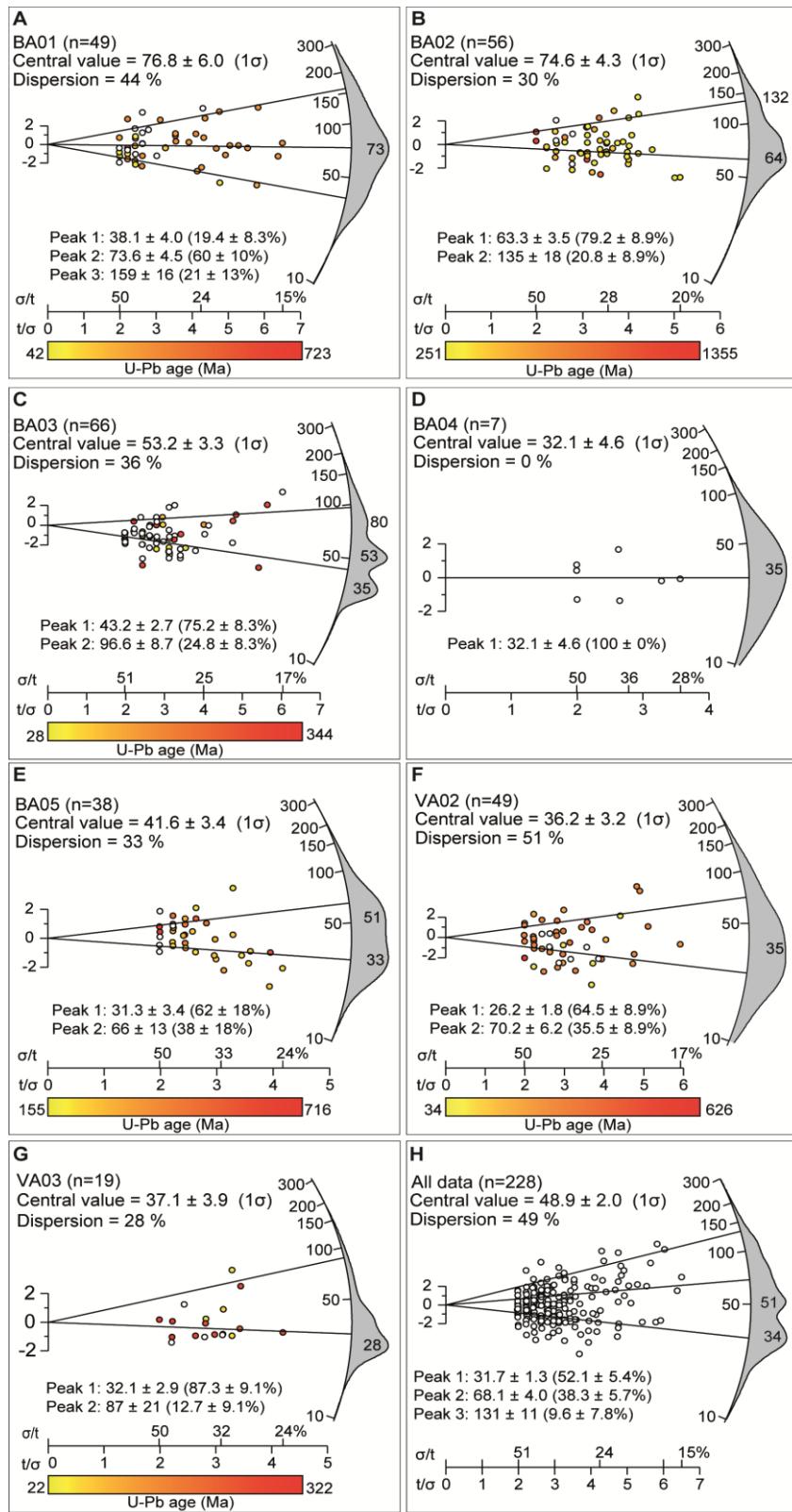


Figure DR2. AFT radial plots, excluding zero-track grains and grains with 1σ uncertainty $> 50\%$. Note that central and peak ages are unchanged within 1σ uncertainty, in comparison to Figure 5.

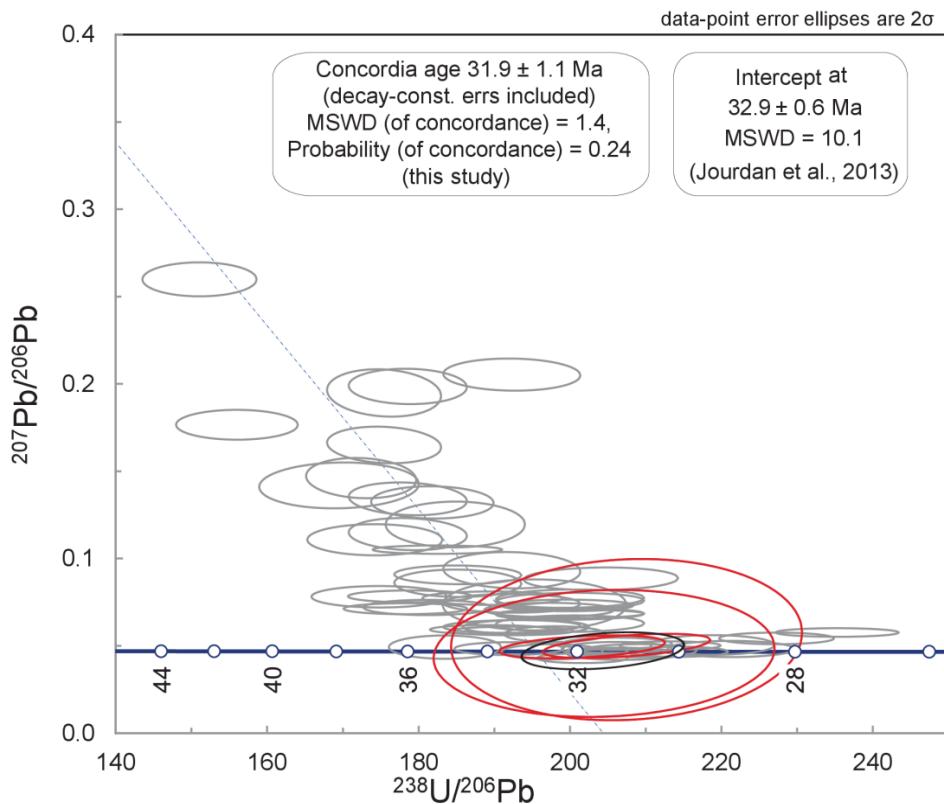


Figure DR3. Compilation of Alpine zircon U-Pb ages interpreted as volcanic. Grey ellipses: data from Grès de Ville, Conglomérat de Clumanc, and Conglomérat de Saint Lions, from Jourdan et al. (2013); red ellipses: data from Molasse Rouge (BA03, 2 grains) and lower Conglomérat de Valensole (VA03, 1 grain, two ages), this study.

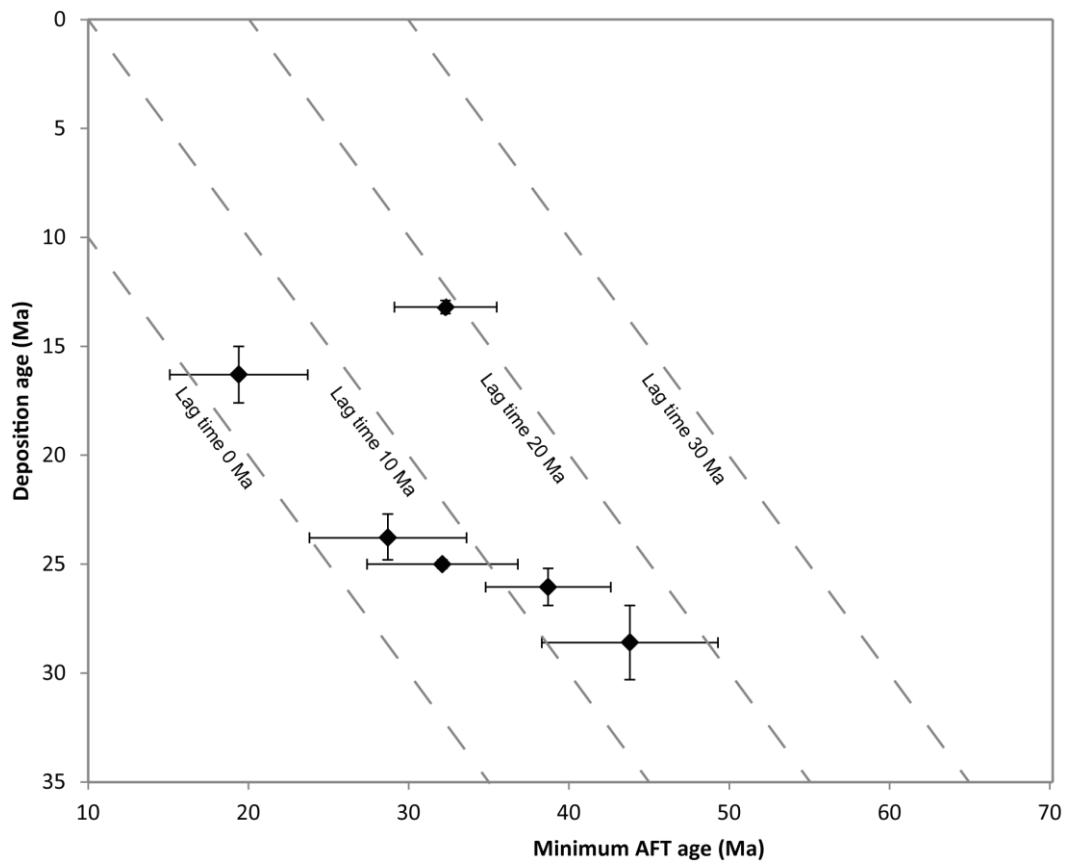


Figure DR4. Lag time plot for all samples excluding BA02 (as this sample is likely sourced from the Maures-Tanneron massif rather than the western Alps). These data record an abrupt increase in lag time at ca. 16 Ma, between deposition of Marine Molasse 4 (VA02) and the Lower Conglomérat de Valensole (VA03). Central AFT age values record an earlier decrease in lag time between ca. 29 Ma and ca. 16 Ma, but overlapping uncertainties mean the timing of this decrease cannot be closely constrained. Minimum AFT peak ages were calculated using RadialPlotter (Vermeesch, 2009).

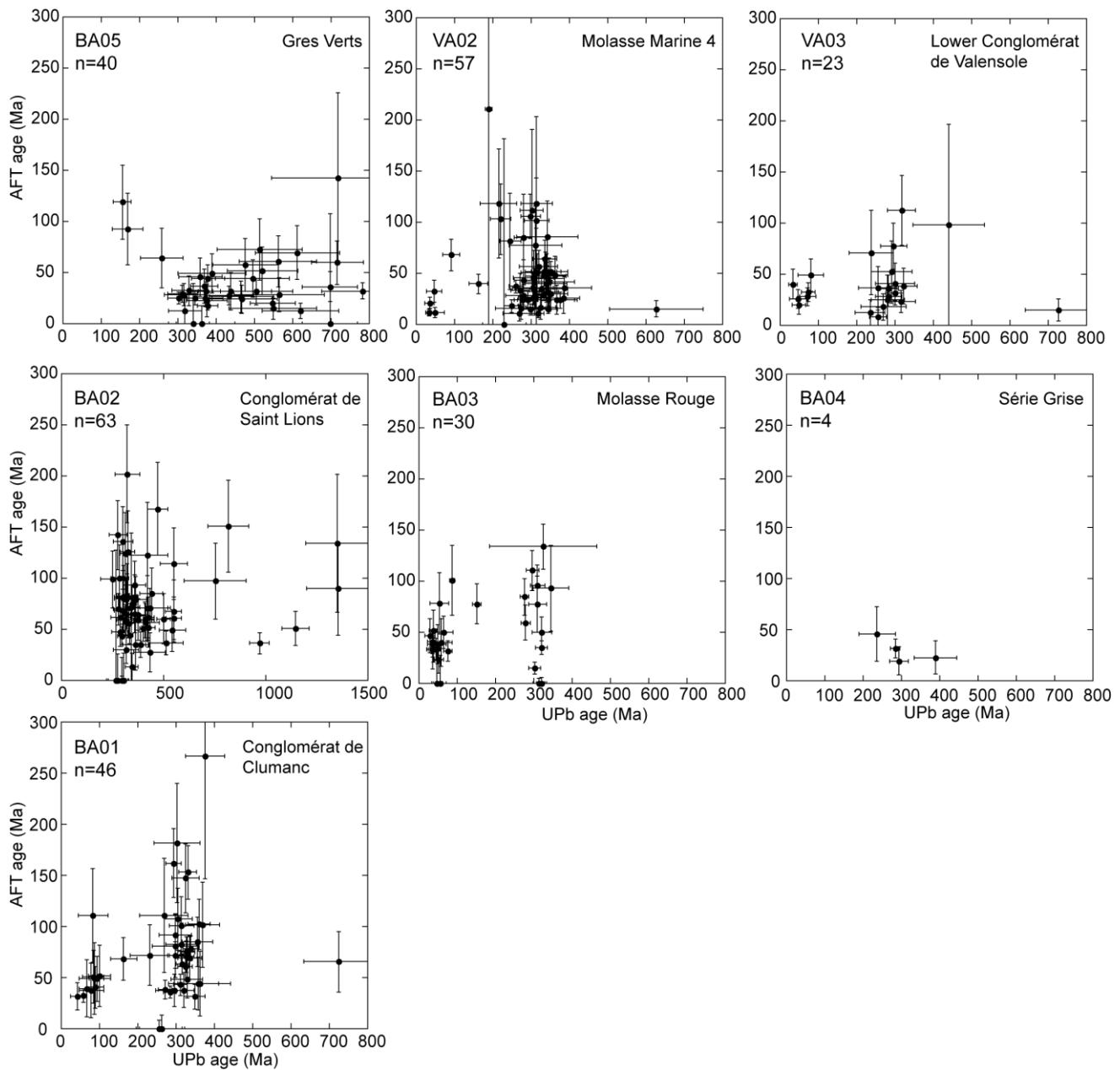


Figure DR5. Apatite U-Pb vs AFT ages for double-dated grains. Note the change of scale for BA02 (x-axis). One outlier is excluded from BA05 (U-Pb age: 1683.4 ± 352 Ma; AFT age: 0.0 ± 22.0 Ma). Double-dated grains yielding U-Pb age errors $> 25\%$ ($> 50\%$ for grains yielding ages < 100 Ma) are excluded.

Table DR2. Conglomérat de Clumanc (BA01) apatite U-Pb data. $^{206}\text{Pb}_c$ refers to the $^{206}\text{Pb}_c/^{206}\text{Pb}_{\text{total}}$ ratio, where Pb_c is non-radiogenic common Pb. ρ – error correlation of preceding isotope ratio columns. Pb correction type: 1 – array intercept Pb_c correction; 2 – iterative Pb_c correction based on the terrestrial Pb evolution model of Stacey and Kramers (1975). All errors are fully propagated and given at the 2σ level.

Grain	Spot size (μm)	U (ppm)	$^{206}\text{Pb}_c$	207/235	207/235 2σ	206/238	206/238 2σ	ρ	238/206	238/206 2σ	207/206	207/206 2σ	ρ	^{207}Pb corrected Age (Ma)	^{207}Pb corrected Age 2σ	Pb correction type
g1	47	0.30	0.986	15.09	0.64	0.142	0.009	0.894	7.052	0.423	0.777	0.025	0.296	900.5	1639.7	1
g2	36	12.91	0.850	15.15	0.47	0.147	0.007	0.861	2.358	0.350	0.688	0.044	-0.131	357.3	105.9	2
g3	47	5.57	1.002	44.20	7.00	0.424	0.063	0.945	6.807	0.334	0.764	0.027	0.355	-4.4	73.9	2
g3	36	4.46	1.139	26.80	1.10	0.281	0.016	0.475	3.559	0.203	0.714	0.022	0.305	-362.0	292.5	2
g4	47	6.00	0.985	9.32	0.58	0.082	0.006	0.809	12.255	0.886	0.867	0.066	0.642	34.2	72.1	1
g4	36	7.06	1.037	66.20	2.10	0.626	0.032	0.884	1.597	0.082	0.778	0.021	-0.152	-60.8	157.9	2
g5	36	40.90	0.399	20.56	0.80	0.184	0.010	0.712	5.450	0.294	0.806	0.027	0.357	360.0	29.8	2
g6	36	30.89	0.828	11.60	1.00	0.107	0.009	0.921	9.363	0.763	0.786	0.024	0.011	390.4	77.1	2
g7	47	13.10	0.949	15.82	0.83	0.149	0.009	0.301	6.698	0.386	0.780	0.034	0.219	50.0	29.0	1
g7	36	13.64	0.987	14.85	0.42	0.140	0.007	0.292	7.148	0.373	0.790	0.032	0.692	13.4	78.8	2
g8	36	66.00	0.259	14.08	0.44	0.129	0.007	0.810	7.758	0.397	0.806	0.025	0.532	328.9	20.2	2
g9	60	3.99	0.872	55.10	1.40	0.521	0.024	0.570	1.919	0.092	0.787	0.020	0.445	-3.0	46.8	2
g9	36	2.51	1.497	13.95	0.59	0.129	0.007	0.684	7.776	0.423	0.802	0.032	0.306	-468.5	381.5	2
g10	36	76.00	0.199	15.70	0.55	0.152	0.008	0.577	6.579	0.351	0.797	0.031	0.520	350.6	23.1	2
g11	36	42.70	0.363	0.85	0.25	0.026	0.004	0.330	37.879	5.309	0.344	0.099	0.634	378.8	46.3	2
g12	36	84.40	0.214	32.30	2.10	0.297	0.024	0.941	3.367	0.272	0.793	0.034	0.443	321.7	19.1	2
g13	36	144.50	0.138	13.28	0.55	0.156	0.008	0.563	6.398	0.311	0.622	0.025	0.282	315.9	16.8	2
g14	60	11.30	0.991	13.30	1.20	0.170	0.014	0.723	5.882	0.484	0.576	0.032	0.030	268.7	63.6	2
g14	36	4.16	0.804	26.90	1.20	0.248	0.013	0.449	4.039	0.212	0.806	0.034	0.217	401.2	159.7	2
g15	36	23.89	0.539	14.97	0.44	0.138	0.007	0.466	7.252	0.363	0.814	0.030	0.647	337.9	39.2	2
g16	36	8.30	0.617	12.66	0.52	0.116	0.007	0.719	8.606	0.496	0.826	0.034	0.376	315.3	65.2	2
g17	36	112.80	0.180	1281.00	73.00	10.800	0.770	0.883	0.093	0.007	0.856	0.022	0.040	283.5	16.3	2
g18	36	87.90	0.256	37.40	1.20	0.331	0.018	0.206	3.021	0.164	0.837	0.026	0.385	324.0	19.3	2
g19	36	13.03	0.961	41.60	4.80	0.361	0.045	0.955	2.770	0.345	0.855	0.024	0.183	38.4	63.7	2
g19	36	12.59	0.890	17.67	0.49	0.152	0.008	0.765	6.592	0.326	0.825	0.023	0.465	99.8	29.4	1
g20	36	65.20	0.331	528.00	12.00	4.230	0.210	0.826	0.236	0.012	0.890	0.015	0.338	298.8	20.3	2
g21	36	15.60	0.515	59.10	2.30	0.516	0.030	0.966	1.938	0.113	0.814	0.032	0.512	322.9	49.7	2
g22	36	42.82	0.495	24.56	0.72	0.221	0.013	0.059	4.529	0.267	0.832	0.026	0.643	360.2	30.4	1
g23	36	2.72	0.778	15.39	0.60	0.141	0.008	0.803	7.102	0.419	0.791	0.024	0.363	579.2	163.5	1
g23	36	12.33	1.039	15.60	2.30	0.125	0.010	0.379	8.006	0.641	0.844	0.059	0.078	-38.9	94.2	2
g24	47	1.10	1.028	14.55	0.36	0.154	0.007	0.816	6.498	0.312	0.676	0.016	0.405	-797.6	639.8	1
g25	60	4.18	0.939	19.10	0.69	0.173	0.010	0.604	5.784	0.335	0.803	0.034	0.517	42.6	17.6	1
g25	36	14.84	0.884	17.77	0.53	0.156	0.008	0.905	6.402	0.320	0.821	0.022	0.344	95.2	66.8	2
g26	36	105.10	0.182	14.97	0.62	0.131	0.007	0.726	7.657	0.428	0.832	0.032	0.372	310.8	18.1	2
g27	36	12.81	0.902	19.17	0.60	0.169	0.010	0.148	5.924	0.347	0.830	0.029	0.632	604.3	163.5	2
g27	36	0.71	0.784	18.68	0.73	0.163	0.009	0.939	6.143	0.336	0.826	0.021	0.099	1383.9	688.6	2
g28	60	1.80	0.974	14.10	0.68	0.129	0.008	0.091	7.746	0.462	0.789	0.031	0.010	34.6	37.1	1
g28	36	11.79	0.940	83.60	2.00	0.758	0.036	0.680	1.319	0.063	0.786	0.020	0.303	69.5	89.8	1
g29	36	17.49	0.657	21.00	1.50	0.201	0.023	-0.002	4.975	0.569	0.812	0.067	0.201	723.5	89.5	2
g30	36	40.61	0.403	11.27	0.73	0.101	0.007	0.836	9.901	0.676	0.806	0.049	0.435	143.8	15.1	2
g31	36	11.85	0.668	52.40	1.60	0.465	0.024	0.163	2.151	0.111	0.819	0.026	0.092	296.4	50.4	1
g32	36	10.08	0.823	16.02	0.77	0.144	0.008	0.916	6.964	0.364	0.838	0.039	0.336	313.3	53.0	2
g32	36	3.91	0.799	34.72	0.94	0.333	0.014	0.782	3.000	0.126	0.751	0.023	1.000	503.5	194.5	2
g33	36	80.60	0.233	12.31	0.39	0.109	0.004	0.850	9.200	0.355	0.817	0.019	0.273	296.4	19.8	2

g34	36	83.10	0.308	24.26	0.94	0.209	0.011	0.276	4.776	0.251	0.846	0.021	0.498	303.0	19.2	1
g35	36	14.91	0.982	18.66	0.87	0.163	0.008	0.106	6.154	0.307	0.846	0.045	-0.020	13.3	62.1	2
g36	36	27.96	0.483	20.10	1.00	0.167	0.007	0.256	5.977	0.232	0.829	0.021	0.016	314.4	32.2	2
g37	36	10.29	0.714	28.50	1.10	0.275	0.012	0.029	3.639	0.159	0.748	0.026	0.248	405.6	79.6	1
g38	60	3.57	0.974	103.50	5.80	0.902	0.063	0.915	1.109	0.077	0.840	0.024	0.321	26.9	58.3	1
g38	36	2.44	1.683	33.60	1.40	0.287	0.012	0.296	3.488	0.146	0.825	0.026	0.137	-623.5	516.9	2
g39	36	21.63	0.624	52.20	1.90	0.480	0.021	0.837	2.083	0.091	0.776	0.017	0.060	163.3	35.4	2
g40	36	17.17	0.547	13.35	0.33	0.118	0.004	0.103	8.467	0.287	0.810	0.023	0.027	360.2	52.0	2
g41	36	24.80	0.549	16.80	0.73	0.151	0.008	0.867	6.631	0.339	0.792	0.017	0.008	297.6	41.9	2
g42	47	2.02	0.935	16.60	0.75	0.142	0.008	0.841	7.022	0.390	0.825	0.029	0.011	212.6	131.4	1
g42	36	2.31	1.006	20.57	0.96	0.185	0.010	0.731	5.420	0.294	0.819	0.035	0.055	-20.7	369.1	2
g43	36	5.14	1.000	10.41	0.55	0.090	0.004	0.174	11.074	0.454	0.810	0.032	0.059	-0.6	42.6	1
g43	36	4.99	1.086	35.20	1.00	0.308	0.011	0.801	3.248	0.116	0.813	0.020	0.335	-58.2	120.5	2
g44	36	90.40	0.278	34.10	3.10	0.299	0.025	0.319	3.344	0.280	0.825	0.024	0.022	329.9	18.7	1
g45	47	9.19	0.957	21.96	0.84	0.220	0.009	0.042	4.541	0.177	0.718	0.028	0.003	60.6	47.1	1
g45	36	9.08	0.928	39.90	2.30	0.381	0.021	0.202	2.625	0.145	0.739	0.035	0.373	102.0	105.8	1
g46	36	12.80	0.684	51.00	4.10	0.394	0.029	-0.281	2.538	0.187	0.921	0.084	0.912	263.2	59.6	2
g47	36	7.24	0.894	29.50	4.30	0.253	0.033	0.707	3.953	0.516	0.861	0.075	0.362	413.8	108.0	2
g47	36	7.73	0.870	5.21	0.46	0.096	0.006	0.389	10.471	0.636	0.375	0.028	0.232	536.5	199.8	2
g48	36	10.86	0.925	38.40	2.00	0.363	0.019	0.323	2.755	0.144	0.723	0.026	0.237	87.6	40.5	1
g48	36	6.87	0.886	18.00	1.20	0.157	0.010	-0.048	6.361	0.405	0.826	0.061	0.608	204.6	135.0	1
g49	47	12.60	0.907	2.63	0.17	0.071	0.004	0.090	14.164	0.782	0.261	0.017	0.178	83.7	28.1	1
g49	36	12.55	0.939	17.90	2.50	0.141	0.015	0.046	7.092	0.754	1.190	0.300	0.949	56.8	67.7	2
g50	47	3.40	1.011	2.11	0.17	0.070	0.004	0.330	14.327	0.883	0.214	0.017	0.340	-9.2	60.9	2
g50	36	3.47	1.182	4.89	0.82	0.095	0.010	0.860	10.526	1.053	0.347	0.038	-0.627	-135.4	172.9	2
g51	36	26.40	0.637	2.08	0.15	0.065	0.004	-0.028	15.361	0.826	0.225	0.017	0.355	337.7	41.6	1
g52	60	14.92	1.042	1.40	0.10	0.058	0.003	0.074	17.153	0.883	0.164	0.011	0.238	49.9	29.6	1
g52	36	12.93	0.942	31.80	2.80	0.327	0.023	0.156	3.058	0.215	0.704	0.063	0.359	61.2	74.6	2
g53	36	81.90	0.271	8.13	0.54	0.117	0.007	-0.017	8.569	0.529	0.487	0.037	0.613	271.5	17.1	2
g54	36	10.74	0.655	9.90	1.10	0.131	0.011	0.149	7.634	0.641	0.549	0.059	0.157	310.0	71.4	2
g55	47	15.13	0.783	1.52	0.12	0.055	0.003	0.101	18.248	0.966	0.196	0.016	0.192	211.9	23.2	2
g55	36	9.52	0.805	2.61	0.20	0.069	0.004	0.231	14.430	0.770	0.259	0.017	0.221	257.0	92.8	2
g56	36	16.34	0.901	18.10	1.10	0.152	0.009	0.188	6.570	0.401	0.807	0.051	0.453	67.7	21.7	1
g56	36	12.92	0.929	3.26	0.21	0.071	0.004	-0.025	14.104	0.796	0.318	0.021	0.360	64.4	68.2	1
g57	36	10.43	0.894	6.95	0.85	0.106	0.008	0.248	9.443	0.722	0.467	0.053	-0.059	100.4	40.9	1
g57	36	11.75	0.861	6.31	0.42	0.105	0.006	0.053	9.524	0.526	0.422	0.029	0.251	149.6	80.7	2
g58	36	17.27	0.699	18.60	1.40	0.154	0.009	-0.055	6.506	0.398	0.864	0.074	0.586	297.8	60.2	2
g59	36	13.80	0.775	13.32	0.93	0.129	0.009	-0.190	7.770	0.537	0.750	0.064	0.611	255.7	60.5	2
g60	36	74.40	0.417	1.74	0.14	0.060	0.003	0.141	16.556	0.877	0.199	0.017	0.097	326.8	22.7	1
g61	36	12.86	0.906	103.00	14.00	1.110	0.130	0.075	0.901	0.106	0.756	0.092	0.437	84.2	36.1	1
g61	36	12.37	0.870	20.60	1.70	0.181	0.014	0.489	5.525	0.427	0.818	0.063	0.439	130.9	64.2	2
g62	36	59.30	0.379	30.00	1.50	0.346	0.019	0.335	2.890	0.159	0.604	0.032	0.160	312.4	22.3	1
g63	36	13.47	0.704	2.02	0.19	0.038	0.003	0.121	26.455	1.890	0.370	0.037	0.392	301.8	60.4	1
g64	36	141.00	0.314	9.69	0.87	0.121	0.008	0.226	8.271	0.561	0.550	0.050	0.684	57.9	5.1	1
g65	36	77.30	0.245	40.70	3.30	0.405	0.029	0.321	2.469	0.177	0.707	0.063	0.282	326.9	20.0	2
g66	47	4.53	0.922	2.10	0.14	0.061	0.004	0.197	16.313	0.985	0.239	0.019	0.168	86.6	47.2	1
g66	36	5.33	0.924	2.68	0.21	0.067	0.004	0.272	14.925	0.824	0.282	0.019	0.181	74.2	135.2	2
g67	36	6.90	0.725	13.27	0.96	0.113	0.008	0.104	8.850	0.587	0.822	0.067	0.477	216.1	110.2	2
g68	36	33.61	0.355	6.01	0.49	0.097	0.006	-0.095	10.341	0.620	0.441	0.035	0.391	296.8	24.5	2
g69	60	4.29	0.985	16.00	1.50	0.187	0.014	0.168	5.348	0.400	0.585	0.052	0.371	222.6	59.0	2
g69	36	3.60	0.887	16.80	2.60	0.135	0.018	-0.108	7.407	0.988	1.320	0.410	0.089	240.2	188.3	2
g70	36	22.64	0.475	4.98	0.48	0.068	0.005	-0.019	14.641	1.136	0.547	0.061	0.591	323.7	35.6	2
g71	47	12.17	0.944	9.00	0.80	0.127	0.009	0.077	7.874	0.546	0.495	0.047	0.307	56.3	28.8	1
g71	36	13.80	1.173	7.37	0.67	0.105	0.007	-0.116	9.551	0.611	0.493	0.046	0.160	-180.3	524.2	2

g72	36	24.91	0.746	66.60	5.70	0.567	0.046	0.190	1.764	0.143	0.839	0.079	0.515	357.8	53.2	1
g73	60	3.36	0.967	11.10	1.50	0.104	0.011	0.313	9.625	1.019	0.900	0.140	0.507	189.8	177.0	1
g74	36	13.66	0.926	2.62	0.16	0.070	0.004	0.190	14.205	0.747	0.260	0.014	0.173	61.6	26.6	1
g74	36	14.24	0.816	26.50	2.00	0.221	0.015	0.144	4.525	0.307	0.808	0.061	0.515	182.6	57.3	1
g75	36	7.98	0.758	11.24	0.87	0.132	0.009	0.015	7.576	0.528	0.600	0.055	0.489	484.0	127.3	2
g76	36	62.30	0.296	72.60	4.20	0.670	0.041	0.443	1.493	0.091	0.767	0.039	0.316	307.5	19.4	1
g77	36	45.28	0.310	29.50	1.90	0.283	0.026	0.001	3.534	0.325	0.774	0.061	0.616	327.1	25.1	2
g78	47	9.30	0.957	16.30	1.00	0.145	0.010	0.146	6.882	0.474	0.791	0.057	0.500	35.9	33.8	1
g78	36	9.49	0.897	13.20	2.00	0.114	0.014	0.097	8.772	1.077	0.970	0.180	0.443	92.5	77.5	2
g79	36	7.21	0.917	9.48	0.65	0.129	0.008	0.433	7.770	0.507	0.527	0.036	0.037	268.5	87.8	2
g79	36	8.17	0.970	18.90	1.30	0.166	0.011	0.290	6.024	0.399	0.794	0.055	0.494	337.4	172.7	1
g80	36	34.03	0.450	2.22	0.13	0.059	0.003	-0.087	16.949	0.948	0.269	0.018	0.350	305.0	30.9	2
g81	60	15.66	0.949	11.70	1.20	0.143	0.011	0.152	7.003	0.539	0.579	0.061	0.447	94.2	60.9	1
g81	36	4.11	1.040	20.80	1.50	0.208	0.013	0.102	4.805	0.300	0.696	0.056	0.528	-73.4	184.9	1
g82	36	12.60	0.921	16.90	1.50	0.142	0.012	0.529	7.052	0.597	0.809	0.061	0.097	64.4	33.2	1
g82	36	12.48	0.921	17.30	1.30	0.169	0.012	0.075	5.903	0.418	0.735	0.059	0.505	-6.4	94.6	1
g83	36	11.07	0.914	13.74	0.97	0.157	0.009	-0.085	6.357	0.380	0.614	0.047	0.512	83.2	38.1	1
g83	36	13.13	0.892	16.92	0.84	0.180	0.012	0.043	5.568	0.372	0.672	0.041	0.509	105.5	67.6	1
g84	36	67.90	0.389	4.26	0.26	0.084	0.005	0.068	11.905	0.638	0.363	0.023	0.390	330.5	22.8	2
g85	36	33.69	0.442	17.00	1.10	0.158	0.010	0.045	6.321	0.400	0.741	0.050	0.383	320.3	29.3	1
g86	36	10.17	0.816	3.69	0.28	0.076	0.004	0.183	13.158	0.744	0.335	0.024	0.176	343.4	93.3	1
g87	36	54.60	0.437	11.30	1.00	0.135	0.010	0.129	7.429	0.524	0.577	0.055	0.422	328.1	25.3	1
g88	36	61.80	0.281	0.60	0.06	0.013	0.001	0.165	75.930	4.785	0.305	0.034	0.391	306.5	21.1	2
g89	36	17.17	0.604	2.52	0.17	0.069	0.004	-0.079	14.514	0.779	0.250	0.019	0.465	278.5	44.3	1
g91	36	2.75	0.361	15.90	1.90	0.152	0.015	-0.003	6.579	0.649	0.780	0.110	0.556	105.0	25.1	1
g92	36	20.93	0.768	9.00	1.30	0.124	0.015	-0.038	8.065	0.976	0.630	0.110	0.191	319.3	64.3	2
g93	36	4.45	0.909	3.52	0.31	0.073	0.004	0.201	13.699	0.826	0.337	0.030	0.310	168.9	81.1	1
g93	36	3.61	0.903	35.90	3.40	0.336	0.027	0.219	2.976	0.239	0.761	0.071	0.439	215.5	193.2	1
g94	36	34.25	0.562	6.16	0.52	0.098	0.006	0.104	10.194	0.634	0.435	0.039	0.294	93.3	18.8	2
g95	36	13.44	0.710	20.10	6.30	0.159	0.014	-0.011	6.289	0.554	0.960	0.390	0.069	285.3	34.0	2
g95	36	9.85	0.888	15.51	0.97	0.179	0.010	0.152	5.580	0.308	0.608	0.036	0.340	151.0	83.6	2
g96	36	29.10	0.470	16.41	0.95	0.157	0.010	0.292	6.390	0.408	0.717	0.046	0.366	242.6	29.1	1
g97	47	10.72	0.955	31.60	2.40	0.322	0.020	0.130	3.106	0.193	0.672	0.051	0.408	49.0	39.9	1
g97	36	10.04	1.071	2.59	0.17	0.067	0.004	0.121	14.925	0.824	0.273	0.019	0.224	-83.6	102.2	2
g98	36	24.36	0.502	3.29	0.29	0.075	0.005	0.021	13.263	0.827	0.302	0.026	0.393	349.8	33.6	1
g99	60	5.50	0.966	14.80	1.50	0.141	0.010	0.369	7.112	0.506	0.760	0.068	0.194	299.4	70.4	2
g99	36	3.88	0.819	50.40	2.70	0.475	0.027	0.086	2.105	0.120	0.775	0.047	0.467	485.7	189.0	2
g100	60	4.48	0.930	5.10	0.41	0.088	0.005	-0.057	11.351	0.670	0.414	0.037	0.560	52.8	22.5	1
g100	36	16.43	0.836	34.60	2.90	0.283	0.023	0.126	3.534	0.287	0.900	0.082	0.444	113.4	43.1	1
g101	47	11.80	0.950	19.40	1.40	0.174	0.012	0.217	5.764	0.399	0.802	0.063	0.388	52.4	28.8	1
g101	36	11.12	0.874	17.10	1.20	0.153	0.009	0.219	6.519	0.399	0.779	0.056	0.297	139.3	80.9	2
g102	47	8.26	0.988	4.48	0.24	0.086	0.005	0.028	11.614	0.621	0.366	0.022	0.449	78.8	32.5	1
g102	36	8.14	0.941	4.53	0.38	0.086	0.005	0.164	11.696	0.711	0.382	0.034	0.221	50.4	81.0	2
g103	36	14.14	0.586	20.20	1.60	0.215	0.015	0.114	4.651	0.324	0.660	0.055	0.331	300.6	50.7	2
g104	60	5.80	0.992	4.63	0.33	0.087	0.005	0.163	11.507	0.636	0.378	0.027	0.395	88.5	22.4	1
g104	36	15.35	1.040	2.67	0.20	0.068	0.004	0.080	14.771	0.829	0.278	0.024	0.198	-30.7	73.3	2
g105	36	48.20	0.427	6.90	0.67	0.099	0.007	0.017	10.142	0.699	0.502	0.053	0.270	348.1	27.9	1
g106	47	3.42	0.899	20.90	1.10	0.219	0.013	-0.124	4.577	0.272	0.670	0.036	0.517	476.8	123.8	2
g106	36	2.90	1.006	40.60	3.60	0.351	0.027	0.185	2.849	0.219	0.788	0.071	0.437	-45.4	517.6	2
g107	36	8.05	0.647	2.19	0.29	0.033	0.003	0.015	30.030	2.255	0.494	0.065	0.422	375.8	51.9	2
g107	36	3.42	0.884	22.10	1.30	0.211	0.014	0.146	4.739	0.314	0.756	0.049	0.360	249.9	201.1	2
g108	60	2.62	1.036	3.79	0.49	0.067	0.006	0.539	14.859	1.236	0.402	0.041	0.036	46.9	33.6	1
g108	36	4.40	1.090	22.60	1.70	0.182	0.014	0.335	5.495	0.423	0.886	0.067	0.448	-94.2	148.9	2
g109	47	2.01	0.967	6.02	0.44	0.103	0.006	0.068	9.699	0.574	0.427	0.034	0.316	43.0	110.0	2

g109	36	3.14	1.127	45.20	3.50	0.433	0.031	0.202	2.309	0.165	0.722	0.057	0.275	-90.1	154.5	2
g110	60	14.70	0.941	11.45	0.80	0.108	0.007	0.271	9.225	0.613	0.733	0.050	0.402	69.4	51.8	1
g110	36	3.79	0.902	18.40	1.40	0.173	0.012	0.028	5.790	0.402	0.744	0.058	0.511	127.5	140.8	2
g111	36	22.54	0.535	14.50	1.40	0.133	0.009	0.033	7.541	0.529	0.792	0.075	0.344	305.6	36.5	2
g112	36	6.08	0.925	8.49	0.79	0.115	0.008	-0.031	8.673	0.587	0.523	0.052	0.452	117.9	67.3	1
g112	36	4.52	1.118	14.70	1.00	0.120	0.008	-0.035	8.354	0.579	0.865	0.074	0.605	-253.1	178.5	2
g113	36	56.20	0.328	4.78	0.38	0.091	0.006	0.370	10.989	0.664	0.371	0.027	0.061	283.1	21.9	2
g114	36	13.64	0.935	131.50	9.40	1.094	0.070	0.233	0.914	0.058	0.840	0.057	0.360	56.2	33.6	1
g114	36	12.07	0.929	35.30	3.10	0.340	0.032	0.120	2.941	0.277	0.759	0.075	0.589	73.7	84.2	2
g115	36	26.78	0.549	19.00	2.00	0.162	0.015	0.116	6.173	0.572	0.900	0.110	0.884	355.8	39.7	2
g116	36	19.52	0.506	11.90	1.70	0.109	0.014	0.230	9.174	1.178	0.930	0.170	0.754	327.9	41.8	2
g117	36	16.18	0.950	22.20	2.60	0.204	0.017	0.350	4.902	0.408	0.766	0.086	0.349	37.4	31.9	1
g117	36	12.01	1.074	7.56	0.51	0.104	0.006	0.062	9.588	0.579	0.482	0.039	0.360	-71.8	101.5	2
g118	36	2.72	1.103	41.80	3.20	0.326	0.021	0.197	3.067	0.198	0.912	0.063	0.393	-106.0	316.3	2
g119	36	24.53	0.432	3.04	0.28	0.067	0.004	0.417	14.970	0.964	0.315	0.024	0.266	334.8	30.9	2
g120	60	8.48	0.930	17.50	1.20	0.162	0.011	0.009	6.180	0.420	0.784	0.064	0.360	40.4	23.4	1
g120	36	19.99	0.928	8.96	0.65	0.126	0.007	0.041	7.949	0.468	0.496	0.035	0.485	34.8	37.6	2
g121	36	20.29	0.582	6.90	0.69	0.106	0.007	0.157	9.470	0.628	0.460	0.044	-0.032	368.4	44.5	2
g122	60	2.23	1.020	18.40	1.50	0.150	0.010	-0.024	6.649	0.442	0.889	0.081	0.001	129.8	51.7	1
g122	36	4.71	1.004	15.20	2.80	0.158	0.019	0.937	6.329	0.761	0.910	0.240	0.090	-9.6	221.4	2
g123	36	35.21	0.508	5.48	0.49	0.094	0.006	0.227	10.650	0.658	0.401	0.032	0.227	314.5	31.3	2
g124	60	4.05	0.949	8.40	0.55	0.075	0.005	0.083	13.280	0.917	0.781	0.061	0.545	98.3	59.5	1
g124	36	4.53	0.877	10.43	0.66	0.141	0.008	0.097	7.112	0.420	0.523	0.036	0.322	298.0	190.5	2
g125	36	30.30	0.667	47.50	3.60	0.401	0.027	0.304	2.494	0.168	0.838	0.067	0.431	313.2	39.4	2
g126	47	4.86	0.972	6.70	0.42	0.102	0.006	-0.036	9.843	0.552	0.461	0.033	0.491	48.3	39.3	1
g126	36	3.95	1.225	40.40	3.30	0.386	0.028	0.260	2.591	0.188	0.757	0.063	0.451	-182.3	189.8	2
g127	60	13.00	0.817	12.37	0.81	0.150	0.010	0.197	6.684	0.429	0.589	0.029	0.196	231.5	50.5	2
g127	36	5.93	0.845	14.60	1.80	0.124	0.012	0.075	8.065	0.780	1.000	0.180	0.937	237.8	122.8	2
g128	36	42.60	0.292	24.70	1.70	0.242	0.016	0.112	4.132	0.273	0.727	0.064	0.505	312.4	23.9	2
g129	47	4.16	0.972	2.88	0.26	0.070	0.004	-0.063	14.265	0.834	0.287	0.029	0.368	82.8	102.0	2
g129	36	3.98	1.041	58.70	4.90	0.473	0.034	0.316	2.114	0.152	0.860	0.071	0.387	-126.2	282.9	2
g130	36	57.70	0.285	2.66	0.20	0.065	0.004	0.193	15.337	0.870	0.281	0.020	0.225	293.7	19.3	2
g131	36	35.70	0.438	5.35	0.42	0.095	0.006	0.278	10.504	0.618	0.406	0.032	0.362	335.8	30.5	2
g132	36	119.20	0.144	1.51	0.13	0.063	0.003	0.105	15.898	0.859	0.169	0.015	-0.015	338.1	19.4	2
g133	36	102.80	0.222	2.06	0.14	0.064	0.004	-0.001	15.748	0.893	0.231	0.016	0.406	310.9	19.1	2
g134	36	3.49	0.763	35.80	3.40	0.387	0.027	0.028	2.584	0.180	0.681	0.070	0.582	566.6	204.3	2
g135	36	9.96	0.681	15.30	1.40	0.181	0.015	0.121	5.525	0.458	0.603	0.054	0.355	361.4	80.7	2

Table DR3. Grès de Senez (BA02) apatite U-Pb data. $^{206}\text{Pb}_c$ refers to the $^{206}\text{Pb}_c/^{206}\text{Pb}_{\text{total}}$ ratio, where Pb_c is non-radiogenic common Pb. ρ – error correlation of preceding isotope ratio columns. Pb correction type: 1 – array intercept Pb_c correction; 2 – iterative Pb_c correction based on the terrestrial Pb evolution model of Stacey and Kramers (1975). All errors are fully propagated and given at the 2σ level.

Grain	Spot size (μm)	U (ppm)	$^{206}\text{Pb}_c$	$^{207}/^{235}$	$^{207}/^{235}$	$^{206}/^{238}$	$^{206}/^{238}$	ρ	$^{238}/^{206}$	$^{238}/^{206}$	$^{207}/^{206}$	$^{207}/^{206}$	ρ	^{207}Pb corrected Age (Ma)	^{207}Pb corrected Age 2σ	Pb correction type
g2	47	107.70	0.272	2.59	0.05	0.0692	0.0031	0.22435	14.44	0.65	0.271	0.006	0.4108	317.1	14.4	2
g3	60	1.47	1.025	93.30	2.20	0.7880	0.0400	0.02173	1.27	0.06	0.848	0.024	-0.0298	-127.4	167.7	2
g4	60	27.14	0.758	17.91	0.52	0.1923	0.0058	0.21859	5.20	0.16	0.661	0.010	-0.0909	292.9	19.8	2
g5	36	33.94	0.336	2.85	0.18	0.0937	0.0035	0.07196	10.67	0.40	0.326	0.025	0.2697	388.9	22.9	2
g6	36	1.85	0.747	129.70	7.20	2.2500	0.1200	0.67652	0.44	0.02	0.636	0.030	-0.1487	0.0	604.6	2
g7	36	3.83	0.514	22.60	1.70	0.4800	0.0320	0.12321	2.08	0.14	0.525	0.041	0.2633	1351.0	156.2	2
g8	36	5.19	0.504	11.13	0.99	0.2720	0.0200	0.95325	3.68	0.27	0.483	0.043	0.0969	816.5	101.4	2
g9	47	10.23	0.650	10.99	0.38	0.1388	0.0069	0.63050	7.20	0.36	0.575	0.022	0.2587	305.5	28.5	2

g10	60	29.55	0.469	5.60	0.17	0.0951	0.0037	0.23880	10.52	0.41	0.430	0.011	0.4459	317.4	14.9	2
g11	60	20.78	0.270	10.25	0.25	0.1306	0.0048	0.27309	14.93	0.51	0.269	0.007	0.0541	302.7	17.2	2
g12	60	83.80	0.701	2.48	0.09	0.0670	0.0023	0.45794	6.72	0.30	0.614	0.016	-0.0968	308.0	11.1	2
g14	36	20.45	0.224	1.53	0.18	0.0707	0.0057	0.43545	14.14	1.14	0.234	0.027	0.1667	344.2	31.0	2
g15	47	0.30	1.033	2600.00	200.00	21.3000	1.9000	0.98316	0.05	0.00	0.863	0.017	0.3007	-7904.8	10274.5	2
g16	60	62.52	0.685	3.47	0.10	0.0713	0.0023	0.05660	6.34	0.29	0.603	0.027	-0.0071	281.4	10.3	2
g17	60	9.69	0.467	12.87	0.59	0.1487	0.0066	0.85965	11.59	0.38	0.427	0.007	0.2902	280.8	23.2	2
g18	36	7.70	0.528	5.96	0.75	0.1470	0.0085	0.09972	6.80	0.39	0.483	0.065	-0.0666	432.3	76.3	2
g19	36	4.90	0.510	21.10	1.60	0.4780	0.0230	0.03044	2.09	0.10	0.522	0.045	0.6469	1355.7	155.0	2
g20	36	23.00	0.520	18.79	0.82	0.4050	0.0110	0.16161	2.47	0.07	0.516	0.022	0.4113	1146.1	68.3	2
g21	47	1.15	1.006	213.00	11.00	1.7760	0.1100	0.80633	0.56	0.03	0.844	0.026	0.1533	-63.6	397.1	2
g22	60	3.25	0.822	13.42	0.61	0.1578	0.0073	0.61980	4.10	0.19	0.711	0.025	0.0261	313.0	36.5	2
g23	36	12.71	0.402	5.20	0.35	0.1488	0.0072	0.14643	6.72	0.33	0.386	0.027	0.5667	549.6	39.6	2
g24	47	42.17	0.450	5.72	0.14	0.1022	0.0071	0.05872	9.78	0.68	0.416	0.010	0.6305	352.6	25.5	2
g25	36	7.13	0.457	5.77	0.57	0.1620	0.0130	0.34739	6.17	0.50	0.431	0.040	0.0595	543.0	64.3	2
g26	36	20.59	0.296	2.44	0.21	0.0973	0.0043	0.05652	10.28	0.45	0.295	0.029	0.0735	427.0	28.3	2
g27	47	30.32	0.453	4.53	0.16	0.0794	0.0039	0.04711	12.59	0.62	0.415	0.015	0.0498	274.1	16.4	2
g28	36	15.13	0.421	5.37	0.41	0.1539	0.0059	0.36484	6.50	0.25	0.402	0.027	0.1261	549.8	37.2	2
g29	60	41.21	0.723	5.15	0.09	0.0863	0.0028	0.60997	5.91	0.35	0.633	0.017	-0.0465	290.0	10.8	2
g30	60	6.62	0.332	24.00	1.10	0.2437	0.0110	0.12809	7.29	0.26	0.330	0.007	0.3924	273.7	50.6	2
g31	36	14.34	0.504	6.06	0.52	0.1527	0.0089	0.32478	6.55	0.38	0.465	0.038	0.0422	471.0	51.4	2
g32	36	62.27	0.244	1.94	0.14	0.0847	0.0033	0.86860	11.81	0.46	0.252	0.016	0.3387	400.0	18.5	2
g33	60	15.40	0.481	15.10	0.88	0.1691	0.0100	0.49173	10.62	0.37	0.439	0.011	0.6814	294.8	29.2	2
g34	36	24.65	0.536	16.20	0.59	0.3501	0.0100	0.29322	2.86	0.08	0.519	0.016	0.5612	970.1	48.5	2
g35	60	30.82	0.774	6.31	0.13	0.1372	0.0049	-0.06230	4.96	0.17	0.673	0.015	0.5187	565.3	21.3	2
g36	36	12.34	0.574	9.97	0.64	0.2090	0.0110	0.08729	4.78	0.25	0.526	0.038	0.1284	550.3	65.6	2
g37	60	33.26	0.716	5.38	0.13	0.0866	0.0028	0.38707	7.50	0.26	0.624	0.031	0.2022	277.2	11.9	2
g38	36	17.76	0.439	5.73	0.34	0.1434	0.0050	-0.01385	6.97	0.24	0.414	0.027	0.4922	498.6	33.8	2
g39	36	18.08	0.364	3.62	0.32	0.1070	0.0060	0.06733	9.35	0.52	0.350	0.030	0.2916	424.2	33.7	2
g40	47	0.40	1.293	2675.00	92.00	22.8600	1.3000	0.93599	0.04	0.00	0.853	0.012	0.2333	0.0	4066.5	2
g41	60	28.73	0.894	5.77	0.16	0.0942	0.0033	-0.05407	1.50	0.08	0.780	0.010	0.1669	307.7	13.6	2
g42	60	14.02	0.830	18.78	0.40	0.2018	0.0068	0.20322	3.73	0.15	0.718	0.028	0.1321	288.0	27.3	2
g43	36	3.65	0.971	45.80	5.20	0.3550	0.0250	0.46318	2.82	0.20	0.817	0.083	0.2471	65.7	238.8	2
g44	36	20.72	0.698	28.90	1.60	0.2730	0.0150	0.76919	3.66	0.20	0.625	0.039	0.4636	510.7	84.8	2
g45	60	11.91	0.783	11.49	0.47	0.1333	0.0046	-0.07632	4.09	0.16	0.683	0.015	0.5750	239.6	33.9	2
g46	36	11.99	0.792	36.00	2.30	0.2966	0.0094	0.05802	3.37	0.11	0.694	0.042	0.3829	385.0	96.8	2
g47	36	19.74	0.751	28.50	1.50	0.2409	0.0085	0.16922	4.15	0.15	0.660	0.034	0.3116	375.4	64.9	2
g48	36	38.50	0.410	5.97	0.49	0.0855	0.0030	0.14353	11.70	0.41	0.382	0.031	0.3601	317.5	23.3	2
g49	60	10.73	0.721	72.70	3.80	0.6680	0.0350	0.97331	6.75	0.35	0.629	0.017	0.0054	439.1	67.5	2
g50	60	8.54	0.425	27.10	1.00	0.2684	0.0110	0.09211	11.51	0.36	0.395	0.007	0.6691	288.2	61.1	2
g52	60	56.30	0.649	6.33	0.44	0.0907	0.0049	0.54073	7.54	0.24	0.573	0.010	-0.0182	259.4	17.3	2
g53	60	11.37	0.402	22.91	0.57	0.2445	0.0097	0.03828	12.61	0.40	0.375	0.009	0.9996	333.7	33.5	2
g54	60	12.95	0.524	12.96	0.64	0.1482	0.0076	0.82796	9.78	0.32	0.474	0.009	0.3262	261.5	24.7	2
g55	36	9.42	0.602	14.20	1.40	0.1456	0.0087	0.49085	6.87	0.41	0.539	0.054	0.4090	363.3	64.0	2
g56	36	17.89	0.845	58.80	2.40	0.4230	0.0130	0.03357	2.36	0.07	0.738	0.031	0.5339	409.2	102.8	2
g57	36	28.18	0.697	23.40	1.30	0.1974	0.0058	0.08556	5.07	0.15	0.616	0.032	0.4518	375.0	50.2	2
g58	60	68.14	0.664	4.80	0.08	0.0869	0.0027	0.09170	6.11	0.33	0.588	0.022	-0.0679	314.1	11.0	2
g59	36	7.74	0.657	12.29	0.62	0.1588	0.0091	0.74164	6.29	0.36	0.582	0.029	0.0293	342.3	40.8	2
g59	36	3.55	0.881	36.80	5.10	0.2700	0.0340	0.82100	3.70	0.47	0.754	0.075	0.2379	203.7	162.0	2
g60	60	39.49	0.406	10.61	0.18	0.1327	0.0042	0.70494	12.61	0.60	0.378	0.018	-0.1586	293.4	14.7	2
g61	60	79.98	0.383	4.16	0.08	0.0793	0.0025	0.31358	12.13	0.37	0.361	0.008	0.0572	298.5	10.9	2
g62	36	37.62	0.527	9.44	0.57	0.1106	0.0036	-0.08997	9.04	0.29	0.477	0.031	0.4574	328.7	28.6	2
g63	60	29.96	0.635	6.74	0.14	0.1023	0.0033	0.62351	8.99	0.32	0.560	0.016	0.2687	306.4	12.6	2
g64	60	6.93	0.981	13.46	0.80	0.1638	0.0089	0.72900	0.96	0.03	0.830	0.015	0.4727	345.5	34.0	2

g65	60	28.60	0.778	4.21	0.31	0.0793	0.0038	0.21688	0.68	0.24	0.782	0.020	-0.6505	296.9	18.0	2
g66	60	57.70	1.000	4.10	0.08	0.0824	0.0025	0.05836	0.30	0.01	0.836	0.019	0.0842	319.6	11.1	2
g67	47	0.35	1.038	1760.00	110.00	14.9000	1.2000	0.53536	0.07	0.01	0.867	0.018	0.1933	-5413.4	5364.6	2
g68	47	135.60	0.339	2.92	0.05	0.0656	0.0029	0.41507	15.25	0.67	0.323	0.005	0.0848	273.6	12.3	2
g69	47	5.14	0.640	9.70	1.00	0.1184	0.0100	0.95663	8.45	0.71	0.565	0.033	-0.0929	268.9	38.1	2
g70	36	22.14	0.651	13.90	1.00	0.1367	0.0057	0.44430	7.32	0.31	0.575	0.044	0.2517	300.7	48.4	2
g71	36	5.85	0.920	102.40	6.00	0.7350	0.0280	0.49733	1.36	0.05	0.796	0.039	-0.1485	368.3	223.6	2
g72	36	16.05	0.558	9.32	0.82	0.1085	0.0048	0.16121	9.22	0.41	0.501	0.047	0.2983	301.6	41.7	2
g73	36	17.52	0.681	18.20	1.00	0.1809	0.0065	0.03423	5.53	0.20	0.603	0.038	0.5067	361.2	54.7	2
g74	36	9.05	0.714	23.80	1.60	0.2370	0.0130	-0.06999	4.22	0.23	0.633	0.053	0.5394	422.4	98.2	2
g75	60	15.71	0.738	8.79	0.24	0.1112	0.0039	0.39035	4.64	0.19	0.648	0.023	0.0739	256.6	17.1	2
g76	36	21.01	0.783	19.80	1.20	0.1828	0.0070	0.27183	5.47	0.21	0.678	0.040	0.2455	251.3	58.6	2
g77	47	21.91	0.442	5.16	0.17	0.0896	0.0044	0.54415	11.16	0.55	0.408	0.015	0.5044	314.5	18.6	2
g78	36	5.21	0.875	99.40	5.80	0.8210	0.0330	0.68838	1.22	0.05	0.777	0.038	0.2735	630.3	233.4	2
g79	60	4.02	0.646	118.70	2.10	1.0400	0.0330	0.48436	8.00	0.26	0.570	0.013	0.1128	127.3	141.9	2
g80	60	17.20	0.689	170.00	60.00	1.4700	0.5100	0.99689	6.47	0.26	0.606	0.014	0.2875	1821.3	651.9	2
g81	36	10.38	0.497	6.63	0.64	0.0958	0.0054	0.02481	10.44	0.59	0.452	0.055	0.5696	303.1	44.1	2
g82	47	23.20	0.667	13.11	0.28	0.1573	0.0073	0.56007	6.36	0.30	0.590	0.014	0.4001	328.7	23.7	2
g83	36	21.69	0.745	19.03	0.86	0.2006	0.0068	-0.04429	4.99	0.17	0.652	0.033	0.6079	321.5	53.0	2
g84	60	24.70	0.932	6.18	0.91	0.0910	0.0130	0.98246	0.50	0.03	0.835	0.035	0.1801	279.8	40.9	2
g85	47	79.50	0.277	2.66	0.07	0.0695	0.0031	0.67263	14.39	0.64	0.275	0.007	-0.0509	316.0	14.4	2
g86	36	15.03	0.655	18.69	0.98	0.2051	0.0067	0.00618	4.88	0.16	0.586	0.035	0.4594	440.9	56.6	2
g87	36	17.54	0.678	11.90	0.44	0.1491	0.0071	0.48782	6.71	0.32	0.597	0.020	0.3875	302.3	27.9	2
g88	47	9.24	0.819	22.62	0.58	0.2358	0.0120	0.36525	4.24	0.22	0.708	0.021	0.4334	270.1	42.7	2
g89	36	18.20	0.731	24.20	1.20	0.2455	0.0089	0.08504	4.07	0.15	0.646	0.034	0.5542	412.2	65.9	2
g90	60	1.04	0.737	384.00	11.00	3.3100	0.1300	0.81565	5.22	0.17	0.645	0.012	0.7408	-10.3	561.6	2
g91	47	22.67	0.698	15.75	0.30	0.1846	0.0086	0.62224	5.42	0.25	0.616	0.013	0.3497	349.3	25.8	2
g92	36	9.96	0.699	16.02	0.98	0.1700	0.0084	0.22167	5.88	0.29	0.615	0.044	0.4961	321.7	60.2	2
g93	36	1.86	1.026	85.10	4.00	0.7410	0.0440	0.44963	1.35	0.08	0.849	0.040	0.4898	-136.8	253.8	2
g93	36	1.36	0.799	117.00	10.00	1.0110	0.0680	0.48919	0.99	0.07	0.754	0.067	0.3500	1194.6	462.8	2
g94	47	2.36	0.903	50.20	1.60	0.4770	0.0290	0.15999	2.10	0.13	0.777	0.026	0.5983	292.2	101.6	2
g95	36	45.15	0.244	3.01	0.21	0.0754	0.0027	0.16552	13.26	0.47	0.250	0.018	0.2065	357.5	16.4	2
g96	36	48.98	0.384	5.22	0.37	0.0897	0.0026	0.17865	11.15	0.32	0.363	0.025	0.1535	346.5	19.9	2
g97	47	34.80	0.377	3.75	0.15	0.0754	0.0037	0.00989	13.26	0.65	0.355	0.016	-0.0433	295.9	17.2	2
g98	36	6.37	0.772	61.10	3.50	0.5440	0.0200	0.38807	1.84	0.07	0.701	0.038	0.4721	753.1	152.5	2
g99	36	33.16	0.352	4.84	0.35	0.0880	0.0032	0.11854	11.36	0.41	0.337	0.023	0.2587	357.7	20.2	2
g100	36	11.68	0.769	31.20	2.40	0.2920	0.0250	0.95155	3.42	0.29	0.677	0.041	0.0692	421.3	98.3	2
g101	36	51.90	0.382	4.49	0.32	0.0760	0.0030	0.08776	13.16	0.52	0.359	0.028	0.3147	295.9	20.2	2
g102	60	4.04	0.845	19.22	0.64	0.2154	0.0089	0.54053	3.48	0.23	0.730	0.018	0.3559	354.3	41.9	2
g103	36	21.54	0.875	70.90	2.50	0.5570	0.0110	0.16217	1.80	0.04	0.764	0.023	0.3301	433.0	102.1	2
g104	60	27.53	0.527	9.84	0.24	0.1250	0.0040	0.17883	9.57	0.33	0.476	0.015	0.2232	279.2	16.3	2
g105	36	4.48	0.930	171.60	5.50	1.5360	0.0760	0.76279	0.65	0.03	0.824	0.018	0.2751	657.1	222.8	2
g105	36	3.61	0.889	221.00	9.20	1.5940	0.0550	0.77129	0.63	0.02	0.816	0.035	0.4094	1050.8	394.2	2
g106	47	11.10	0.765	20.00	1.80	0.2150	0.0190	0.86559	4.65	0.41	0.668	0.020	-0.2915	317.4	44.5	2
g107	36	12.09	0.797	23.54	0.83	0.2510	0.0120	0.56052	3.98	0.19	0.694	0.024	0.4179	319.8	50.5	2
g107	36	8.64	0.789	33.20	2.00	0.2910	0.0130	0.35550	3.44	0.15	0.691	0.047	0.4408	384.5	106.5	2
g108	36	27.91	0.726	15.14	0.36	0.1757	0.0078	-0.05518	5.69	0.25	0.636	0.019	0.6484	302.6	30.2	2
g109	60	21.91	0.622	13.09	0.32	0.1546	0.0063	0.15240	6.30	0.33	0.556	0.015	-0.7535	302.6	21.8	2
g110	36	35.17	0.456	5.69	0.45	0.0812	0.0030	0.65709	12.32	0.45	0.418	0.033	0.0537	278.4	23.3	2
g111	60	0.31	0.348	228.00	11.00	1.9950	0.0990	0.74921	13.51	0.46	0.332	0.014	-0.1337	815.9	483.5	2
g112	47	5.80	0.866	26.40	1.50	0.2550	0.0180	0.01127	3.92	0.28	0.743	0.033	-0.0338	216.0	69.3	2
g112	36	7.64	0.787	25.90	2.30	0.2200	0.0150	0.31968	4.55	0.31	0.684	0.066	0.2537	295.6	114.6	2
g113	36	6.15	0.822	23.90	0.97	0.2474	0.0130	0.21663	4.04	0.21	0.711	0.035	0.5007	276.1	70.0	2
g113	36	7.01	0.832	30.40	2.40	0.2610	0.0200	-0.00709	3.83	0.29	0.719	0.062	0.0712	277.1	128.1	2

g114	36	26.74	0.655	14.09	0.86	0.1450	0.0054	0.68735	6.90	0.26	0.579	0.030	0.0518	314.9	36.0	2
g115	36	3.87	0.854	60.80	4.80	0.4780	0.0300	0.23397	2.09	0.13	0.747	0.070	0.4486	434.3	255.2	2
g116	36	21.33	0.775	25.70	1.10	0.2242	0.0083	0.29440	4.46	0.17	0.676	0.034	0.1621	316.9	60.9	2
g117	47	23.32	0.718	14.92	0.28	0.1709	0.0079	0.23838	5.85	0.27	0.629	0.014	0.6668	303.8	24.5	2
g118	47	116.90	0.198	1.80	0.05	0.0614	0.0027	0.36412	16.29	0.72	0.212	0.005	0.0721	309.7	13.7	2
g120	60	24.10	0.595	16.92	0.29	0.1915	0.0062	-0.02971	8.55	0.35	0.530	0.011	0.3125	317.2	22.4	2
g121	47	0.05	0.909	-11000.00	17000.00	-30.0000	99.0000	0.98126	-0.03	0.12	0.764	0.034	-0.0042	0.0	58420.2	2
g122	36	22.74	0.531	8.31	0.64	0.1097	0.0059	0.36093	9.12	0.49	0.480	0.037	0.2314	323.4	35.8	2
g123	60	6.56	0.672	27.50	1.20	0.2870	0.0190	0.13534	8.02	0.29	0.590	0.015	0.4996	280.2	46.9	2
g124	36	17.03	0.685	11.75	0.80	0.1457	0.0073	0.43053	6.86	0.34	0.602	0.041	0.2514	289.2	48.8	2
g125	47	0.39	0.944	422.00	95.00	3.4700	0.7700	0.95589	0.29	0.06	0.793	0.035	0.0964	1149.7	969.7	2
g126	36	105.20	0.207	1.88	0.12	0.0671	0.0026	-0.18958	14.90	0.58	0.220	0.016	0.3658	334.1	15.2	2
g127	60	14.39	0.632	6.93	0.22	0.1045	0.0036	0.54868	7.66	0.28	0.560	0.012	0.4839	311.1	16.5	2
g128	47	0.98	1.017	465.00	18.00	3.9800	0.2300	0.86073	0.25	0.01	0.840	0.017	0.1409	-450.2	656.9	2
g129	60	38.90	0.374	12.09	0.72	0.1588	0.0082	0.96315	14.03	0.45	0.352	0.009	0.3911	375.7	27.1	2
g130	36	21.70	0.659	13.10	1.00	0.1670	0.0110	0.51660	5.99	0.39	0.585	0.039	0.1231	356.7	55.4	2
g131	36	17.34	0.480	5.46	0.81	0.0921	0.0057	0.17804	10.86	0.67	0.438	0.054	0.0546	301.5	42.7	2
g132	36	26.37	0.612	9.29	0.59	0.1289	0.0062	0.66527	7.76	0.37	0.545	0.039	0.3395	314.2	41.8	2
g133	60	27.90	0.493	3.47	0.17	0.0740	0.0025	0.63369	11.55	0.37	0.447	0.011	0.2199	303.8	13.0	2
g134	60	34.32	0.547	8.75	0.18	0.1170	0.0048	0.27466	11.03	0.60	0.490	0.014	-0.1957	298.6	16.3	2
g135	47	15.10	0.484	5.91	0.32	0.0961	0.0051	0.48084	10.41	0.55	0.442	0.024	0.1969	311.7	24.3	2
g135	36	4.88	0.755	19.00	2.10	0.2080	0.0150	0.34072	4.81	0.35	0.660	0.076	0.3414	320.3	124.2	2
g136	36	15.68	0.604	8.07	0.72	0.1142	0.0065	0.43146	8.76	0.50	0.537	0.047	0.2763	284.9	44.8	2
g137	36	22.14	0.683	17.15	0.91	0.2065	0.0061	0.18513	4.84	0.14	0.607	0.028	0.4662	408.7	46.3	2
g138	36	14.71	0.564	6.82	0.75	0.1005	0.0075	0.79353	9.95	0.74	0.504	0.050	0.1883	276.6	44.1	2
g139	36	29.50	0.673	11.51	0.56	0.1385	0.0053	0.01713	7.22	0.28	0.592	0.035	0.4313	285.7	39.5	2
g140	60	15.46	0.512	10.10	0.26	0.1247	0.0045	0.11870	10.99	1.57	0.463	0.015	-0.3213	258.3	18.1	2

Table DR4. Molasse Rouge (BA03) apatite U-Pb data. $^{206}\text{Pb}_c$ refers to the $^{206}\text{Pb}_c/^{206}\text{Pb}_{\text{total}}$ ratio, where Pb_c is non-radiogenic common Pb. ρ – error correlation of preceding isotope ratio columns. Pb correction type: 1 – array intercept Pb_c correction; 2 – iterative Pb_c correction based on the terrestrial Pb evolution model of Stacey and Kramers (1975). All errors are fully propagated and given at the 2σ level.

Grain	Spot size (μm)	U (ppm)	$^{206}\text{Pb}_c$	207/235	207/235 2σ	206/238	206/238 2σ	ρ	238/206	238/206 2σ	207/206	207/206 2σ	ρ	^{207}Pb corrected Age (Ma)	^{207}Pb corrected Age (Ma)	Pb correction type
g1	36	16.53	0.986	10.87	0.58	0.098	0.003	0.2045	10.22	0.31	0.835	0.470	0.4068	8.7	370.1	2
g1	60	25.43	0.970	10.33	0.22	0.090	0.003	0.1110	11.06	0.37	0.822	0.019	0.1107	17.5	15.1	2
g2	60	3.72	0.670	13.53	0.46	0.169	0.006	0.2277	5.92	0.20	0.593	0.024	0.5761	349.9	33.9	1
g3	60	3.28	0.704	15.74	0.46	0.184	0.005	0.0640	5.43	0.14	0.620	0.024	0.6118	342.7	36.0	1
g4	36	17.65	0.626	9.88	0.46	0.133	0.004	0.3226	7.50	0.22	0.556	0.320	0.3465	313.7	329.2	1
g4	60	32.17	0.577	7.44	0.14	0.104	0.003	0.6488	9.58	0.31	0.515	0.009	0.2978	278.4	12.0	1
g5	60	2.32	0.617	10.50	0.49	0.143	0.005	0.1781	7.00	0.24	0.550	0.031	0.5985	343.7	36.3	1
g6	60	45.33	0.389	4.00	0.09	0.080	0.003	-0.0684	12.44	0.40	0.365	0.009	0.6969	309.0	11.4	1
g6	36	28.70	0.400	4.26	0.26	0.086	0.002	0.3871	11.61	0.26	0.375	0.210	0.1599	324.5	139.3	1
g7	60	1.17	0.727	16.92	0.80	0.197	0.007	0.3626	5.09	0.17	0.638	0.035	0.1701	337.5	54.7	1
g8	60	7.88	0.984	22.81	0.67	0.207	0.010	-0.0155	4.84	0.23	0.824	0.023	0.6696	21.9	41.1	1
g8	36	5.70	1.070	21.80	1.30	0.185	0.008	0.2880	5.41	0.22	0.902	0.510	0.5321	-83.8	766.2	2
g9	36	5.32	0.944	11.06	0.80	0.106	0.005	0.1857	9.45	0.46	0.801	0.460	0.5934	38.3	390.7	2
g10	36	5.44	0.988	13.39	0.90	0.120	0.005	0.0953	8.31	0.32	0.836	0.480	0.5911	9.7	464.9	2
g10	60	8.21	0.940	11.90	0.36	0.108	0.004	0.3989	9.28	0.37	0.798	0.027	0.5562	41.6	24.4	2
g11	60	8.08	0.961	13.03	0.54	0.116	0.005	-0.0217	8.60	0.37	0.807	0.040	0.0355	28.8	38.6	1
g11	36	5.13	1.009	12.77	0.86	0.120	0.005	0.2026	8.34	0.35	0.853	0.490	0.4831	-6.8	473.9	2
g12	47	27.67	0.772	3.96	0.14	0.045	0.002	0.0895	22.12	1.17	0.638	0.029	-0.0712	75.5	11.4	2

g12	36	16.31	0.763	4.62	0.32	0.053	0.002	0.1922	18.73	0.84	0.657	0.370	0.3862	81.0	157.9	2
g13	36	10.51	1.001	15.14	0.74	0.134	0.004	0.1203	7.47	0.23	0.847	0.480	0.4749	-1.1	517.7	2
g13	60	18.38	0.970	14.45	0.27	0.129	0.004	0.4217	7.75	0.26	0.822	0.016	0.5730	24.9	18.7	2
g14	47	35.27	0.515	6.23	0.15	0.097	0.005	0.7590	10.30	0.48	0.466	0.011	0.0537	296.5	16.2	1
g14	36	24.35	0.502	6.09	0.30	0.099	0.003	0.1262	10.08	0.26	0.456	0.260	0.4593	310.9	199.1	1
g15	36	5.34	1.031	41.50	2.10	0.371	0.017	0.1418	2.70	0.12	0.871	0.500	0.3736	-75.1	1507.4	2
g15	60	9.99	0.970	42.30	1.40	0.372	0.017	0.7721	2.69	0.12	0.822	0.017	0.2204	71.6	56.3	2
g16	36	15.98	0.988	10.57	0.43	0.097	0.003	0.2107	10.29	0.26	0.836	0.470	0.3702	7.8	367.9	2
g16	60	25.50	0.939	10.47	0.20	0.094	0.003	0.3169	10.63	0.34	0.797	0.016	0.5441	37.1	13.5	2
g17	36	5.23	1.032	13.00	1.00	0.114	0.005	0.0079	8.80	0.42	0.872	0.500	0.4399	-23.8	459.0	2
g17	47	7.65	0.891	13.39	0.47	0.126	0.007	0.4371	7.92	0.42	0.759	0.032	0.5828	88.1	33.5	2
g18	36	5.91	1.097	12.19	0.84	0.104	0.005	-0.0347	9.64	0.47	0.908	0.520	0.6323	-65.3	445.8	1
g18	47	7.87	0.935	12.89	0.54	0.115	0.007	0.6805	8.69	0.53	0.794	0.037	0.3755	48.1	35.0	2
g19	60	11.94	0.966	9.10	0.64	0.078	0.004	0.2256	12.82	0.66	0.819	0.035	0.1762	16.9	22.6	2
g19	36	8.21	0.944	9.60	1.10	0.089	0.010	0.8615	11.27	1.26	0.801	0.460	0.3024	32.1	327.8	2
g20	60	0.71	0.936	25.20	1.30	0.239	0.013	0.3803	4.18	0.23	0.795	0.051	0.5710	97.7	98.5	2
g21	60	0.58	1.009	71.60	2.80	0.611	0.022	0.3439	1.64	0.06	0.853	0.039	0.5431	-34.6	197.3	2
g21	47	3.61	0.952	49.10	1.50	0.436	0.022	0.4812	2.29	0.12	0.808	0.026	0.4110	132.5	94.6	2
g22	60	26.14	0.966	14.23	0.50	0.125	0.005	0.7749	7.98	0.30	0.819	0.017	0.3613	27.2	19.0	2
g23	60	19.40	0.656	11.81	0.28	0.148	0.003	0.8207	6.77	0.14	0.580	0.008	-0.0611	319.8	12.7	1
g24	36	7.39	0.956	10.82	0.80	0.100	0.004	0.0515	10.05	0.42	0.811	0.460	0.5320	28.0	367.8	2
g25	36	13.98	1.001	16.23	0.76	0.143	0.004	0.4848	6.99	0.21	0.847	0.480	0.4373	-1.2	553.3	2
g25	36	24.59	0.936	12.41	0.32	0.114	0.006	0.2209	8.76	0.42	0.795	0.029	0.6924	45.9	27.6	2
g26	36	5.88	1.081	13.60	0.95	0.118	0.006	0.0762	8.49	0.41	0.911	0.520	-0.0136	-61.9	497.1	2
g26	60	7.90	0.942	13.19	0.34	0.120	0.005	0.5108	8.31	0.31	0.800	0.027	0.2528	44.5	27.2	2
g27	60	18.12	0.946	12.95	0.35	0.117	0.003	0.6650	8.55	0.21	0.803	0.016	0.4232	40.4	16.8	2
g28	60	28.40	0.941	10.83	0.34	0.096	0.005	0.1748	10.47	0.50	0.799	0.017	0.1096	36.1	14.5	2
g28	36	20.77	0.937	9.55	0.48	0.092	0.003	0.4067	10.92	0.39	0.796	0.450	0.3844	36.8	330.9	2
g29	36	10.02	1.023	9.45	0.62	0.081	0.004	0.3506	12.36	0.53	0.864	0.490	0.2394	-11.8	319.9	2
g29	47	11.39	0.899	9.38	0.54	0.089	0.007	0.0121	11.25	0.86	0.765	0.039	0.0283	57.8	28.6	2
g30	60	6.70	0.956	13.18	0.31	0.119	0.003	0.1256	8.44	0.21	0.811	0.024	0.6721	33.4	24.1	2
g30	47	9.08	0.931	11.65	0.46	0.107	0.006	0.7655	9.38	0.52	0.791	0.032	0.3800	47.1	28.3	2
g31	60	24.62	0.658	11.78	0.19	0.147	0.002	0.4550	6.82	0.08	0.582	0.010	0.2474	315.8	13.1	1
g32	60	26.87	0.974	10.14	0.61	0.089	0.003	-0.0278	11.26	0.41	0.816	0.049	0.1118	14.9	35.9	1
g32	36	22.15	1.005	9.61	0.44	0.085	0.002	0.0945	11.79	0.33	0.850	0.480	0.5290	-2.7	328.2	2
g33	36	7.23	1.022	12.00	0.92	0.103	0.005	-0.0701	9.75	0.49	0.852	0.490	0.5550	-14.5	411.6	1
g33	47	8.97	0.941	11.42	0.42	0.102	0.006	0.5039	9.78	0.54	0.799	0.032	0.1941	38.7	27.2	2
g34	36	24.03	0.962	11.36	0.50	0.105	0.003	-0.0334	9.55	0.25	0.807	0.460	0.5231	25.8	391.4	1
g34	60	27.24	0.976	11.48	0.20	0.100	0.003	0.3528	9.97	0.34	0.827	0.016	0.6356	15.3	14.5	2
g35	36	7.70	1.049	12.64	0.91	0.108	0.005	0.1742	9.25	0.41	0.885	0.510	0.1480	-34.0	446.0	2
g35	60	10.51	0.974	10.36	0.50	0.092	0.005	0.6904	10.86	0.60	0.825	0.039	1.0000	15.6	29.5	2
g36	36	33.50	0.558	3.44	0.19	0.051	0.002	-0.0116	19.61	0.65	0.493	0.280	0.5148	143.7	113.6	1
g36	47	48.00	0.439	2.18	0.12	0.041	0.003	0.2202	24.45	1.49	0.384	0.018	0.0916	151.1	10.9	2
g37	60	24.12	0.545	7.55	0.20	0.112	0.002	0.2985	8.94	0.17	0.491	0.010	0.2032	320.2	11.2	1
g38	47	49.30	0.365	3.68	0.15	0.076	0.004	0.4398	13.18	0.62	0.346	0.011	-0.0788	303.2	15.7	1
g38	36	39.30	0.450	5.74	0.23	0.102	0.002	0.0599	9.78	0.18	0.416	0.240	0.5380	353.0	188.0	1
g39	36	17.27	0.994	20.44	0.89	0.181	0.004	0.0379	5.53	0.13	0.841	0.480	0.3217	7.3	699.3	2
g39	60	17.32	0.974	19.00	0.35	0.164	0.007	0.2350	6.11	0.27	0.825	0.018	0.0847	27.6	26.0	2
g40	60	14.29	0.964	14.38	0.25	0.129	0.003	0.3598	7.76	0.16	0.817	0.017	0.6562	30.1	19.5	2
g41	60	28.10	0.854	3.39	0.17	0.034	0.001	0.6998	29.50	1.13	0.729	0.025	0.0822	31.9	7.2	2
g41	60	25.99	0.872	4.10	0.15	0.040	0.002	0.3573	25.18	0.95	0.744	0.024	0.0620	32.6	8.1	2
g42	60	7.26	0.967	12.60	0.30	0.112	0.003	0.1655	8.93	0.22	0.820	0.026	0.6666	23.4	24.5	2
g43	36	9.00	0.983	12.34	0.70	0.110	0.005	0.0707	9.13	0.39	0.832	0.470	0.5596	12.3	414.3	2
g43	47	8.80	0.927	11.45	0.52	0.106	0.006	0.1965	9.40	0.49	0.788	0.040	0.0879	49.6	34.9	2

g44	60	20.06	0.937	12.70	0.20	0.115	0.002	0.3817	8.70	0.16	0.796	0.015	0.5635	46.2	15.7	2
g45	60	6.38	0.976	14.16	0.36	0.127	0.003	-0.0151	7.86	0.20	0.818	0.026	0.7653	19.6	28.2	1
g46	36	6.13	1.014	16.91	0.98	0.147	0.006	0.1043	6.79	0.29	0.857	0.490	0.5945	-13.1	582.6	2
g46	47	5.78	0.932	17.81	0.90	0.161	0.009	0.2861	6.23	0.35	0.792	0.032	0.0303	69.6	42.5	2
g47	60	10.81	0.989	45.64	0.79	0.395	0.007	0.7181	2.53	0.04	0.837	0.011	0.1435	28.6	43.9	2
g48	36	4.92	0.996	18.50	1.10	0.165	0.009	0.0910	6.07	0.32	0.843	0.480	0.6199	4.0	637.3	2
g48	47	5.98	0.937	15.90	0.92	0.149	0.008	0.1503	6.72	0.36	0.796	0.043	-0.0135	59.7	52.2	2
g49	60	1.48	1.009	34.70	1.30	0.300	0.012	0.5254	3.33	0.13	0.853	0.037	0.5235	-17.0	92.0	2
g50	36	8.66	0.935	14.55	0.74	0.139	0.005	-0.0453	7.22	0.24	0.788	0.450	0.4999	57.6	503.8	1
g50	47	8.49	0.917	14.01	0.50	0.129	0.007	0.1053	7.76	0.40	0.780	0.031	0.2026	68.3	33.1	2
g51	36	99.30	0.324	2.95	0.10	0.073	0.003	0.7504	13.66	0.62	0.299	0.010	-0.1782	319.3	15.3	1
g51	36	105.30	0.303	3.14	0.21	0.078	0.002	0.7269	12.84	0.33	0.297	0.170	-0.4851	341.0	101.9	1
g52	36	9.31	0.991	12.17	0.61	0.107	0.007	0.0211	9.32	0.58	0.839	0.048	0.0158	6.0	42.1	2
g52	36	8.55	0.942	11.92	0.70	0.112	0.004	0.0288	8.90	0.33	0.800	0.460	0.6122	41.5	414.5	2
g53	36	8.64	1.080	12.88	0.91	0.105	0.004	0.1634	9.52	0.39	0.910	0.520	0.4428	-54.3	442.7	2
g54	47	9.36	0.911	10.34	0.45	0.094	0.006	0.6813	10.64	0.65	0.775	0.030	0.3927	53.6	23.6	2
g54	36	8.69	0.837	11.52	0.81	0.118	0.005	0.1768	8.51	0.38	0.716	0.410	0.4206	122.3	383.4	2
g55	60	24.59	0.964	12.10	0.20	0.107	0.002	0.2933	9.33	0.16	0.817	0.016	0.5566	25.0	15.5	2
g55	47	24.40	0.935	13.06	0.37	0.118	0.006	0.3775	8.51	0.43	0.794	0.023	-0.1318	49.1	23.0	2
g56	60	23.20	0.510	6.68	0.24	0.102	0.003	0.8543	9.81	0.27	0.463	0.015	-0.5751	313.8	14.9	1
g57	36	10.48	0.988	9.93	0.60	0.090	0.004	0.0480	11.15	0.55	0.836	0.480	0.6474	7.2	346.8	2
g57	60	8.99	0.988	11.63	0.35	0.103	0.004	0.4260	9.75	0.36	0.827	0.028	0.3662	7.6	24.4	1
g58	36	48.90	0.356	3.06	0.23	0.068	0.002	0.5506	14.81	0.40	0.337	0.190	-0.0884	274.4	99.8	1
g58	60	49.68	0.334	2.93	0.12	0.066	0.002	0.0275	15.22	0.53	0.320	0.011	0.0289	275.9	11.2	1
g59	36	9.64	0.886	10.56	0.73	0.103	0.004	0.0316	9.75	0.34	0.755	0.430	0.4123	74.9	352.8	2
g60	36	6.46	1.001	13.20	0.95	0.118	0.006	0.2104	8.48	0.42	0.847	0.480	0.4722	-1.0	456.2	2
g61	36	7.79	1.000	11.62	0.82	0.106	0.006	0.2132	9.40	0.53	0.846	0.480	0.5758	0.0	411.6	2
g61	60	18.97	0.882	5.13	0.15	0.049	0.002	0.4635	20.45	0.88	0.752	0.026	0.5187	37.0	10.7	2
g62	60	8.55	0.969	12.15	0.60	0.110	0.007	0.0526	9.10	0.54	0.821	0.026	0.4821	22.1	24.1	2
g63	36	5.69	0.998	16.60	1.20	0.143	0.007	0.2379	6.99	0.36	0.844	0.480	0.4822	2.3	553.5	2
g63	60	7.16	0.941	14.59	0.42	0.133	0.005	0.2393	7.54	0.29	0.799	0.025	0.6336	50.1	28.0	2
g64	36	8.30	0.957	12.43	0.77	0.117	0.005	-0.0717	8.55	0.40	0.804	0.460	0.6312	32.0	436.5	1
g64	36	10.58	0.906	11.06	0.55	0.105	0.007	0.6523	9.51	0.59	0.771	0.041	0.5456	63.3	35.3	2
g65	60	9.15	0.954	11.14	0.30	0.102	0.004	-0.0179	9.81	0.40	0.801	0.031	0.7357	30.3	26.5	1
g65	36	9.78	0.990	11.27	0.80	0.102	0.004	0.0165	9.78	0.42	0.838	0.480	0.0534	6.6	395.1	2
g66	60	6.70	0.551	8.45	0.28	0.124	0.003	0.4996	8.06	0.17	0.497	0.016	0.1757	349.6	17.4	1
g68	60	30.27	0.874	4.48	0.27	0.045	0.004	0.0197	22.27	1.88	0.745	0.045	0.0666	36.5	16.7	2
g68	36	10.71	0.931	11.99	0.79	0.114	0.005	0.2792	8.78	0.39	0.791	0.450	0.4752	50.3	410.9	2
g69	60	30.81	0.528	7.08	0.14	0.107	0.002	0.6999	9.34	0.13	0.477	0.011	0.1014	318.1	10.7	1
g70	36	8.47	0.935	12.69	0.83	0.115	0.005	0.1088	8.68	0.35	0.794	0.450	0.5681	48.1	415.7	2
g71	60	27.77	0.944	9.35	0.14	0.084	0.001	0.1199	11.86	0.18	0.801	0.015	0.8121	30.5	11.5	2
g72	36	9.11	0.950	12.04	0.67	0.111	0.005	-0.1107	9.03	0.37	0.798	0.460	0.6401	35.9	413.0	1
g72	47	7.57	0.892	13.89	0.68	0.133	0.009	0.8509	7.51	0.50	0.760	0.033	0.1328	91.8	36.5	2
g73	36	7.38	0.973	10.18	0.64	0.089	0.006	0.9093	11.17	0.77	0.824	0.053	0.5428	15.1	38.6	2
g73	60	8.09	0.912	7.53	0.24	0.072	0.003	0.2065	13.85	0.54	0.776	0.034	0.6935	40.6	20.3	2
g74	60	19.79	0.994	36.56	0.43	0.314	0.004	0.5023	3.18	0.04	0.841	0.010	0.3410	11.9	32.3	2
g74	47	23.09	0.960	32.78	0.60	0.290	0.013	0.3131	3.45	0.15	0.814	0.015	0.4824	74.5	39.7	2
g75	60	7.80	0.990	13.33	0.40	0.117	0.005	-0.0136	8.58	0.33	0.828	0.036	0.2177	7.7	35.1	1
g75	36	8.28	0.962	13.32	0.88	0.121	0.005	0.0250	8.25	0.35	0.816	0.470	0.6135	29.2	457.7	2
g76	36	20.08	0.665	12.77	0.60	0.156	0.004	0.2724	6.39	0.18	0.588	0.330	0.4135	329.3	396.8	1
g77	60	16.37	0.954	12.52	0.45	0.112	0.004	0.4629	8.95	0.29	0.809	0.018	0.1978	33.2	17.7	2
g78	36	10.83	1.020	10.30	1.10	0.085	0.005	0.6110	11.82	0.75	0.862	0.490	0.2129	-10.9	334.5	2
g79	60	11.58	0.917	9.63	0.33	0.090	0.003	0.8506	11.14	0.42	0.780	0.018	0.2643	47.6	14.2	2
g80	36	25.77	0.916	10.62	0.48	0.097	0.003	0.2028	10.28	0.27	0.779	0.440	0.4475	52.4	343.1	2

g81	36	8.77	0.946	12.84	0.81	0.107	0.005	0.2247	9.37	0.45	0.803	0.460	0.4256	36.9	394.0	2
g81	60	7.77	0.947	12.67	0.64	0.114	0.006	0.0120	8.79	0.49	0.804	0.035	-0.0155	38.4	32.9	2
g82	60	29.30	0.861	6.80	1.10	0.062	0.009	0.9485	16.23	2.45	0.735	0.030	-0.4733	54.9	17.3	2
g83	36	7.20	0.970	14.40	1.20	0.127	0.007	0.6285	7.91	0.44	0.822	0.470	0.3032	24.4	478.0	2
g83	60	51.80	0.573	2.20	0.13	0.032	0.002	0.7838	31.75	1.51	0.505	0.018	-0.2859	86.2	6.2	2
g84	36	7.74	0.927	15.30	1.20	0.134	0.007	0.4220	7.47	0.41	0.788	0.450	0.3415	62.3	482.1	2
g85	36	7.28	0.990	12.99	0.69	0.115	0.007	0.4386	8.65	0.54	0.838	0.049	0.5661	7.4	46.2	2
g85	60	6.72	0.955	13.63	0.37	0.122	0.003	0.4807	8.22	0.23	0.810	0.025	0.4494	35.2	25.7	2
g86	60	21.41	0.931	10.29	0.19	0.094	0.002	0.2496	10.60	0.17	0.791	0.016	0.4505	41.7	13.5	2
g86	47	27.40	0.894	9.70	0.19	0.091	0.004	0.5623	10.96	0.53	0.761	0.019	0.4232	62.3	15.2	2
g87	60	9.47	0.980	11.30	0.37	0.100	0.004	0.0360	10.00	0.40	0.830	0.034	0.3076	12.9	28.2	2
g87	36	7.58	0.955	11.70	1.00	0.109	0.007	0.2277	9.18	0.55	0.810	0.460	0.4405	31.5	402.4	2
g88	36	7.73	0.969	12.65	0.88	0.114	0.005	0.1629	8.80	0.42	0.821	0.470	0.4709	22.8	429.3	2
g88	47	9.52	0.929	12.79	0.41	0.117	0.006	0.6883	8.52	0.45	0.789	0.029	0.5778	53.8	28.4	2
g89	36	28.99	0.633	10.70	0.51	0.138	0.005	0.4554	7.24	0.24	0.562	0.320	0.4632	318.4	340.5	1
g90	60	16.31	0.951	14.98	0.41	0.135	0.005	0.6063	7.43	0.29	0.807	0.019	0.4261	42.2	22.3	2
g90	60	13.26	0.950	16.85	0.46	0.150	0.003	0.7991	6.68	0.14	0.806	0.015	-0.0389	48.1	20.4	2
g91	60	18.60	0.956	13.08	0.22	0.117	0.002	0.3931	8.58	0.18	0.811	0.017	0.6627	32.8	17.6	2
g91	60	17.78	0.956	14.83	0.32	0.134	0.005	0.2770	7.46	0.27	0.811	0.017	0.2102	37.7	20.3	2
g92	60	4.09	0.970	21.23	0.63	0.184	0.004	0.3142	5.42	0.13	0.822	0.026	0.5030	35.6	40.4	2
g92	47	4.64	0.919	19.25	0.66	0.179	0.010	0.7195	5.58	0.31	0.781	0.030	0.5270	93.4	44.6	2
g93	60	20.96	0.969	25.22	0.37	0.222	0.004	0.6940	4.50	0.08	0.821	0.009	0.3980	44.6	22.1	2
g93	47	23.45	0.942	24.08	0.35	0.216	0.010	0.6472	4.63	0.21	0.800	0.015	0.3803	79.7	29.6	2
g94	60	24.80	0.475	7.17	0.55	0.114	0.005	0.8481	8.78	0.35	0.437	0.018	-0.5953	374.6	21.9	1
g95	60	9.04	0.978	11.62	0.35	0.100	0.004	0.4728	9.99	0.42	0.828	0.032	0.1193	14.5	26.6	2
g95	36	9.27	0.949	12.67	0.98	0.115	0.005	0.0576	8.73	0.39	0.805	0.460	0.3912	37.7	422.8	2
g96	60	17.54	0.962	14.88	0.28	0.132	0.002	0.4765	7.56	0.14	0.816	0.015	0.4561	31.9	18.1	2
g97	36	5.23	0.898	16.80	1.20	0.162	0.008	0.1823	6.18	0.29	0.765	0.440	0.5400	104.9	567.2	2
g98	36	15.75	0.981	16.55	0.77	0.139	0.005	0.1192	7.19	0.24	0.831	0.470	0.4752	16.8	526.0	2
g98	60	21.92	0.975	11.34	0.53	0.104	0.006	0.2243	9.65	0.58	0.826	0.018	0.4371	16.7	16.5	2
g99	60	29.27	1.000	24.99	0.87	0.214	0.009	0.9021	4.68	0.20	0.846	0.010	0.2369	0.0	22.5	2
g99	60	26.49	0.974	29.24	0.50	0.253	0.005	0.7833	3.95	0.07	0.825	0.009	0.1870	42.6	24.2	2
g100	60	6.53	0.970	23.79	0.88	0.211	0.009	0.0116	4.74	0.21	0.822	0.022	0.0943	40.7	39.8	2
g100	36	6.76	0.960	25.50	1.60	0.225	0.011	0.3541	4.44	0.22	0.814	0.460	0.4193	57.8	829.1	2
g101	60	4.54	0.981	21.91	0.66	0.191	0.008	0.3051	5.25	0.21	0.831	0.030	0.5265	23.0	47.7	2
g101	36	3.59	0.861	19.30	1.60	0.193	0.011	0.1508	5.18	0.30	0.736	0.420	0.4641	170.6	641.3	1
g102	36	14.77	0.991	17.20	0.70	0.148	0.005	0.0420	6.75	0.21	0.839	0.480	0.5949	8.3	572.4	2
g102	60	27.19	0.955	10.89	0.15	0.098	0.003	0.4054	10.22	0.32	0.810	0.015	0.5540	28.3	13.4	2
g103	36	12.57	0.935	18.59	0.94	0.169	0.006	0.2407	5.91	0.20	0.794	0.450	0.5481	70.6	609.1	2
g104	60	108.70	0.215	2.02	0.07	0.065	0.001	0.6641	15.48	0.22	0.225	0.007	-0.3584	319.0	5.6	1
g105	36	10.28	0.920	9.25	0.73	0.084	0.005	0.4819	11.95	0.71	0.782	0.450	0.3111	43.1	302.2	2
g105	60	8.98	0.919	10.47	0.34	0.094	0.004	0.3098	10.60	0.47	0.781	0.027	0.6185	49.3	21.4	2
g106	60	26.77	0.921	9.29	0.15	0.087	0.003	0.3015	11.55	0.39	0.783	0.015	0.4448	43.9	11.8	2
g106	36	27.47	0.921	10.10	0.42	0.092	0.003	0.0918	10.92	0.33	0.783	0.440	0.5817	46.4	323.2	2
g107	47	9.69	0.930	11.37	0.85	0.104	0.009	0.9391	9.64	0.82	0.790	0.032	0.2145	46.7	27.7	2
g107	36	5.20	0.881	13.80	1.20	0.129	0.007	0.3265	7.77	0.40	0.751	0.430	0.4433	98.0	441.5	2
g108	60	8.53	0.982	12.22	0.36	0.111	0.005	-0.0082	9.00	0.38	0.822	0.031	0.5978	13.1	29.0	1
g108	36	7.99	0.941	12.48	0.89	0.110	0.005	0.1428	9.07	0.41	0.799	0.460	0.5171	41.7	407.1	2
g109	36	22.30	0.606	8.02	0.31	0.115	0.006	0.3605	8.67	0.41	0.513	0.021	0.4149	309.9	24.1	1
g109	36	17.51	0.555	9.11	0.48	0.129	0.004	0.1805	7.75	0.22	0.501	0.280	0.3939	360.2	276.5	1
g110	36	24.98	0.882	9.64	0.39	0.090	0.003	0.3810	11.11	0.33	0.752	0.430	0.4528	67.9	309.7	2
g111	36	22.47	0.951	13.48	0.57	0.120	0.003	0.2509	8.36	0.22	0.807	0.460	0.4337	37.5	441.7	2
g112	36	28.64	0.488	5.88	0.19	0.096	0.005	0.2849	10.42	0.49	0.445	0.016	0.4174	309.1	18.8	1
g112	36	23.24	0.498	6.77	0.36	0.105	0.003	0.1929	9.49	0.28	0.454	0.260	0.3236	332.2	210.7	1

g113	60	54.20	0.686	2.10	0.27	0.026	0.002	0.7723	38.61	2.83	0.595	0.052	0.0547	52.2	11.5	2
g113	36	18.88	0.810	4.80	0.45	0.048	0.003	0.7339	20.79	1.34	0.694	0.400	0.1801	58.7	154.2	2
g114	60	30.84	0.719	1.64	0.07	0.019	0.001	0.5835	52.00	1.51	0.621	0.025	0.2897	34.8	4.1	2
g115	60	188.00	0.084	0.93	0.06	0.054	0.001	0.8768	18.61	0.35	0.120	0.006	-0.7753	309.8	6.1	1
g116	36	5.79	0.598	10.02	0.85	0.136	0.009	0.7652	7.33	0.48	0.535	0.038	0.1676	344.6	45.7	1
g116	36	5.82	0.528	8.78	0.78	0.136	0.006	0.1701	7.36	0.34	0.481	0.280	0.4541	401.1	289.3	1
g117	60	27.39	0.937	9.31	0.25	0.086	0.003	0.2874	11.57	0.40	0.788	0.017	0.0287	35.0	13.2	1
g117	36	25.02	0.895	10.85	0.52	0.101	0.002	-0.0696	9.89	0.23	0.757	0.430	0.5226	67.9	350.5	1
g118	60	18.41	0.705	15.22	0.25	0.177	0.003	0.4960	5.65	0.08	0.620	0.010	0.3836	328.5	16.6	1
g119	60	28.49	0.959	7.16	0.42	0.064	0.003	0.1108	15.63	0.61	0.813	0.042	0.0456	17.0	22.0	2
g119	36	24.73	0.887	8.69	0.49	0.081	0.002	0.5212	12.41	0.37	0.756	0.430	0.2992	58.3	277.6	2
g120	36	24.90	0.647	11.54	0.32	0.145	0.007	0.3141	6.92	0.32	0.573	0.018	0.4824	320.8	25.6	1
g120	36	20.04	0.596	11.68	0.45	0.152	0.004	0.1814	6.58	0.17	0.535	0.300	0.3100	384.6	347.2	1
g121	60	5.57	0.983	17.73	0.47	0.158	0.007	0.3008	6.35	0.28	0.832	0.029	0.6215	17.7	38.2	2
g121	36	7.68	0.867	12.12	0.74	0.116	0.005	0.2211	8.59	0.39	0.740	0.420	0.5075	98.9	390.0	2
g122	60	19.63	0.964	12.63	0.20	0.115	0.004	0.3268	8.70	0.31	0.817	0.019	0.6803	26.8	19.1	2
g122	36	21.59	0.906	12.23	0.46	0.111	0.003	0.1996	9.03	0.26	0.771	0.440	0.4788	66.7	390.2	2
g123	60	21.63	0.965	12.87	0.33	0.113	0.002	0.5918	8.82	0.18	0.818	0.015	0.3192	25.5	15.6	2
g123	36	26.86	0.944	9.86	0.34	0.089	0.004	0.2444	11.21	0.52	0.801	0.031	-0.0643	32.2	23.0	2
g124	36	23.27	0.940	11.45	0.48	0.103	0.003	0.3693	9.70	0.25	0.798	0.450	0.3574	39.8	372.4	2
g125	36	6.09	1.004	15.60	0.92	0.128	0.006	0.0777	7.82	0.36	0.849	0.480	0.5252	-3.1	494.6	2
g125	60	7.49	0.986	12.87	0.43	0.114	0.005	0.1141	8.79	0.36	0.835	0.033	-0.0456	10.1	31.2	2
g126	47	18.73	0.937	18.14	0.41	0.162	0.008	0.7046	6.17	0.30	0.796	0.016	0.3085	65.1	23.4	2
g126	36	15.92	0.930	20.14	0.91	0.177	0.005	0.4912	5.64	0.15	0.790	0.450	0.4074	79.7	637.7	2
g127	60	19.71	0.968	14.28	0.28	0.127	0.004	0.0717	7.85	0.26	0.820	0.020	0.5834	26.6	22.1	2
g127	36	19.99	0.873	13.06	0.49	0.125	0.004	-0.0887	7.99	0.23	0.741	0.420	0.5047	102.1	421.3	1
g128	36	7.69	0.914	12.13	0.93	0.110	0.005	0.2131	9.08	0.42	0.777	0.440	0.0219	61.0	387.9	2
g128	47	8.56	0.879	10.94	0.50	0.105	0.007	0.0213	9.52	0.59	0.745	0.044	0.0047	85.1	37.8	2
g129	36	26.00	0.964	10.71	0.29	0.097	0.005	0.1427	10.35	0.50	0.817	0.028	0.6482	22.5	22.7	2
g129	60	23.63	0.955	11.29	0.21	0.100	0.002	0.1316	10.03	0.17	0.810	0.015	0.0812	28.9	13.7	2
g130	36	6.56	0.986	19.20	1.30	0.162	0.007	0.2361	6.18	0.28	0.835	0.480	0.4863	14.3	625.0	2
g130	36	7.81	0.937	16.42	0.88	0.152	0.009	-0.0285	6.60	0.38	0.790	0.049	0.6168	60.8	60.8	1

Table DR5. Série Grise (BA04) apatite U-Pb data. $^{206}\text{Pb}_c$ refers to the $^{206}\text{Pb}_c/^{206}\text{Pb}_{\text{total}}$ ratio, where Pb_c is non-radiogenic common Pb. ρ – error correlation of preceding isotope ratio columns. Pb correction type: 1 – array intercept Pb_c correction; 2 – iterative Pb_c correction based on the terrestrial Pb evolution model of Stacey and Kramers (1975). All errors are fully propagated and given at the 2σ level.

Grain	Spot size (μm)	U (ppm)	$^{206}\text{Pb}_c$	$^{207}\text{Pb}/^{235}\text{U}$	$^{207}\text{Pb}/^{235}\text{U}$ 2σ	$^{206}\text{Pb}/^{238}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$ 2σ	ρ	$^{238}\text{U}/^{206}\text{Pb}$	$^{238}\text{U}/^{206}\text{Pb}$ 2σ	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{206}\text{Pb}$ 2σ	ρ	^{207}Pb corrected Age (Ma)	^{207}Pb corrected Age 2σ	Pb correction type
g02	30	5.56	0.915	42.90	1.10	0.406	0.010	0.3845	2.465	0.010	0.782	0.021	0.2188	218.7	71.4	2
g04	30	0.69	0.874	28.00	3.60	0.293	0.045	-0.0987	3.413	0.045	0.750	0.073	0.4149	234.2	171.8	2
g06	30	26.40	0.542	6.35	0.24	0.098	0.003	-0.1554	10.256	0.003	0.487	0.017	-0.1704	281.5	15.7	2
g07	30	44.42	0.578	7.36	0.17	0.105	0.002	-0.0978	9.488	0.002	0.516	0.012	0.0788	280.2	11.9	2
g08	60	0.39	0.999	170.00	28.00	1.460	0.220	0.6550	0.685	0.220	0.840	0.120	0.1610	8.2	1423.5	2
g09	60	0.67	1.168	26.00	3.60	0.236	0.039	0.2850	4.237	0.039	0.950	0.210	0.5392	-260.1	427.8	2
g10	60	0.42	1.114	11.20	1.50	0.107	0.015	0.0960	9.346	0.015	0.920	0.200	0.7897	-78.9	177.9	2
g11	30	0.23	1.150	190.00	16.00	1.630	0.110	0.2877	0.613	0.110	0.873	0.054	0.0138	-1814.3	1022.6	2
g12	30	11.34	0.753	16.88	0.55	0.189	0.005	0.4004	5.280	0.005	0.657	0.020	0.2414	294.5	31.8	2
g13	60	2.91	0.846	38.50	1.30	0.379	0.012	0.4423	2.639	0.012	0.736	0.026	0.5691	365.6	79.0	2
g14	60	34.39	0.610	10.91	0.19	0.144	0.002	0.3669	6.940	0.002	0.545	0.010	0.5031	352.8	13.4	2
g16	60	0.30	1.008	68.30	7.20	0.601	0.047	0.2007	1.664	0.047	0.840	0.100	0.6462	-29.3	494.9	2
g17	60	2.06	0.831	73.90	5.40	0.686	0.055	0.7750	1.458	0.055	0.746	0.043	0.8022	709.0	222.3	2

g19	30	12.95	0.765	15.11	0.51	0.169	0.005	-0.1359	5.924	0.005	0.664	0.021	-0.1419	250.7	29.7	2
g20	60	3.95	0.437	2.15	0.16	0.042	0.003	0.0974	23.753	0.003	0.397	0.041	0.7165	151.0	17.6	2
g22	60	0.42	1.109	59.60	3.80	0.488	0.028	0.2136	2.049	0.028	0.899	0.070	0.6786	-353.3	301.4	2
g23	30	29.11	0.440	4.42	0.17	0.080	0.002	-0.1763	12.438	0.002	0.405	0.015	0.0029	283.9	11.9	2
g24	60	1.05	0.951	45.50	2.10	0.414	0.020	0.2999	2.415	0.020	0.805	0.044	0.6163	129.9	147.7	2
g25	60	0.03	1.006	900.00	210.00	8.500	2.100	0.8154	0.118	2.100	0.870	0.140	0.2769	-346.2	9767.1	2
g28	60	0.05	1.029	1450.00	300.00	12.100	2.500	0.9563	0.083	2.500	0.859	0.069	0.1359	-2743.9	10015.0	2
g29	60	0.04	1.090	1150.00	510.00	8.800	3.400	0.9515	0.114	3.400	0.910	0.270	-0.1034	-10121.9	88666.9	2
g33	60	2.26	0.929	54.70	2.30	0.502	0.025	0.4988	1.992	0.025	0.794	0.036	0.6235	224.5	145.3	2
g34	60	7.19	0.917	40.10	1.10	0.369	0.009	0.5172	2.708	0.009	0.782	0.018	0.3481	195.1	57.2	2
g36	30	12.45	0.639	10.02	0.49	0.129	0.005	-0.0954	7.740	0.005	0.565	0.022	-0.0960	294.1	24.8	2
g37	30	12.60	0.536	7.72	0.31	0.118	0.003	-0.1164	8.496	0.003	0.485	0.021	0.0951	342.7	21.3	2
g38	60	0.28	0.987	87.00	14.00	0.739	0.062	0.5144	1.353	0.062	0.830	0.110	0.0645	59.6	657.8	2
g41	30	6.63	0.854	43.00	1.20	0.426	0.012	-0.2208	2.347	0.012	0.744	0.015	-0.2117	388.6	55.2	2
g42	60	1.27	0.961	14.50	1.10	0.136	0.010	0.0526	7.353	0.010	0.807	0.083	0.4167	34.0	92.0	2
g44	60	1.19	0.920	15.60	1.20	0.149	0.009	0.3090	6.716	0.009	0.777	0.074	0.7727	76.5	89.3	2
g45	30	9.47	0.866	27.99	0.91	0.279	0.010	-0.2547	3.584	0.010	0.744	0.020	-0.0230	236.5	47.2	2
g48	60	0.05	1.102	650.00	140.00	5.700	1.600	0.9846	0.175	1.600	0.920	0.170	0.4595	-5657.5	18188.5	2
g50	60	0.10	0.984	213.00	50.00	1.770	0.290	0.7544	0.565	0.290	0.840	0.110	-0.0352	175.4	1532.9	2
g51	60	24.72	0.429	4.17	0.13	0.076	0.002	0.3317	13.245	0.002	0.396	0.013	0.2702	271.9	9.5	2
g52	60	41.09	0.361	3.27	0.09	0.068	0.001	-0.0003	14.620	0.001	0.341	0.010	0.4816	276.0	6.8	2

Table DR6. Grès Verts (BA05) apatite U-Pb data. $^{206}\text{Pb}_c$ refers to the $^{206}\text{Pb}_c / ^{206}\text{Pb}_{\text{total}}$ ratio, where Pb_c is non-radiogenic common Pb. ρ – error correlation of preceding isotope ratio columns. Pb correction type: 1 – array intercept Pb_c correction; 2 – iterative Pb_c correction based on the terrestrial Pb evolution model of Stacey and Kramers (1975). All errors are fully propagated and given at the 2σ level.

Grain	Spot size (μm)	U (ppm)	$^{206}\text{Pb}_c$	207/235	207/235 2σ	206/238	206/238 2σ	ρ	238/206	238/206 2σ	207/206	207/206 2σ	ρ	^{207}Pb corrected Age (Ma)	^{207}Pb corrected Age 2σ	Pb correction type
g1	36	7.77	0.827	48.20	1.90	0.479	0.014	-0.1096	2.088	0.061	0.730	0.030	0.5131	513.4	110.9	2
g2	36	15.90	0.566	9.51	0.61	0.136	0.006	0.3735	7.369	0.315	0.519	0.032	0.2345	369.0	36.4	1
g4	36	1.38	0.973	389.00	17.00	3.410	0.160	0.8057	-0.013	0.006	-1.400	1.700	0.0130	1200.0	550.7	1
g5	36	9.47	0.886	63.90	2.10	0.591	0.019	0.7875	0.293	0.014	0.828	0.021	0.3271	465.1	83.1	1
g5	36	10.76	0.874	57.50	1.70	0.542	0.016	0.4593	1.692	0.054	0.772	0.017	0.1012	427.3	106.2	1
g6	47	1.14	0.954	577.00	20.00	5.040	0.290	0.9337	1.845	0.054	0.772	0.025	0.3545	-620.2	696.7	2
g8	47	3.24	0.550	5.50	1.60	0.066	0.009	0.2815	0.198	0.011	0.837	0.013	0.0669	196.8	43.7	1
g9	60	0.45	0.908	18.00	5.00	0.199	0.050	0.2519	0.033	0.003	0.783	0.013	-0.1741	162.1	187.2	1
g10	80	2.65	0.865	122.90	3.60	1.048	0.047	0.5375	15.106	1.940	0.489	0.071	-0.0081	729.7	198.4	1
g12	80	0.74	0.871	21.20	2.80	0.205	0.033	0.2816	5.025	1.263	0.770	0.120	0.1711	207.5	144.6	1
g13	80	4.01	0.887	102.70	4.10	0.891	0.037	0.1190	0.954	0.043	0.753	0.020	0.0679	718.9	173.3	1
g13	36	3.70	0.936	86.00	3.60	0.768	0.027	0.4638	0.175	0.034	0.751	0.017	0.0704	309.6	213.7	1
g14	60	1.24	0.952	37.30	2.10	0.333	0.023	0.1254	4.878	0.785	0.744	0.090	0.1945	-1.1	127.1	2
g15	80	14.53	0.814	66.40	1.40	0.614	0.023	0.4637	1.122	0.047	0.736	0.028	0.0547	697.0	72.2	1
g15	36	18.49	0.892	53.80	1.70	0.501	0.013	0.4599	1.302	0.046	0.823	0.036	0.2962	339.4	88.2	1
g16	80	0.63	0.902	34.60	4.50	0.317	0.044	0.0355	3.003	0.207	0.836	0.046	0.2958	256.9	203.0	1
g17	60	2.16	0.974	226.00	12.00	2.060	0.160	0.4295	1.629	0.061	0.710	0.013	0.3541	-871.4	375.8	2
g18	36	5.06	0.196	1.19	0.34	0.030	0.003	0.1977	1.996	0.052	0.787	0.022	0.2754	154.7	22.9	1
g19	60	6.53	0.896	77.60	3.80	0.715	0.034	0.7227	3.155	0.438	0.770	0.083	-0.0301	502.2	96.9	1
g20	80	5.24	0.926	382.00	7.90	3.212	0.120	0.6042	0.485	0.038	0.854	0.017	0.3747	725.1	219.9	1
g21	60	13.21	0.990	168.50	2.30	1.462	0.038	0.6774	33.113	3.509	0.211	0.070	0.2194	423.9	140.6	1
g21	36	9.86	0.975	158.70	3.80	1.417	0.036	0.5790	1.399	0.067	0.783	0.016	-0.0557	-545.7	242.6	2
g24	36	0.70	0.840	275.00	30.00	2.660	0.360	0.1978	0.311	0.012	0.772	0.012	0.3301	1380.7	721.4	1
g24	36	2.86	0.929	62.80	3.50	0.589	0.028	0.4858	0.684	0.018	0.838	0.010	0.3193	265.1	239.1	1

g26	36	14.10	0.739	21.10	3.60	0.238	0.030	0.9221	0.706	0.018	0.855	0.017	0.3461	389.2	89.6	1
g27	60	5.50	0.955	65.10	1.90	0.581	0.020	0.2869	-0.006	0.005	1.010	0.250	0.9659	287.9	87.0	1
g28	60	15.40	0.731	19.10	2.00	0.205	0.019	0.4368	-0.003	0.004	-1.700	3.600	0.0645	365.3	52.8	1
g29	80	11.59	0.833	76.70	1.10	0.705	0.026	0.2946	0.376	0.051	0.805	0.036	0.0175	716.4	67.9	1
g29	36	9.93	0.958	83.20	2.70	0.751	0.021	0.4099	1.698	0.081	0.817	0.053	-0.0655	-47.8	180.7	2
g30	47	12.17	0.988	122.90	3.40	1.073	0.054	0.6350	0.266	0.016	0.762	0.017	0.0927	349.9	106.0	1
g32	36	11.26	0.614	9.27	0.59	0.131	0.006	0.2196	4.202	0.530	0.661	0.042	-0.4633	318.8	43.4	1
g33	80	3.43	0.896	178.00	40.00	1.480	0.330	0.9901	1.721	0.059	0.811	0.018	0.0385	922.1	274.8	2
g34	80	0.57	1.471	22.50	9.10	0.142	0.016	-0.0367	4.878	0.452	0.642	0.026	-0.3022	-587.7	665.6	2
g35	47	0.50	1.078	33.00	13.00	0.219	0.053	0.0937	1.418	0.052	0.725	0.010	0.1545	-24.3	290.5	1
g35	36	0.48	1.029	19.90	5.00	0.216	0.037	0.3347	1.332	0.037	0.841	0.028	0.4673	-40.8	472.3	1
g36	47	6.50	0.919	77.50	2.30	0.714	0.039	0.2425	0.932	0.047	0.833	0.010	0.4185	437.9	107.0	1
g36	36	12.40	0.875	39.40	1.30	0.394	0.012	0.1448	0.096	0.005	0.796	0.016	0.1950	309.4	83.8	1
g37	80	5.26	0.907	182.90	4.60	1.609	0.066	0.4721	7.616	0.354	0.558	0.041	0.4799	1683.4	352.0	1
g38	36	4.94	0.938	67.30	3.30	0.630	0.028	0.6992	0.676	0.151	0.792	0.016	-0.0727	245.2	176.5	1
g39	36	18.90	0.887	38.50	2.20	0.378	0.019	0.9106	7.042	0.793	1.270	0.510	0.1279	268.5	70.6	1
g40	36	45.55	0.678	11.89	0.36	0.149	0.003	0.0635	4.566	1.105	0.890	0.170	0.3005	301.7	27.5	1
g41	60	6.66	0.856	37.90	1.30	0.370	0.014	0.8466	4.630	0.793	0.900	0.280	0.4847	335.4	55.6	1
g42	80	6.03	0.853	63.50	1.40	0.577	0.022	0.7781	1.401	0.077	0.795	0.018	0.5737	539.8	77.7	1
g43	80	21.30	0.257	3.05	0.41	0.079	0.008	0.4115	2.538	0.077	0.773	0.027	0.5070	370.6	40.4	1
g44	36	6.77	0.960	83.60	2.90	0.755	0.023	0.3299	0.622	0.025	0.783	0.016	0.1007	-68.5	200.4	2
g45	60	0.50	1.122	777.00	34.00	6.600	0.290	0.9034	1.587	0.071	0.825	0.036	0.0193	-10639.7	5389.4	2
g46	47	7.01	0.882	66.90	3.90	0.624	0.044	0.6818	2.646	0.133	0.783	0.023	0.2142	495.1	96.6	1
g46	36	6.36	0.900	74.50	5.60	0.727	0.051	0.8117	6.711	0.153	0.611	0.023	0.4979	451.1	185.9	1
g47	60	13.53	0.883	41.68	0.77	0.398	0.011	0.0092	2.703	0.102	0.757	0.018	0.1908	348.7	43.4	1
g48	47	8.54	0.961	109.80	4.20	0.975	0.056	0.8009	1.733	0.066	0.752	0.016	0.1790	406.1	126.4	1
g48	36	9.69	0.987	103.00	4.50	0.893	0.036	0.7576	12.642	1.343	0.261	0.020	-0.2139	-394.3	208.2	2
g49	47	0.26	0.982	1670.00	110.00	14.380	1.100	0.9664	1.325	0.040	0.843	0.031	0.4446	-3600.9	3723.2	2
g50	80	0.62	1.343	22.00	5.00	0.153	0.012	0.0029	0.152	0.007	0.858	0.016	-0.0270	-246.2	404.1	1
g51	36	2.31	0.932	164.80	9.60	1.520	0.079	0.6110	1.603	0.113	0.771	0.018	0.1300	776.9	454.6	2
g52	60	10.80	0.930	66.20	5.80	0.603	0.050	0.9717	1.376	0.096	0.794	0.033	0.0627	362.0	85.9	1
g53	60	15.12	0.864	41.50	1.10	0.405	0.017	0.2410	2.511	0.069	0.761	0.012	0.1437	390.8	45.6	1
g54	60	0.95	0.946	334.00	32.00	2.930	0.290	0.9318	1.026	0.059	0.821	0.015	0.3761	1224.6	446.9	1
g55	60	2.83	0.972	484.00	11.00	4.114	0.120	0.7629	1.120	0.045	0.865	0.025	0.2276	702.2	417.5	1
g56	80	0.70	0.885	419.00	19.00	3.610	0.200	0.6049	0.070	0.005	0.860	0.017	0.0013	1216.6	467.5	1
g58	80	0.26	1.233	693.00	28.00	5.860	0.350	0.2150	6.536	0.513	1.080	0.330	0.7822	-149.7	1358.8	1
g59	80	0.68	1.137	26.20	4.80	0.223	0.031	-0.0428	0.658	0.034	0.820	0.041	0.2839	-199.6	285.5	1
g60	80	0.54	1.085	1036.00	43.00	8.640	0.460	0.3670	1.658	0.138	0.797	0.016	-0.3432	-2355.0	1785.2	1
g61	60	15.09	1.021	115.80	1.50	1.000	0.025	0.8103	2.469	0.104	0.749	0.012	0.6047	-139.6	105.2	2
g62	36	57.30	0.909	159.20	1.80	1.411	0.022	0.7050	0.341	0.034	0.819	0.019	-0.0573	782.6	106.4	1
g62	36	66.40	0.997	169.50	2.40	1.462	0.028	0.6454	0.243	0.007	0.853	0.011	0.0963	-1388.9	218.5	2
g63	60	11.48	0.908	56.30	1.20	0.526	0.016	0.7826	0.277	0.015	0.830	0.016	0.3824	375.7	54.1	1
g63	36	13.04	0.933	46.50	2.20	0.434	0.019	0.8917	0.171	0.010	0.879	0.028	0.1016	186.1	93.6	1
g64	60	0.43	1.856	39.00	17.00	0.226	0.034	0.1766	4.484	0.623	0.930	0.150	0.0698	-955.5	1372.6	1
g65	47	4.43	0.952	610.00	110.00	5.260	1.000	0.9733	0.116	0.006	0.906	0.017	-0.0006	-185.7	719.2	2
g65	36	8.70	0.955	125.00	25.00	1.120	0.210	0.9810	1.000	0.025	0.846	0.009	0.2266	-24.1	224.3	2
g66	36	21.07	0.664	15.04	0.41	0.182	0.005	0.2002	0.709	0.011	0.802	0.007	0.3815	395.9	31.5	1
g67	60	6.40	0.939	70.40	1.30	0.637	0.019	0.3189	0.684	0.013	0.873	0.011	0.4202	353.4	86.0	1
g68	80	0.50	1.348	1190.00	130.00	9.900	1.200	0.8986	1.901	0.058	0.782	0.011	0.2217	-175.6	1642.2	1
g69	36	49.04	0.822	26.67	0.59	0.278	0.006	0.2717	2.304	0.101	0.820	0.027	0.2956	312.3	39.2	1
g70	80	1.38	1.070	1238.00	43.00	10.320	0.470	0.9605	4.425	0.666	1.390	0.690	0.1175	-1518.2	1541.5	1
g71	60	0.92	0.911	6.04	0.72	0.077	0.007	0.8277	0.190	0.036	0.836	0.014	-0.2875	630.2	154.8	1
g72	80	18.21	0.938	45.62	0.67	0.429	0.015	0.5246	0.893	0.167	0.839	0.023	-0.0349	258.7	55.7	1
g72	36	8.24	0.929	85.90	3.30	0.761	0.021	0.6849	5.495	0.154	0.590	0.021	0.5360	341.2	145.0	1

g73	36	30.08	0.796	26.08	0.87	0.269	0.007	0.2871	1.570	0.047	0.803	0.016	0.5423	344.2	45.6	1
g74	60	9.72	0.933	63.72	0.99	0.574	0.021	0.1200	0.101	0.012	0.878	0.019	0.0476	244.1	72.6	2
g74	36	10.74	0.899	54.80	1.90	0.504	0.014	0.3847	3.592	0.072	0.729	0.017	0.4498	318.6	103.4	1
g75	60	0.45	0.881	17.80	1.90	0.440	0.360	-0.0612	0.097	0.004	0.893	0.013	-0.0479	328.3	424.7	1
g76	60	4.69	0.967	105.30	3.00	0.937	0.033	0.5566	13.004	1.167	0.588	0.073	0.4745	376.5	126.7	1
g77	60	0.42	1.111	62.70	4.10	0.530	0.042	0.8149	2.333	0.082	0.797	0.015	0.4569	-92.1	281.3	1
g78	36	28.45	0.796	28.56	0.72	0.290	0.007	0.4340	1.314	0.036	0.817	0.024	-0.0387	371.1	46.9	1
g79	80	1.98	1.239	568.30	9.20	4.782	0.170	0.5755	3.719	0.101	0.708	0.021	0.3127	-428.7	647.7	1
g80	36	7.71	0.891	128.20	2.40	1.155	0.028	0.0082	1.742	0.064	0.798	0.014	0.1056	767.2	150.3	1
g80	36	6.73	0.929	147.20	3.80	1.212	0.031	0.5005	1.984	0.055	0.793	0.026	0.1545	611.8	110.0	2
g81	60	0.73	0.962	37.10	3.90	0.338	0.032	0.3278	2.273	1.860	0.762	0.098	0.5202	168.5	177.4	1
g84	60	1.95	0.988	270.70	5.90	2.351	0.080	0.0192	1.067	0.038	0.823	0.016	0.3020	511.5	299.8	1
g85	36	24.20	0.813	26.85	0.81	0.270	0.007	0.1873	1.887	0.150	0.898	0.067	0.9962	316.7	51.4	1
g86	80	6.43	1.170	100.10	7.80	0.823	0.033	0.1216	3.445	0.085	0.708	0.020	0.4287	-228.4	417.8	1
g87	60	13.17	0.914	50.49	0.69	0.466	0.012	0.7476	0.209	0.007	0.887	0.014	0.3703	328.8	44.3	1
g87	36	13.36	0.863	36.20	1.20	0.341	0.010	0.1282	0.866	0.021	0.787	0.016	0.6508	294.0	79.9	1
g88	80	3.84	0.999	260.50	3.60	2.212	0.071	0.7511	0.825	0.021	0.862	0.021	0.3618	-4982.0	576.9	2
g89	80	11.59	0.981	65.90	1.20	0.593	0.021	0.5847	2.959	0.280	0.811	0.068	0.0418	229.6	58.4	1
g90	36	6.05	0.897	123.10	5.50	1.122	0.043	0.7271	12.500	2.344	0.000	1.200	0.2105	705.1	215.8	2
g91	36	13.39	0.782	11.63	0.66	0.121	0.004	0.2111	0.425	0.014	0.847	0.015	0.6789	168.0	39.9	1
g92	47	6.49	0.937	92.20	2.70	0.825	0.043	0.2806	3.709	0.098	0.722	0.024	0.4980	430.9	112.1	1
g92	36	5.01	0.919	103.40	3.90	0.932	0.030	0.6035	1.215	0.049	0.911	0.063	-0.0337	471.7	188.8	1
g93	80	0.84	0.960	647.00	62.00	5.730	0.660	1.0000	2.147	0.055	0.783	0.010	0.1267	-9191.2	6270.8	2
g94	36	20.35	0.817	32.14	0.89	0.312	0.006	0.1534	2.933	0.082	0.763	0.030	0.5725	358.8	56.8	1
g95	60	14.00	0.898	62.00	12.00	0.535	0.100	0.9918	0.452	0.015	0.875	0.008	0.1838	341.9	116.1	1
g95	36	3.85	0.886	105.70	4.70	0.958	0.033	0.5412	1.686	0.060	0.825	0.010	0.1958	740.3	240.5	2
g96	80	4.69	0.989	179.50	4.00	1.525	0.054	0.9104	0.891	0.034	0.792	0.025	0.0979	-1211.1	234.3	2
g97	60	1.41	1.044	2050.00	44.00	17.030	0.520	0.9755	8.237	0.299	0.696	0.042	0.4078	-9045.6	5975.9	2
g98	36	6.17	0.868	69.90	2.80	0.648	0.021	0.6432	1.212	0.063	0.807	0.016	0.2662	528.1	135.2	1
g99	60	24.96	0.515	6.32	0.21	0.096	0.003	0.7209	1.073	0.035	0.809	0.026	0.2205	293.3	12.7	1
g100	80	0.94	1.257	1170.00	150.00	9.700	1.300	0.9565	0.175	0.020	0.844	0.027	0.1792	574.0	936.9	1
g101	60	10.53	0.965	172.70	6.50	1.482	0.067	0.9163	3.204	0.066	0.725	0.023	0.4740	-257.6	165.6	2
g102	36	6.86	0.858	56.30	2.30	0.528	0.019	0.3773	1.869	0.349	0.792	0.023	-0.5240	467.6	126.1	1
g102	36	9.17	0.847	49.90	1.50	0.470	0.015	0.3324	1.044	0.036	0.783	0.034	0.2581	476.6	85.4	1
g103	60	0.07	1.114	730.00	190.00	6.900	1.900	0.0211	0.656	0.023	0.867	0.012	-0.0738	-9999.8	45726.9	2
g104	36	3.45	0.916	131.60	4.80	1.141	0.037	0.2585	0.059	0.002	0.872	0.007	0.0370	607.3	252.0	2
g104	47	3.35	0.923	138.20	4.50	1.232	0.064	0.7716	1.543	0.050	0.768	0.027	0.2511	591.2	156.9	2
g105	36	3.50	0.901	182.00	20.00	1.550	0.140	0.4958	10.428	0.315	0.476	0.012	0.0212	919.6	365.6	2
g106	36	13.47	0.849	57.70	2.20	0.539	0.019	0.7337	0.103	0.014	0.868	0.010	-0.1028	505.0	94.2	1
g107	80	3.88	0.987	205.00	14.00	1.750	0.130	0.9111	0.675	0.031	0.847	0.010	0.0080	-1514.3	318.0	2
g108	36	5.21	0.892	99.40	3.10	0.891	0.023	0.3668	1.894	0.068	0.759	0.031	0.3621	596.8	178.0	2
g108	60	5.86	0.953	90.30	1.30	0.802	0.021	0.2580	2.128	0.068	0.742	0.023	0.4301	377.2	102.7	1
g109	80	0.66	0.868	6.80	3.00	0.170	0.150	0.0140	0.145	0.040	0.930	0.180	-0.0395	177.6	504.2	1
g110	36	15.04	0.850	59.90	2.50	0.562	0.019	0.8195	0.876	0.028	0.807	0.029	0.5172	521.2	92.0	1
g111	80	0.37	1.055	1897.00	96.00	15.710	0.930	0.7315	0.812	0.042	0.813	0.015	0.2837	-667.5	2532.8	1
g112	36	6.51	0.882	107.50	9.00	0.989	0.075	0.9112	0.645	0.058	0.796	0.031	-0.1341	709.7	182.7	1
g113	80	7.04	0.764	17.31	0.61	0.183	0.010	-0.0899	1.855	0.065	0.752	0.022	-0.1420	247.1	45.7	2
g114	36	33.26	0.789	42.70	1.10	0.420	0.010	0.4486	0.571	0.042	0.865	0.013	0.0245	547.8	58.1	1
g115	47	2.11	0.966	171.10	6.40	1.475	0.081	0.3549	1.122	0.029	0.788	0.026	0.3875	-256.8	296.0	2
g116	60	79.50	0.823	27.23	0.31	0.275	0.007	0.5663	1.247	0.033	0.814	0.015	0.4867	339.1	21.9	1
g117	80	5.81	0.959	64.70	1.40	0.575	0.020	0.3082	5.882	5.190	0.740	0.370	0.8487	276.4	82.3	1
g118	80	4.43	0.961	89.40	2.20	0.792	0.031	0.2829	1.779	0.060	0.738	0.020	-0.1540	348.9	107.5	1
g119	80	1.58	0.782	19.70	2.60	0.230	0.064	0.2496	0.064	0.004	0.881	0.017	-0.0355	341.8	135.0	1
g120	36	1.83	0.813	113.20	6.80	1.091	0.053	0.4395	1.011	0.077	0.749	0.022	-0.1508	1196.4	366.2	2

g121	60	4.26	0.917	68.60	3.10	0.626	0.030	0.9030	5.461	0.283	0.681	0.030	0.2943	403.6	81.3	1
g122	36	9.25	0.860	69.30	2.00	0.633	0.022	0.1183	2.383	0.055	0.703	0.017	0.3123	548.9	114.4	1
g123	80	15.10	0.858	33.66	0.77	0.330	0.013	0.1943	0.678	0.037	0.847	0.022	0.1884	339.8	43.4	1
g124	36	4.33	0.834	104.50	3.70	0.949	0.029	0.3261	3.643	0.090	0.714	0.007	0.2421	561.3	102.1	2
g125	36	13.34	0.815	56.80	2.40	0.547	0.024	0.7244	1.738	0.060	0.813	0.017	0.1875	621.1	100.1	1
g126	60	9.61	0.951	95.50	1.60	0.849	0.024	0.6162	1.263	0.049	0.818	0.016	0.1473	398.9	92.4	1
g127	36	3.84	0.879	114.20	5.00	1.059	0.041	0.2182	4.348	1.210	0.681	0.056	0.2278	774.6	219.3	1
g128	36	16.26	0.642	13.88	0.69	0.169	0.006	0.2305	0.917	0.045	0.727	0.046	0.3216	378.6	42.9	1
g129	36	11.26	0.826	55.70	4.50	0.527	0.037	0.7552	1.597	0.077	0.791	0.015	-0.1239	565.1	117.3	1
g130	36	69.80	0.575	14.00	3.00	0.164	0.022	0.9950	1.580	0.055	0.761	0.023	0.3273	434.5	63.4	1
g131	36	65.90	0.645	14.01	0.65	0.170	0.007	0.8146	3.027	0.119	0.741	0.015	0.2160	377.9	27.0	1
g132	36	10.95	0.816	42.60	1.70	0.408	0.013	0.3591	1.054	0.032	0.774	0.029	0.4388	466.6	94.5	1
g133	36	3.77	0.897	132.00	5.30	1.164	0.036	0.5774	1.828	0.080	0.725	0.023	0.3201	730.7	231.0	2
g134	36	37.82	0.431	5.91	0.30	0.105	0.003	0.3310	1.178	0.033	0.814	0.012	0.2983	372.8	19.2	1

Table DR7. Molasse Marine 4 (VA02) apatite U-Pb data. $^{206}\text{Pb}_c$ refers to the $^{206}\text{Pb}_c/^{206}\text{Pb}_{\text{total}}$ ratio, where Pb_c is non-radiogenic common Pb. ρ – error correlation of preceding isotope ratio columns. Pb correction type: 1 – array intercept Pb_c correction; 2 – iterative Pb_c correction based on the terrestrial Pb evolution model of Stacey and Kramers (1975). All errors are fully propagated and given at the 2σ level.

Grain	Spot size (μm)	U (ppm)	$^{206}\text{Pb}_c$	$^{207}/^{235}$	$^{207}/^{235}$ 2σ	$^{206}/^{238}$	$^{206}/^{238}$ 2σ	ρ	$^{238}/^{206}$	$^{238}/^{206}$ 2σ	$^{207}/^{206}$	$^{207}/^{206}$ 2σ	ρ	^{207}Pb corrected Age (Ma)	^{207}Pb corrected Age 2σ	Pb correction type
g1	60	40.13	0.478	5.03	0.17	0.086	0.003	0.8552	11.682	0.368	0.432	0.011	-0.3020	284.1	11.8	2
g2	80	0.14	1.104	1770.00	430.00	11.400	2.400	0.5715	0.088	0.018	0.918	0.063	-0.0210	1455.4	596.0	1
g3	80	0.59	1.140	23.60	3.50	0.186	0.016	0.0377	5.376	0.462	0.960	0.130	-0.0286	-215.2	207.0	2
g4	47	2.61	0.903	23.80	1.40	0.221	0.015	0.8837	4.525	0.307	0.767	0.035	0.4720	301.6	30.1	1
g5	36	1.91	1.029	30.70	2.70	0.277	0.031	-0.0160	3.610	0.404	0.855	0.099	0.6438	-51.5	227.0	2
g6	80	52.60	0.399	2.55	0.10	0.050	0.002	0.0198	20.190	0.734	0.368	0.014	0.0250	189.2	8.8	2
g7	60	1.37	0.940	17.10	2.10	0.160	0.013	0.1027	6.250	0.508	0.792	0.093	0.0847	229.8	56.8	1
g8	36	22.37	0.878	89.70	3.10	0.834	0.061	0.5601	1.199	0.088	0.779	0.017	0.2217	626.2	122.0	2
g9	60	2.96	0.946	42.90	2.30	0.380	0.015	0.1858	2.632	0.104	0.801	0.035	0.0179	206.0	68.4	1
g9	36	4.52	0.815	31.20	2.60	0.316	0.026	0.3569	3.165	0.260	0.711	0.058	0.1777	366.3	144.0	2
g10	80	1.57	1.042	116.40	2.80	0.975	0.034	-0.0632	1.026	0.036	0.854	0.019	0.1556	-272.1	174.5	2
g11	80	3.66	0.930	50.00	1.60	0.453	0.017	0.1536	2.208	0.083	0.793	0.022	0.2342	245.3	27.8	1
g11	36	4.28	0.841	54.50	2.50	0.534	0.041	0.2694	1.873	0.144	0.742	0.036	0.4863	526.6	150.9	2
g12	47	27.29	0.922	12.18	0.48	0.113	0.006	0.2979	8.842	0.477	0.785	0.025	0.1159	49.3	24.1	2
g12	36	32.55	0.927	18.38	0.59	0.169	0.012	0.1544	5.928	0.422	0.789	0.028	0.5016	76.6	39.6	1
g13	60	1.19	0.965	4430.00	96.00	38.560	1.200	0.8927	0.026	0.001	0.834	0.006	0.2878	-8926.7	11577.2	1
g14	36	40.33	0.706	17.79	0.49	0.205	0.014	0.4330	4.883	0.334	0.624	0.016	0.3069	376.4	36.8	2
g15	60	6.80	0.971	94.20	1.80	0.829	0.023	0.5669	1.206	0.033	0.823	0.015	0.2801	214.2	10.5	1
g16	80	1.41	1.036	218.00	16.00	1.910	0.150	0.9174	0.524	0.041	0.850	0.016	-0.1134	197.2	83.8	1
g17	60	58.14	0.980	28.51	0.34	0.251	0.006	0.4318	3.989	0.095	0.832	0.009	0.4712	192.1	52.2	2
g17	36	52.50	0.931	45.67	0.81	0.422	0.029	0.2243	2.371	0.163	0.791	0.013	0.6512	163.9	162.2	1
g18	80	1.33	1.024	351.60	7.40	2.916	0.110	0.8490	0.343	0.013	0.867	0.011	0.3585	-8316.5	1513.1	2
g19	60	28.90	0.995	49.96	0.47	0.432	0.010	0.6102	2.315	0.054	0.833	0.009	0.3457	29.3	16.2	1
g20	60	0.47	0.987	6610.00	270.00	56.900	2.500	0.9778	6.098	0.227	0.680	0.042	-0.0083	0.0	5412.6	2
g21	80	6.52	0.787	14.85	0.65	0.164	0.006	0.0477	0.198	0.019	0.843	0.018	-0.2253	300.3	17.0	1
g22	60	1.00	1.096	586.00	55.00	5.040	0.470	0.8632	0.876	0.063	0.850	0.014	-0.0454	282.0	11.8	1
g23	80	2.78	1.003	134.80	8.40	1.141	0.082	0.9547	1.927	0.141	0.764	0.029	0.5520	-262.0	160.9	2
g23	36	9.13	0.878	54.20	1.90	0.519	0.038	0.1568	0.043	0.002	0.875	0.014	0.1310	394.5	121.5	2
g26	60	0.23	1.050	2790.00	150.00	23.000	1.200	0.9663	5.400	0.166	0.674	0.014	0.1995	32.0	24.0	1
g27	60	15.55	0.777	17.47	0.46	0.185	0.006	0.7500	2.174	0.099	0.787	0.029	0.0035	253.1	22.2	1

g28	80	2.34	0.924	50.40	1.60	0.460	0.021	0.5181	1.572	0.121	0.769	0.035	0.1131	232.9	108.6	2
g29	80	3.07	0.877	67.70	1.80	0.636	0.049	-0.0142	1.618	0.128	0.763	0.044	0.5910	484.8	174.2	2
g29	36	3.70	0.868	64.90	3.70	0.618	0.049	0.1619	-0.001	0.001	0.879	0.056	0.1155	504.9	209.2	2
g30	60	0.01	1.055	-680000.00	250000.00	-680.000	240.000	0.2904	3.390	0.598	0.778	0.068	0.1025	131.7	108.8	1
g32	60	1.16	0.915	30.20	5.20	0.295	0.052	0.4602	19.048	0.834	0.785	0.018	0.4464	238.9	86.5	1
g33	80	48.37	0.934	5.67	0.13	0.053	0.002	-0.0695	24.510	1.922	0.738	0.036	0.2714	22.2	8.4	2
g33	36	49.90	0.863	4.25	0.25	0.041	0.003	0.5323	3.155	0.249	0.720	0.030	0.3207	35.3	12.4	1
g34	36	11.44	0.828	31.60	1.30	0.317	0.025	0.2441	8.446	0.613	0.497	0.024	0.4711	342.2	79.5	2
g35	36	42.35	0.552	8.09	0.33	0.118	0.009	0.0700	12.531	0.942	0.390	0.024	0.1058	333.5	32.6	2
g36	36	29.85	0.421	4.25	0.26	0.080	0.006	0.3285	11.806	0.990	0.799	0.032	0.2573	291.2	26.3	2
g37	36	43.60	0.939	9.13	0.48	0.085	0.007	0.8060	13.870	0.981	0.245	0.015	0.2171	31.8	22.6	1
g38	36	60.30	0.238	2.45	0.15	0.072	0.005	0.1613	0.030	0.006	0.859	0.054	-0.0616	344.8	25.4	2
g39	80	0.02	1.578	3720.00	750.00	33.700	7.000	0.8953	7.547	0.570	0.488	0.033	0.4923	-5055.9	30843.0	1
g40	36	14.24	0.537	8.83	0.51	0.133	0.010	-0.0233	15.625	3.906	0.393	0.071	0.3486	383.5	44.0	2
g41	36	3.71	0.428	2.72	0.68	0.064	0.016	0.5583	24.272	3.653	0.550	0.210	0.6752	411.3	111.9	1
g41	36	3.73	0.628	2.16	0.61	0.041	0.006	0.3077	0.147	0.018	0.990	0.210	0.9998	97.7	70.6	1
g42	80	0.07	1.196	829.00	82.00	6.790	0.840	0.3409	10.929	0.776	0.440	0.020	0.3555	-21.2	150.6	1
g43	36	47.22	0.483	5.39	0.20	0.092	0.007	0.1277	44.248	3.133	0.659	0.026	0.2084	298.1	25.4	2
g44	36	191.80	0.764	2.05	0.08	0.023	0.002	0.4277	1.263	0.045	0.820	0.010	0.3384	34.2	5.4	1
g45	80	13.97	0.965	90.40	1.60	0.792	0.028	0.5713	1.381	0.050	0.831	0.007	-0.0871	256.4	15.7	1
g46	80	20.19	0.982	84.30	1.50	0.724	0.026	0.9311	1.941	0.136	0.797	0.015	0.4669	216.2	70.2	2
g46	36	37.01	0.934	56.50	1.40	0.515	0.036	0.5896	15.175	1.197	0.430	0.040	0.2534	44.4	65.2	2
g47	36	17.27	0.475	4.07	0.40	0.066	0.005	0.2060	11.161	0.324	0.807	0.021	0.2158	219.4	26.9	2
g48	60	33.24	0.962	10.02	0.21	0.090	0.003	0.0508	9.268	0.653	0.794	0.031	0.4465	47.0	20.2	1
g48	36	39.41	0.933	11.77	0.42	0.108	0.008	0.1177	7.788	0.588	0.533	0.031	0.5000	44.8	27.9	1
g49	36	14.55	0.597	9.47	0.47	0.128	0.010	0.2588	6.849	0.610	0.560	0.040	0.0968	325.4	39.3	2
g50	36	10.55	0.629	11.50	0.99	0.146	0.013	0.7410	4.753	0.361	0.659	0.039	0.4256	339.6	54.1	2
g51	36	8.22	0.753	19.30	1.00	0.210	0.016	0.1946	9.950	0.713	0.733	0.025	0.5703	326.1	68.5	2
g52	36	49.36	0.857	10.22	0.33	0.101	0.007	0.0871	2.861	0.205	0.719	0.024	0.4637	90.8	21.9	1
g53	36	16.35	0.823	34.30	1.10	0.350	0.025	0.2283	0.787	0.043	0.750	0.034	0.1762	386.2	71.9	2
g54	36	0.87	0.877	137.10	7.70	1.270	0.070	0.8015	0.982	0.093	0.810	0.063	0.4973	1913.4	296.6	2
g54	36	1.02	0.931	113.40	8.60	1.018	0.096	0.3859	5.787	0.435	0.608	0.035	0.2499	435.2	489.0	2
g56	36	9.60	0.689	14.19	0.89	0.173	0.013	0.3715	6.431	0.203	0.810	0.014	0.2595	337.2	53.3	2
g57	60	33.91	0.965	17.56	0.44	0.156	0.005	0.5662	7.267	0.528	0.767	0.026	0.4722	317.5	15.6	1
g57	36	37.10	0.899	14.31	0.54	0.138	0.010	0.3544	0.467	0.063	0.880	0.110	-0.0148	86.8	30.4	1
g58	80	0.15	1.278	253.00	35.00	2.140	0.290	-0.0078	4.878	0.619	0.810	0.100	-0.0074	-5840.1	5599.1	2
g59	80	1.93	0.964	22.40	3.10	0.205	0.026	0.0790	8.382	0.632	0.529	0.035	0.1471	164.4	80.3	1
g60	36	15.72	0.593	8.55	0.53	0.119	0.009	0.1546	13.175	0.955	0.387	0.016	-0.0385	305.6	39.7	2
g61	36	104.30	0.418	4.00	0.19	0.076	0.006	0.6110	14.144	0.560	0.280	0.017	-0.7035	278.8	22.1	2
g62	60	44.65	0.286	2.82	0.29	0.071	0.003	0.9529	0.005	0.001	0.838	0.011	0.2172	318.9	15.6	2
g63	47	0.05	1.319	23200.00	4200.00	198.000	37.000	0.9993	13.351	0.945	0.269	0.011	0.2000	12.9	173.0	1
g64	36	121.60	0.268	2.77	0.11	0.075	0.005	0.0428	6.109	0.448	0.583	0.028	0.4063	344.2	24.8	2
g65	36	17.96	0.657	13.15	0.63	0.164	0.012	0.2792	10.000	0.700	0.409	0.017	0.4874	352.0	43.9	2
g66	36	58.00	0.441	5.80	0.25	0.100	0.007	-0.0362	0.430	0.033	0.813	0.025	0.1980	350.5	27.6	2
g67	36	2.14	0.959	263.00	11.00	2.328	0.180	0.7399	8.396	0.352	0.575	0.011	0.6655	593.9	469.2	1
g68	80	35.16	0.659	9.43	0.14	0.119	0.005	0.1344	21.231	1.533	0.184	0.014	0.2073	260.8	15.7	2
g69	36	62.60	0.166	1.22	0.09	0.047	0.003	0.0964	1.447	0.054	0.793	0.028	0.2615	248.4	18.4	2
g70	80	3.90	0.917	77.30	1.90	0.691	0.026	-0.0245	1.994	0.052	0.790	0.012	0.4352	359.2	154.2	2
g71	60	8.43	0.928	55.08	0.97	0.501	0.013	0.6794	8.889	0.640	0.475	0.023	0.3015	244.9	56.5	2
g72	36	27.37	0.524	7.53	0.37	0.113	0.008	0.1472	4.950	0.343	0.684	0.024	0.4691	336.2	31.3	2
g73	36	24.28	0.789	19.08	0.57	0.202	0.014	0.0896	0.000	0.000	0.849	0.010	-0.0392	269.5	43.2	2
g74	60	0.02	1.017	-1060000.00	540000.00	-10200.000	4800.000	0.9966	8.554	0.637	0.673	0.022	0.1459	61.6	120.6	1
g75	36	57.30	0.783	10.79	0.38	0.117	0.009	0.6498	2.584	0.134	0.711	0.036	-0.0213	162.8	24.4	1
g76	36	4.26	0.807	39.40	2.30	0.387	0.020	0.7183	6.793	0.508	0.584	0.029	0.5304	311.4	69.1	1

g77	36	23.54	0.661	12.11	0.51	0.147	0.011	0.0371	6.863	0.518	0.557	0.031	0.0603	313.9	40.7	2
g78	36	16.17	0.626	11.34	0.56	0.146	0.011	0.3879	7.163	0.323	0.765	0.038	0.3150	342.4	43.4	2
g79	36	10.00	0.904	15.21	0.56	0.140	0.006	0.2312	7.294	0.585	0.811	0.050	0.4518	231.2	67.4	1
g79	36	11.63	0.954	15.23	0.91	0.137	0.011	0.2521	2.577	0.239	0.779	0.020	0.0135	38.1	55.8	1
g80	60	6.47	0.911	42.10	4.10	0.388	0.036	0.9577	19.157	0.624	0.331	0.019	0.0286	261.8	15.6	1
g81	60	26.45	0.353	2.51	0.25	0.052	0.002	0.3708	9.506	0.714	0.416	0.025	0.3807	214.8	10.5	2
g82	36	22.06	0.449	6.36	0.37	0.105	0.008	0.2412	0.049	0.003	0.831	0.013	0.0093	363.0	33.6	2
g83	80	0.93	0.979	2300.00	140.00	20.320	1.200	0.5853	4.386	0.404	0.790	0.023	-0.4297	314.3	32.3	1
g84	36	48.50	0.928	24.70	1.80	0.228	0.021	0.9327	1.736	0.124	0.811	0.017	0.0372	101.6	45.2	1
g85	36	23.73	0.957	64.60	1.70	0.576	0.041	0.7449	0.554	0.030	0.847	0.008	0.3872	168.4	86.5	1
g86	47	7.96	1.020	210.40	6.70	1.806	0.099	0.9203	9.950	0.356	0.539	0.033	-0.0297	142.3	63.4	1
g87	80	24.77	0.614	7.54	0.50	0.101	0.004	0.0622	10.881	0.509	0.434	0.013	-0.1641	248.4	27.6	2
g88	80	45.14	0.481	5.42	0.28	0.092	0.004	0.2654	0.144	0.007	0.837	0.008	0.1462	303.8	17.0	2
g89	80	1.54	0.989	790.00	37.00	6.940	0.360	0.8665	0.042	0.005	0.817	0.032	0.4098	-1397.4	808.1	2
g90	80	0.14	0.976	2520.00	140.00	24.000	2.700	0.0624	1.319	0.047	0.806	0.012	0.1469	221.9	109.1	1
g91	60	5.28	0.950	84.00	2.00	0.758	0.027	0.8655	8.403	0.777	0.684	0.039	0.0179	294.0	85.2	2
g92	80	6.21	0.797	10.93	0.66	0.119	0.011	0.0285	9.461	0.877	0.685	0.093	0.6925	135.9	79.3	1
g92	36	5.46	0.800	9.80	1.10	0.106	0.010	0.0736	1.038	0.036	0.821	0.011	-0.0174	153.8	39.9	2
g93	80	9.90	0.969	108.90	2.20	0.963	0.033	0.6884	6.562	0.474	0.596	0.026	0.4049	235.9	103.4	2
g94	36	17.17	0.676	12.55	0.57	0.152	0.011	0.2917	13.123	0.930	0.356	0.020	0.3229	310.6	38.3	2
g95	36	52.96	0.378	3.78	0.20	0.076	0.005	0.1246	9.785	0.680	0.427	0.010	0.3301	298.4	24.0	2
g96	36	128.70	0.465	6.11	0.15	0.102	0.007	0.2069	10.560	0.524	0.449	0.014	0.5149	343.5	24.9	2
g97	80	22.48	0.500	5.65	0.16	0.095	0.005	0.2572	1.379	0.034	0.797	0.011	0.3259	301.9	18.2	2
g98	60	8.89	0.923	80.03	0.92	0.725	0.018	0.4860	0.823	0.059	0.838	0.024	0.4077	279.0	23.3	1
g98	36	6.68	0.988	140.40	3.30	1.215	0.087	0.4071	0.269	0.010	0.842	0.008	0.1306	73.9	247.1	1
g99	60	3.76	0.982	442.00	13.00	3.720	0.140	0.9269	15.601	0.803	0.332	0.016	-0.0790	178.7	264.7	1
g100	60	29.82	0.353	2.90	0.16	0.064	0.003	0.2241	3.205	0.247	0.739	0.046	0.4501	263.2	15.6	2
g101	36	7.91	0.856	32.10	1.80	0.312	0.024	0.3436	2.445	0.114	0.769	0.019	0.1751	282.9	114.6	2
g101	60	3.49	0.904	44.30	2.10	0.409	0.019	0.8722	0.056	0.005	0.839	0.019	0.0177	272.6	66.2	2
g102	80	0.15	1.004	2090.00	220.00	17.900	1.700	0.7026	1.984	0.142	0.767	0.026	0.4719	189.2	8.8	1
g103	36	11.75	0.885	53.60	1.60	0.504	0.036	0.2689	2.537	0.071	0.746	0.021	0.3611	364.7	107.4	2
g103	36	12.97	0.874	42.70	1.20	0.394	0.011	0.3808	6.270	0.472	0.630	0.034	0.4236	346.3	67.9	2
g104	36	17.68	0.721	14.09	0.75	0.160	0.012	0.1174	4.671	0.164	0.697	0.010	-0.0657	281.2	47.5	2
g105	60	29.53	0.813	20.55	0.59	0.214	0.008	0.8936	2.667	0.220	0.795	0.016	0.2087	263.2	22.2	2
g106	80	10.07	0.937	41.70	3.30	0.375	0.031	0.8326	1.179	0.039	0.841	0.011	0.0336	151.5	54.6	2
g107	80	11.19	1.010	98.40	1.40	0.848	0.028	0.7435	0.058	0.003	0.879	0.013	0.1281	218.6	55.4	1
g108	47	0.71	1.588	2092.00	83.00	17.250	1.000	0.7517	6.761	0.549	0.591	0.041	0.4642	56.8	23.9	1
g109	36	10.59	0.670	11.89	0.69	0.148	0.012	0.1912	0.303	0.029	0.839	0.011	0.1147	307.0	53.2	2
g110	80	1.30	0.992	385.00	36.00	3.300	0.320	0.8843	5.621	0.474	0.681	0.058	0.0857	-54.6	96.8	1
g111	36	7.40	0.787	16.60	1.20	0.178	0.015	-0.0029	6.859	0.395	0.585	0.021	0.1853	239.6	83.5	2
g111	47	9.98	0.671	11.63	0.53	0.146	0.008	0.8884	0.123	0.003	0.853	0.009	0.2965	309.6	30.1	2
g112	60	1.89	1.523	941.00	17.00	8.100	0.220	0.7779	17.422	1.244	0.116	0.010	0.3859	163.2	112.2	1
g113	36	82.10	0.078	0.92	0.07	0.057	0.004	-0.1764	6.536	0.641	0.551	0.032	-0.4121	332.6	23.8	2
g114	36	24.28	0.616	12.20	1.20	0.153	0.015	0.8341	3.028	0.101	0.735	0.010	0.0672	367.6	51.8	2
g115	80	20.60	0.861	33.49	0.59	0.330	0.011	0.6735	0.043	0.008	0.895	0.062	0.0027	314.3	32.3	2
g116	60	0.03	1.050	3060.00	680.00	25.100	5.400	0.9809	0.019	0.002	0.829	0.009	-0.0261	0.0	5063.5	1
g117	60	1.21	0.979	801.00	18.00	6.950	0.220	0.5651	15.723	1.211	0.312	0.025	0.2171	0.0	689.0	2
g118	60	0.02	1.075	3270.00	790.00	23.300	4.100	0.9941	1.164	0.084	0.827	0.024	0.2323	188.1	790.2	1
g119	60	0.30	0.718	6170.00	660.00	53.100	5.900	0.9908	0.433	0.013	0.848	0.010	0.1190	255.3	23.8	1
g120	36	26.61	0.325	2.81	0.22	0.064	0.005	0.2222	0.052	0.011	0.814	0.052	-0.0154	271.1	24.1	2
g121	36	6.33	0.977	99.30	3.40	0.859	0.062	0.4913	0.249	0.018	0.828	0.014	0.4056	99.3	64.2	1
g121	60	3.68	1.002	270.80	5.50	2.309	0.069	0.9010	4.270	0.310	0.672	0.027	0.4211	127.8	173.7	1
g122	60	0.04	0.973	2900.00	1900.00	4.100	0.9546	18.868	2.456	0.590	0.180	0.9606	52.3	42.1	1	
g123	36	5.66	0.924	467.00	10.00	4.011	0.290	0.6655	12.771	1.615	0.504	0.063	0.1954	1722.5	477.8	2

g124	36	20.13	0.769	21.60	0.81	0.234	0.017	0.0527	0.005	0.001	0.840	0.010	-0.0429	340.3	55.5	2
g125	36	3.45	0.682	3.33	0.64	0.053	0.007	0.4541	4.444	0.415	0.699	0.044	0.2496	214.7	47.2	2
g125	36	3.55	0.570	6.20	1.30	0.078	0.010	0.9790	7.358	0.276	0.593	0.019	0.1310	107.7	77.6	2
g126	47	0.03	1.017	17800.00	2500.00	152.000	21.000	0.9899	4.149	0.895	0.700	0.240	0.6143	0.0	22298.7	1
g127	60	0.14	0.975	25300.00	5500.00	217.000	47.000	0.9988	3.448	1.546	0.770	0.110	0.3836	265.9	73.6	1
g128	36	6.53	0.807	21.20	1.50	0.225	0.021	0.4924	6.439	0.498	0.596	0.030	0.4586	274.0	81.8	2
g128	60	13.05	0.682	11.40	0.48	0.136	0.005	0.4137	21.524	1.529	0.143	0.010	0.1204	279.0	23.3	2
g129	36	0.52	0.817	15.20	3.90	0.241	0.052	0.7711	5.734	0.427	0.633	0.036	0.2110	280.0	77.4	1
g129	60	0.55	0.905	21.80	5.50	0.290	0.130	0.1580	2.584	0.100	0.766	0.023	0.4988	293.3	451.9	2
g130	36	16.21	0.676	13.24	0.68	0.155	0.012	0.3174	5.388	0.406	0.637	0.031	0.4274	316.7	43.8	2
g131	36	159.00	0.115	0.91	0.06	0.046	0.003	0.1495	11.682	0.368	0.432	0.011	-0.3020	259.9	18.5	2
g132	36	11.25	0.723	15.23	0.81	0.174	0.013	0.2563	0.088	0.018	0.918	0.063	-0.0210	304.5	54.0	2
g133	60	3.54	0.900	40.90	1.20	0.387	0.015	0.7783	5.376	0.462	0.960	0.130	-0.0286	265.9	73.6	2
g134	36	14.77	0.727	16.57	0.70	0.186	0.014	0.1875	4.525	0.307	0.767	0.035	0.4720	319.1	51.0	2

Table DR8. Lower Conglomérat de Valensole (VA03) apatite U-Pb data. $^{206}\text{Pb}_c$ refers to the $^{206}\text{Pb}_c/^{206}\text{Pb}_{\text{total}}$ ratio, where Pb_c is non-radiogenic common Pb. ρ – error correlation of preceding isotope ratio columns. Pb correction type: 1 – array intercept Pb_c correction; 2 – iterative Pb_c correction based on the terrestrial Pb evolution model of Stacey and Kramers (1975). All errors are fully propagated and given at the 2σ level.

Grain	Spot size (μm)	U (ppm)	$^{206}\text{Pb}_c$	207/235	207/235 2σ	206/238	206/238 2σ	ρ	238/206	238/206 2σ	207/206	207/206 2σ	ρ	corrected Age (Ma)	207/206 corrected Age 2σ	Pb correction type
g04	80	10.13	0.841	31.43	0.46	0.315	0.010	0.2961	3.179	0.101	0.729	0.013	0.4358	313.9	37.4	2
g08	36	19.52	0.948	14.93	0.55	0.135	0.010	0.0932	7.413	0.539	0.800	0.037	0.5342	44.6	41.3	1
g09	60	9.56	0.850	27.18	0.61	0.270	0.008	0.1901	3.708	0.103	0.732	0.018	0.2709	256.4	41.4	2
g10	80	4.59	0.888	35.44	0.95	0.337	0.016	0.1148	2.967	0.141	0.762	0.020	0.0393	238.0	57.4	2
g10	36	4.27	0.906	41.10	2.00	0.391	0.031	0.4188	2.558	0.203	0.776	0.044	0.5859	231.7	137.8	2
g12	36	16.86	0.536	7.35	0.44	0.109	0.008	0.1482	9.200	0.694	0.484	0.032	0.4309	316.9	35.9	2
g14	36	2.21	0.676	18.80	2.00	0.218	0.014	0.6308	4.587	0.295	0.603	0.054	0.1333	440.1	93.4	2
g14	36	2.32	0.657	16.30	2.00	0.193	0.018	0.3888	5.181	0.483	0.586	0.067	0.4488	413.5	105.3	2
g15	36	20.00	0.976	11.43	0.47	0.101	0.008	0.0849	9.930	0.749	0.822	0.044	0.5940	15.4	36.5	1
g16	47	162.50	0.137	1.37	0.06	0.061	0.003	0.8277	16.311	0.825	0.163	0.006	-0.5479	332.4	16.8	2
g17	60	0.62	1.011	890.00	150.00	8.200	1.400	0.6643	0.122	0.021	0.850	0.017	0.1739	-222.9	1287.2	1
g19	36	17.07	0.927	19.13	0.59	0.171	0.006	0.4132	5.841	0.201	0.783	0.023	0.6126	80.1	33.5	1
g19	36	17.55	0.918	18.57	0.77	0.169	0.012	0.0822	5.907	0.419	0.776	0.036	0.4411	89.3	50.4	2
g20	60	0.66	0.900	132.80	5.30	1.163	0.051	0.6999	0.860	0.038	0.803	0.025	0.3121	708.1	221.8	2
g21	36	16.64	0.939	31.60	0.84	0.279	0.008	0.7702	3.588	0.107	0.794	0.020	0.3206	109.2	48.1	2
g21	36	17.84	1.009	30.50	1.10	0.261	0.018	0.1829	3.828	0.264	0.848	0.031	0.3617	-15.0	68.2	1
g22	36	9.25	0.638	9.10	0.88	0.118	0.010	0.3503	8.467	0.717	0.563	0.058	0.3826	270.1	58.0	2
g23	60	13.78	0.699	13.71	0.60	0.163	0.005	-0.0404	6.150	0.174	0.614	0.030	0.1659	308.3	39.3	2
g24	80	22.62	0.959	12.61	0.24	0.114	0.004	0.1598	8.741	0.290	0.808	0.015	0.1770	30.5	15.8	1
g25	36	1.28	0.975	469.00	79.00	3.820	0.640	0.8587	0.262	0.044	0.829	0.029	-0.1359	596.0	880.7	2
g26	36	17.32	0.597	8.57	0.44	0.117	0.009	0.1509	8.554	0.629	0.532	0.030	0.3859	296.5	34.9	2
g27	80	28.74	0.932	8.36	0.15	0.078	0.003	0.2157	12.821	0.427	0.787	0.015	0.6970	34.0	10.7	1
g27	36	29.31	0.966	9.46	0.48	0.081	0.006	0.1372	12.361	0.917	0.814	0.046	0.4869	17.6	30.6	1
g28	80	1.05	1.036	966.00	28.00	8.050	0.330	0.8370	0.124	0.005	0.871	0.009	-0.0111	-2225.2	1119.1	1
g29	36	10.45	0.751	17.17	0.98	0.185	0.015	0.7239	5.402	0.438	0.655	0.033	0.2458	290.5	53.5	2
g30	36	33.08	0.456	4.77	0.29	0.082	0.006	0.5360	12.151	0.930	0.418	0.025	0.1525	282.2	26.7	2
g31	60	9.99	0.981	31.83	0.74	0.276	0.008	0.5565	3.630	0.111	0.826	0.018	0.4364	45.7	43.7	1
g32	60	3.28	0.912	55.70	1.50	0.520	0.017	0.1341	1.923	0.063	0.784	0.022	0.6598	289.4	94.4	2
g33	36	4.51	0.998	57.50	2.60	0.494	0.038	0.3561	2.024	0.156	0.839	0.046	-0.0914	7.6	187.2	1
g35	60	0.87	1.041	1123.00	39.00	9.300	0.370	0.9466	0.108	0.004	0.875	0.008	0.0451	-2456.3	1257.6	1
g36	36	21.02	0.569	8.22	0.46	0.117	0.009	0.1849	8.576	0.640	0.510	0.032	0.3784	316.2	37.2	2

g37	80	0.03	0.979	2150.00	260.00	17.900	2.100	0.9680	0.056	0.007	0.826	0.029	-0.0925	2045.0	4302.9	1
g38	80	29.33	0.505	5.60	0.13	0.090	0.003	0.3362	11.136	0.372	0.457	0.011	0.0199	280.4	12.4	2
g39	80	27.53	0.951	13.46	0.19	0.121	0.004	0.4847	8.299	0.275	0.802	0.012	0.5333	37.9	14.1	1
g40	36	24.42	1.008	15.53	0.61	0.131	0.010	0.3299	7.634	0.571	0.847	0.038	0.4795	-6.5	41.4	1
g41	36	5.49	0.627	9.90	1.10	0.128	0.011	0.8477	7.813	0.671	0.556	0.044	0.1878	300.6	50.7	2
g41	36	4.13	0.812	26.10	4.90	0.255	0.046	0.9687	3.922	0.707	0.705	0.065	0.3870	301.1	139.4	2
g42	60	6.06	0.898	42.44	0.73	0.397	0.011	0.3823	2.522	0.070	0.771	0.014	0.4677	254.8	49.8	2
g42	36	7.58	0.940	39.20	2.00	0.363	0.027	0.1898	2.755	0.205	0.797	0.036	0.3729	138.6	107.0	2
g44	36	22.64	0.697	10.65	0.62	0.123	0.009	0.5449	8.137	0.609	0.609	0.036	0.3284	235.4	39.1	2
g45	36	22.43	0.955	14.16	0.42	0.126	0.004	0.6788	7.962	0.241	0.805	0.029	0.4473	36.5	30.6	1
g46	60	97.70	0.234	1.32	0.05	0.040	0.001	0.3526	24.704	0.732	0.237	0.007	-0.0089	196.8	6.3	2
g48	60	5.52	0.954	91.90	2.80	0.815	0.031	0.4747	1.227	0.047	0.815	0.012	0.4085	236.1	92.7	2
g49	80	22.06	0.966	11.26	0.17	0.101	0.003	0.3533	9.891	0.333	0.810	0.014	0.4982	22.3	13.3	2
g49	36	25.96	0.943	10.96	0.42	0.099	0.008	0.6111	10.111	0.787	0.796	0.030	0.4269	36.0	25.0	1
g50	60	8.91	0.811	23.81	0.56	0.244	0.008	0.6112	4.092	0.126	0.703	0.019	0.1114	291.5	39.2	2
g51	36	64.70	0.305	2.83	0.17	0.068	0.005	0.3022	14.641	1.050	0.297	0.016	0.1915	299.1	22.8	2
g53	36	24.18	0.633	9.58	0.47	0.122	0.009	0.4244	8.177	0.608	0.560	0.029	0.2113	282.9	34.8	2
Bg01	80	18.60	0.601	9.19	0.16	0.126	0.004	-0.0158	7.937	0.258	0.536	0.010	0.7402	316.1	14.8	2
Bg03	30	16.23	0.930	80.50	3.70	0.726	0.045	0.8223	1.377	0.085	0.801	0.024	0.4266	318.2	142.7	2
Bg03	60	11.21	0.868	96.70	2.50	0.908	0.042	0.8551	1.101	0.051	0.778	0.010	0.1076	727.4	88.0	2
Bg04	30	19.39	0.610	10.14	0.62	0.131	0.007	0.4086	7.634	0.408	0.543	0.032	0.2443	321.6	36.8	2
Bg05	30	1.73	0.868	61.40	4.70	0.561	0.036	0.3137	1.783	0.114	0.760	0.063	0.5476	460.0	268.8	2
Bg05	60	2.19	0.878	41.00	1.80	0.402	0.022	0.5389	2.488	0.136	0.758	0.032	0.3340	309.1	103.3	2
Bg06	30	37.80	0.545	6.15	0.43	0.089	0.006	0.8400	11.249	0.759	0.488	0.021	0.0668	255.6	22.6	2
Bg07	60	139.80	0.091	0.97	0.02	0.056	0.002	0.1026	17.895	0.480	0.126	0.003	0.3388	319.4	8.6	2
Bg08	80	16.26	0.957	20.26	0.37	0.184	0.006	0.3286	5.435	0.186	0.805	0.013	0.5808	50.5	22.8	2
Bg09	60	0.04	0.722	240.00	250.00	2.700	2.600	0.9804	0.370	0.357	0.620	0.180	-0.7906	0.0	6104.7	1
Bg11	80	29.88	0.939	10.22	0.17	0.095	0.003	0.4401	10.526	0.366	0.790	0.015	0.3770	37.0	13.1	2
Bg12	30	34.80	0.912	9.54	0.39	0.087	0.005	0.5122	11.547	0.613	0.771	0.029	0.4291	49.0	21.1	1
Bg12	60	22.69	0.897	11.47	0.26	0.111	0.005	0.0880	9.033	0.367	0.759	0.019	0.4719	73.2	18.5	1
Bg13	36	0.32	0.908	299.00	22.00	2.780	0.230	0.6600	0.360	0.030	0.807	0.041	0.3680	1467.3	832.1	2
Bg14	30	2.89	0.801	25.60	2.20	0.271	0.020	0.1349	3.690	0.272	0.698	0.059	0.1357	338.7	125.9	2
Bg15	30	10.03	0.657	8.26	0.93	0.101	0.010	0.7838	9.940	0.968	0.576	0.039	0.0846	218.5	37.5	2
Bg15	60	3.89	0.722	13.58	0.87	0.160	0.010	0.6635	6.254	0.372	0.631	0.032	0.0735	280.6	43.6	2
Bg17	60	0.13	1.045	4160.00	350.00	34.600	3.100	0.9836	0.029	0.003	0.871	0.016	0.2367	0.0	5177.1	2
Bg18	60	14.23	0.511	5.52	0.24	0.085	0.003	0.8119	11.710	0.425	0.461	0.013	-0.1386	263.8	13.1	2
Bg19	60	132.70	0.169	1.59	0.03	0.061	0.002	0.3779	16.464	0.407	0.188	0.004	0.2157	317.6	7.9	2
Bg20	30	22.11	0.942	14.77	0.89	0.136	0.011	0.6223	7.348	0.594	0.795	0.045	0.3817	50.5	50.3	1
Bg20	60	23.85	0.928	12.08	0.26	0.115	0.005	0.3453	8.673	0.369	0.789	0.017	0.3534	48.4	17.5	1
Bg21	80	0.18	1.062	1180.00	130.00	9.600	1.000	0.8541	0.104	0.011	0.887	0.026	0.0227	-5889.7	5170.8	2
Bg22	80	6.68	0.778	31.77	0.74	0.338	0.012	0.2802	2.958	0.105	0.687	0.015	0.2226	467.4	44.7	2
Bg23	80	1.02	1.072	132.10	3.80	1.113	0.052	0.2204	0.898	0.042	0.863	0.025	0.2523	-538.2	266.5	2
Bg25	47	0.02	3.741	480.00	480.00	1.200	1.200	-1.0000	0.833	0.833	3.000	3.000	1.0000	0.0	36242.9	2
Bg26	30	20.15	0.951	11.80	0.44	0.104	0.006	0.1280	9.606	0.535	0.802	0.045	0.6060	32.8	38.5	1
Bg26	60	17.19	0.908	12.44	0.31	0.122	0.005	0.2828	8.183	0.348	0.768	0.020	0.5213	72.0	21.3	1
Bg27	30	18.56	0.936	14.59	0.57	0.135	0.007	0.2687	7.429	0.392	0.790	0.039	0.6394	55.4	43.3	1
Bg27	60	18.15	0.942	13.26	0.26	0.126	0.005	0.1394	7.924	0.339	0.795	0.020	0.5283	46.9	22.0	1

Table DR9. Série Grise (BA04) rutile U-Pb data. $^{206}\text{Pb}_c$ refers to the $^{206}\text{Pb}_c/^{206}\text{Pb}_{\text{total}}$ ratio, where Pb_c is non-radiogenic common Pb. ρ – error correlation of preceding isotope ratio columns. ^{207}Pb corrected ages obtained by iterative Pb_c correction based on the terrestrial Pb evolution model of Stacey and Kramers (1975). Errors are fully propagated and given at the 2σ level.

Grain	Spot size (μm)	U (ppm)	$^{206}\text{Pb}_c$	$^{207}\text{Pb}/^{235}\text{U}$	$^{207}\text{Pb}/^{235}\text{U}$ 2σ	$^{206}\text{Pb}/^{238}\text{U}$	$^{206}\text{Pb}/^{238}\text{U}$ 2σ	ρ	$^{238}\text{U}/^{206}\text{Pb}$	$^{238}\text{U}/^{206}\text{Pb}$ 2σ	$^{207}\text{Pb}/^{206}\text{Pb}$	$^{207}\text{Pb}/^{206}\text{Pb}$ 2σ	ρ	^{207}Pb corrected Age (Ma)	^{207}Pb corrected Age 2σ
g1	60	20.61	0.051	1.14	0.16	0.084	0.002	0.3761	11.90	0.34	0.099	0.011	-0.0929	494.4	15.4
g2	60	0.703	0.674	24.90	2.90	0.310	0.023	0.1467	3.23	0.24	0.612	0.058	0.4264	620.5	139.4
g3	60	14.06	0.006	0.61	0.09	0.073	0.002	0.1633	13.76	0.40	0.060	0.008	0.0245	450.0	13.4
g4	60	4.07	0.004	7.82	0.64	0.410	0.013	0.3412	2.44	0.08	0.142	0.009	0.0877	2207.3	74.5
g5	60	1.765	0.305	3.45	0.57	0.086	0.007	0.0946	11.66	0.98	0.300	0.046	0.0672	373.4	43.1
g6	60	13.65	0.015	0.89	0.18	0.087	0.003	0.2539	11.52	0.42	0.070	0.012	-0.0145	528.8	20.5
g7	60	8.13	0.005	8.41	0.80	0.419	0.013	0.3252	2.39	0.07	0.146	0.009	-0.0350	2246.4	75.4
g8	60	10.96	0.136	1.35	0.20	0.062	0.003	-0.0717	16.08	0.78	0.163	0.019	0.3342	337.3	18.4
g9	60	11.08	0.043	0.67	0.11	0.058	0.002	-0.0617	17.18	0.62	0.088	0.014	0.2323	349.5	13.9
g10	60	46.2	0.337	2.48	0.57	0.053	0.004	0.4903	18.83	1.24	0.320	0.039	0.0516	223.1	21.8
g11	60	9.38	0.008	6.01	0.58	0.349	0.008	0.0030	2.86	0.07	0.124	0.009	0.3470	1918.3	49.1
g12	60	1.003	0.777	24.30	4.80	0.267	0.038	0.6247	3.75	0.53	0.681	0.045	0.2742	372.3	106.3
g13	60	4.04	0.305	3.94	0.73	0.098	0.007	0.2134	10.19	0.72	0.302	0.037	0.2971	425.2	40.2
g14	60	0.669	0.900	49.70	4.70	0.471	0.032	0.5574	2.12	0.14	0.775	0.054	0.5768	297.0	199.6
g15	60	23.15	0.009	6.20	0.54	0.358	0.008	0.5755	2.80	0.06	0.128	0.007	-0.2336	1956.0	44.2
g16	60	16.23	0.002	0.45	0.07	0.059	0.003	0.3233	16.92	0.72	0.056	0.007	0.0713	369.4	15.7
g17	60	10.1	0.034	9.82	0.91	0.422	0.009	0.3329	2.37	0.05	0.169	0.010	-0.1220	2203.5	54.4
g18	60	10.04	-0.003	0.46	0.09	0.063	0.002	0.3264	15.85	0.60	0.052	0.009	-0.1438	395.7	15.3
g19	60	3.344	0.881	17.05	1.40	0.161	0.008	0.2283	6.23	0.31	0.749	0.048	0.5462	121.8	62.5
g20	60	3.01	-0.001	6.08	0.67	0.366	0.013	0.2621	2.73	0.10	0.123	0.011	0.2603	2012.2	75.4
g21	60	3.65	0.231	21.20	2.60	0.458	0.022	0.6529	2.18	0.10	0.322	0.025	-0.2583	1944.8	116.9
g22	60	9.27	0.158	23.10	1.90	0.545	0.019	0.7135	1.83	0.06	0.299	0.013	0.0457	2434.3	100.4
g23	60	1.811	0.550	8.60	1.00	0.126	0.008	0.2209	7.92	0.53	0.497	0.053	0.3045	355.9	56.4
g24	60	0.286	0.665	72.10	9.50	0.770	0.064	0.6272	1.30	0.11	0.663	0.068	0.3251	1479.7	359.9
g25	60	23.43	-0.009	5.87	0.45	0.363	0.007	0.3010	2.75	0.05	0.116	0.005	0.2601	2013.4	38.4
g26	60	1.809	0.269	2.92	0.77	0.081	0.008	0.1035	12.36	1.24	0.271	0.058	0.4287	370.3	51.1
g27	60	1.632	0.639	16.80	2.60	0.201	0.020	0.9197	4.98	0.50	0.574	0.052	0.1225	451.1	90.4
g28	60	12.46	0.205	3.04	1.30	0.096	0.006	0.1372	10.43	0.70	0.223	0.036	0.3357	473.5	40.3
g30	60	29.2	0.056	1.31	0.13	0.090	0.002	0.1624	11.06	0.28	0.104	0.007	0.1569	527.7	14.0
g31	60	3.25	0.829	40.20	3.90	0.416	0.022	0.4869	2.40	0.13	0.727	0.034	0.4435	443.6	111.3
g32	60	8.03	0.000	6.46	0.57	0.371	0.011	0.3724	2.69	0.08	0.126	0.007	0.1053	2034.8	62.3
g33	60	1.263	0.594	12.10	1.90	0.152	0.015	0.4009	6.58	0.65	0.534	0.056	0.4199	385.8	75.0
g34	60	7.64	0.654	17.07	1.40	0.208	0.008	0.2012	4.82	0.17	0.586	0.029	0.5904	446.3	48.8
g35	60	1.75	0.976	186.70	15.00	1.603	0.060	0.7919	0.62	0.02	0.836	0.032	0.2239	246.5	411.7
g36	60	0.925	0.880	54.50	5.40	0.494	0.024	0.2109	2.02	0.10	0.764	0.046	-0.0026	370.1	176.6
g37	60	13.84	0.013	0.53	0.08	0.058	0.003	0.1546	17.21	0.86	0.064	0.010	0.2417	359.5	18.1
g38	60	55.6	0.001	0.81	0.07	0.098	0.002	0.3314	10.26	0.24	0.061	0.003	0.1126	599.2	14.0
g39	60	21.52	0.008	0.69	0.07	0.080	0.003	-0.0005	12.55	0.39	0.064	0.006	0.4336	490.5	15.4
g40	60	6.03	0.007	7.27	0.66	0.385	0.011	0.2135	2.60	0.07	0.136	0.009	0.0687	2084.0	63.5
g41	60	6.5	0.081	1.01	0.32	0.061	0.004	0.1582	16.47	1.06	0.119	0.028	0.0358	349.8	25.6
g42	60	5.49	0.011	0.70	0.14	0.079	0.003	0.1174	12.59	0.48	0.066	0.013	0.0405	487.2	19.6
g43	60	3.86	0.159	2.04	0.44	0.082	0.006	0.2647	12.22	0.82	0.184	0.028	0.1509	428.9	33.1
g44	60	13.23	0.672	16.50	1.30	0.200	0.006	0.7989	5.00	0.16	0.598	0.025	-0.1536	409.8	40.8
g45	60	6.18	0.003	5.50	0.51	0.342	0.008	0.0730	2.93	0.07	0.118	0.008	0.2872	1889.9	48.8
g46	60	10.38	0.123	1.47	0.23	0.071	0.003	0.1419	14.04	0.57	0.154	0.018	0.1540	390.3	18.4
g47	60	0.91	0.957	72.20	0.00	0.642	0.000	0.7537	1.56	0.01	0.813	0.010	0.1221	175.7	41.1
g48	60	8.19	-0.009	5.56	0.47	0.353	0.009	0.3176	2.83	0.07	0.112	0.006	0.1575	1964.7	50.7

g49	60	2.32	0.434	6.51	0.79	0.124	0.008	0.1900	8.05	0.50	0.407	0.046	0.5008	438.0	50.7
g50	60	7.31	0.363	5.00	0.52	0.107	0.006	0.1322	9.36	0.53	0.349	0.026	0.3427	424.3	31.5
g51	60	8.43	0.254	15.60	1.80	0.349	0.014	0.5544	2.87	0.11	0.311	0.017	-0.0301	1492.5	69.6
g52	60	14.47	-0.004	0.60	0.08	0.078	0.003	0.0421	12.85	0.50	0.054	0.006	0.1968	484.8	18.7
g53	60	14.31	0.436	7.62	0.82	0.129	0.008	0.8232	7.74	0.46	0.409	0.022	-0.2068	453.8	34.2
g54	60	0.339	0.972	71.60	8.40	0.652	0.059	0.3322	1.53	0.14	0.821	0.087	0.5069	118.2	455.0
g55	60	0.268	0.056	6.80	2.30	0.349	0.042	0.0053	2.87	0.34	0.161	0.067	0.1269	1836.0	261.7
g56	60	1.867	0.025	0.87	0.32	0.085	0.006	-0.1002	11.71	0.86	0.078	0.031	0.3912	515.6	42.0
g57	60	15.01	0.179	2.94	0.30	0.102	0.004	0.2743	9.77	0.37	0.203	0.016	0.1602	520.7	22.9
g58	60	0.665	0.878	18.50	2.40	0.193	0.018	-0.0021	5.18	0.48	0.748	0.095	0.0326	150.4	146.7
g59	60	3.4	0.295	3.72	0.49	0.092	0.005	0.0049	10.89	0.57	0.293	0.031	0.0059	404.4	30.0
g60	60	2.494	0.181	3.67	0.61	0.130	0.007	0.1608	7.72	0.42	0.210	0.028	0.2698	649.5	43.5
g61	60	2.185	0.284	3.64	0.54	0.096	0.008	0.1823	10.37	0.82	0.285	0.040	0.1073	430.5	44.2
g62	60	0.603	0.316	4.90	1.50	0.117	0.013	0.2667	8.55	0.95	0.314	0.091	0.1422	496.1	96.0
g63	60	3.83	0.023	0.84	0.18	0.081	0.004	-0.0831	12.39	0.64	0.076	0.017	0.2865	489.0	26.9
g64	60	53.9	0.003	0.62	0.06	0.075	0.002	0.2694	13.28	0.28	0.059	0.004	0.0407	466.8	10.0
g65	60	7.28	-0.007	6.05	0.56	0.363	0.015	-0.2060	2.75	0.11	0.118	0.007	0.5421	2008.0	83.9
g66	60	10.1	0.093	11.38	0.97	0.401	0.012	0.5617	2.49	0.07	0.205	0.010	0.0045	2000.3	64.4
g67	60	1.059	0.084	5.48	0.93	0.255	0.015	0.0121	3.92	0.23	0.158	0.025	0.2322	1353.7	87.4
g68	60	1.494	-0.009	6.23	0.75	0.379	0.018	0.1361	2.64	0.13	0.121	0.013	0.1374	2088.2	104.1
g69	60	5.77	0.099	1.22	0.21	0.068	0.004	0.1434	14.62	0.83	0.134	0.021	0.1282	385.7	24.2
g70	60	29.51	0.068	0.90	0.09	0.061	0.002	0.0571	16.45	0.51	0.108	0.009	0.3850	355.3	11.6
g71	60	2.58	0.170	1.71	0.38	0.072	0.006	0.1751	13.81	1.09	0.191	0.040	0.1718	376.3	36.5
g72	60	36.08	-0.003	1.84	0.15	0.184	0.004	0.2495	5.45	0.12	0.073	0.004	0.1861	1089.8	22.7

Table DR10. Grès de Senez (BA02) zircon U-Pb data. C = core, r = rim. Spot size 35 µm. ρ – error correlation of preceding isotope ratio columns. Discordance is calculated from $(([{}^{207}\text{Pb} / {}^{206}\text{Pb} \text{ age}] - [{}^{206}\text{Pb} / {}^{238}\text{U} \text{ age}]) / [{}^{207}\text{Pb} / {}^{206}\text{Pb} \text{ age}]) * 100$; ages which fail by > 20% or < -5% are rejected. Errors are fully propagated and given at the 2σ level.

Grain	U (ppm)	207/235	207/235 2σ	206/238	206/238 2σ	ρ	238/206	238/206 2σ	207/206	207/206 2σ	ρ	206/238	206/238 Age	207/235	207/235 Age	206/207	206/207 Age	206/207 Age 2σ	% Disc.
1r	441.4	0.510	0.026	0.0661	0.0007	0.3678	15.14	0.17	0.056	0.002	0.0302	412.3	4.6	418.4	21.3	452.4	18.6	9	
2c	419.0	0.828	0.044	0.1003	0.0014	0.4692	9.97	0.14	0.060	0.003	0.1031	616.2	8.6	612.5	32.5	585.4	24.6	-5	
2r	370.8	0.682	0.038	0.0850	0.0010	0.5244	11.77	0.13	0.058	0.003	-0.2621	525.6	6.0	528.0	29.4	541.1	24.1	3	
3c	85.2	0.956	0.055	0.1129	0.0016	0.2693	8.86	0.13	0.061	0.003	0.2110	689.6	9.8	681.2	39.2	646.3	30.6	-7	
3r	211.7	0.959	0.050	0.1112	0.0014	0.0856	8.99	0.11	0.062	0.003	0.3667	679.7	8.6	682.8	35.6	670.7	29.3	-1	
4r	725.0	0.359	0.021	0.0425	0.0010	0.5070	23.54	0.53	0.062	0.003	0.1985	268.2	6.1	311.5	18.2	674.1	29.4	60	
5c	217.5	3.908	0.200	0.2846	0.0035	0.2446	3.51	0.04	0.098	0.004	0.2769	1614.5	19.9	1615.3	82.7	1588.3	64.8	-2	
6c	112.4	12.890	0.650	0.5158	0.0062	0.5532	1.94	0.02	0.180	0.007	0.1399	2681.3	32.2	2671.6	134.7	2654.7	104.6	-1	
7r	425.0	4.810	0.390	0.1980	0.0094	0.7140	5.05	0.24	0.177	0.007	0.2526	1164.6	55.3	1786.6	144.9	2623.1	105.3	56	
8r	1192.0	0.634	0.032	0.0678	0.0011	0.3567	14.75	0.24	0.067	0.003	0.5460	422.9	6.9	498.6	25.2	834.7	33.7	49	
9r	320.4	0.397	0.022	0.0536	0.0007	0.2256	18.66	0.24	0.053	0.002	0.1978	336.6	4.3	339.5	18.8	324.5	14.7	-4	
10r	121.9	2.798	0.140	0.2358	0.0026	0.3855	4.24	0.05	0.086	0.004	0.1646	1364.8	15.0	1355.0	67.8	1329.2	54.3	-3	
11r	1199.0	0.420	0.021	0.0527	0.0007	0.2770	18.99	0.27	0.057	0.002	0.4521	330.9	4.6	355.7	17.8	503.5	20.2	34	
12r	228.0	3.574	0.190	0.2368	0.0053	0.8369	4.22	0.09	0.109	0.004	-0.0246	1370.0	30.7	1543.8	82.1	1779.4	70.3	23	
13c	634.0	0.511	0.027	0.0655	0.0011	0.6471	15.27	0.26	0.057	0.002	0.0679	408.8	6.9	419.1	22.1	495.4	20.8	17	
13r	818.0	0.589	0.030	0.0696	0.0014	0.1566	14.37	0.29	0.062	0.003	0.6707	433.7	8.7	470.2	24.0	656.8	28.8	34	
14r	446.0	0.364	0.020	0.0483	0.0006	0.3933	20.69	0.27	0.055	0.002	0.0397	304.3	4.0	315.2	17.3	391.8	17.3	22	
15c	184.2	0.338	0.020	0.0486	0.0007	0.1689	20.60	0.30	0.050	0.003	0.2083	305.6	4.5	295.7	17.5	195.0	9.7	-57	
15r	387.8	0.359	0.019	0.0495	0.0008	0.3153	20.19	0.31	0.052	0.002	0.1908	311.6	4.8	311.6	16.5	276.6	11.7	-13	
16c	83.1	0.852	0.048	0.1027	0.0014	0.1731	9.74	0.13	0.060	0.003	0.2016	630.2	8.6	625.7	35.3	600.0	28.0	-5	
16r	313.8	0.633	0.033	0.0813	0.0010	0.3381	12.30	0.14	0.056	0.002	0.0746	503.8	5.9	498.0	26.0	464.2	19.8	-9	
17r	730.0	0.626	0.033	0.0775	0.0010	0.4470	12.91	0.17	0.059	0.003	0.0991	481.1	6.2	493.6	26.0	559.7	23.8	14	

18c	215.7	1.372	0.077	0.1445	0.0036	0.7295	6.92	0.17	0.069	0.003	0.0683	870.1	21.7	877.0	49.2	907.7	38.0	4
18r	495.0	1.418	0.072	0.1425	0.0024	0.5327	7.02	0.12	0.073	0.003	0.2914	858.8	14.5	896.5	45.5	1000.0	41.4	14
19r	447.0	0.556	0.029	0.0727	0.0009	0.3291	13.75	0.18	0.055	0.002	0.2060	452.5	5.8	448.9	23.4	412.2	17.2	-10
20r	396.0	0.743	0.039	0.0927	0.0012	0.4070	10.79	0.14	0.058	0.002	0.0521	571.5	7.4	564.2	29.6	526.0	21.8	-9
21c	365.0	0.817	0.043	0.0984	0.0012	0.4736	10.16	0.12	0.060	0.003	0.0057	605.0	7.4	606.4	31.9	610.8	25.4	1
21r	391.9	0.828	0.043	0.0979	0.0012	0.3413	10.21	0.13	0.062	0.003	0.2347	602.1	7.4	612.5	31.8	667.2	28.1	10
22r	566.0	0.457	0.028	0.0439	0.0009	0.5483	22.78	0.44	0.077	0.003	0.2455	277.0	5.4	382.2	23.4	1123.8	49.6	75
23r	97.0	1.307	0.079	0.1304	0.0017	-0.0423	7.67	0.10	0.073	0.004	0.3721	790.1	10.3	848.8	51.3	1014.0	52.8	22
24c	161.4	0.745	0.043	0.0905	0.0013	0.3756	11.05	0.16	0.059	0.003	0.0665	558.5	8.0	565.3	32.6	567.1	26.9	2
25r	281.9	1.160	0.061	0.1279	0.0016	0.2944	7.82	0.10	0.066	0.003	0.1415	775.9	9.7	782.0	41.1	800.0	34.0	3
26r	420.1	1.708	0.090	0.1742	0.0026	0.6246	5.74	0.09	0.072	0.003	-0.0085	1035.2	15.5	1011.5	53.3	980.3	39.6	-6
27c	133.5	1.149	0.061	0.1300	0.0017	0.1628	7.69	0.10	0.065	0.003	0.3149	787.9	10.3	776.8	41.2	761.3	34.2	-3
28c	384.0	0.753	0.040	0.0925	0.0011	0.4407	10.81	0.13	0.058	0.002	0.0200	570.5	6.8	570.0	30.3	533.5	22.0	-7
28r	445.4	0.760	0.039	0.0945	0.0012	0.2767	10.58	0.13	0.058	0.002	0.1928	582.2	7.4	574.0	29.5	529.8	21.9	-10
29r	187.4	3.267	0.170	0.2591	0.0032	0.4525	3.86	0.05	0.091	0.004	0.0885	1485.2	18.3	1473.2	76.7	1446.6	58.8	-3
30c	100.4	1.693	0.090	0.1719	0.0022	0.4013	5.82	0.07	0.072	0.003	0.0730	1022.6	13.1	1005.9	53.5	971.7	42.1	-5
30r	38.8	1.484	0.091	0.1485	0.0024	0.3354	6.73	0.11	0.074	0.004	0.0573	892.5	14.4	923.9	56.7	1038.7	56.2	14
31r	170.4	6.310	0.320	0.3714	0.0048	0.4886	2.69	0.03	0.123	0.005	0.1725	2036.0	26.3	2019.8	102.4	1998.7	81.3	-2
32r	545.0	3.566	0.180	0.2662	0.0036	0.5720	3.76	0.05	0.098	0.004	0.1763	1521.5	20.6	1542.0	77.8	1588.3	63.1	4
33r	211.8	0.853	0.045	0.0987	0.0011	0.2948	10.13	0.11	0.063	0.003	0.1028	606.7	6.8	626.3	33.0	708.2	29.2	14
34c	202.8	0.872	0.047	0.1044	0.0016	0.4404	9.58	0.15	0.060	0.003	0.1773	640.1	9.8	636.7	34.3	614.4	26.5	-4
34r	307.8	0.849	0.045	0.1017	0.0012	0.3121	9.83	0.12	0.061	0.003	0.1769	624.4	7.4	624.1	33.1	625.1	25.8	0
35r	170.2	0.562	0.031	0.0709	0.0010	0.3112	14.10	0.20	0.058	0.003	0.1675	441.6	6.2	452.8	25.0	514.6	23.2	14
35c	561.4	0.831	0.043	0.0993	0.0012	0.3968	10.08	0.12	0.061	0.003	0.1672	610.0	7.4	614.2	31.8	625.1	25.8	2
36r	436.0	0.605	0.031	0.0742	0.0013	0.4729	13.48	0.24	0.061	0.003	0.3614	461.4	8.1	480.4	24.6	639.2	27.2	28
36c	1094.0	0.655	0.033	0.0770	0.0010	0.5047	12.99	0.17	0.062	0.003	0.1148	478.1	6.2	511.6	25.8	674.1	27.2	29
37r	513.0	0.664	0.036	0.0821	0.0015	0.6102	12.18	0.22	0.058	0.002	0.0759	508.6	9.3	517.1	28.0	541.1	22.3	6
38r	400.0	0.791	0.041	0.0967	0.0013	0.4432	10.34	0.14	0.059	0.002	0.1610	595.0	8.0	591.7	30.7	581.8	23.5	-2
39r	245.7	4.188	0.210	0.2977	0.0035	0.4629	3.36	0.04	0.103	0.004	0.1440	1679.9	19.8	1671.7	83.8	1669.9	66.8	-1
40c	551.0	0.797	0.052	0.0950	0.0013	0.4450	10.53	0.14	0.060	0.003	0.1678	585.0	8.0	595.1	38.8	607.2	33.3	4
40r	637.8	0.734	0.037	0.0919	0.0012	0.3698	10.88	0.14	0.058	0.002	0.3265	566.8	7.4	558.9	28.2	539.2	21.3	-5
41r	461.0	0.577	0.030	0.0755	0.0010	0.0618	13.24	0.18	0.055	0.002	0.4659	469.3	6.2	462.5	24.0	416.3	17.4	-13
42r	305.0	0.566	0.030	0.0705	0.0011	0.4078	14.18	0.22	0.059	0.003	0.1406	439.2	6.9	455.4	24.1	559.7	23.8	22
43c	64.2	2.090	0.120	0.1989	0.0030	0.3471	5.03	0.08	0.077	0.004	0.1457	1169.4	17.6	1145.5	65.8	1118.6	50.9	-5
44r	169.0	3.912	0.200	0.2834	0.0042	0.5917	3.53	0.05	0.101	0.004	0.0967	1608.5	23.8	1616.2	82.6	1638.9	66.7	2
45c	58.0	6.520	0.330	0.3786	0.0053	0.4185	2.64	0.04	0.126	0.005	0.4086	2069.7	29.0	2048.6	103.7	2042.9	81.1	-1
46c	241.7	1.022	0.130	0.1072	0.0019	0.5997	9.33	0.17	0.069	0.007	-0.3592	656.5	11.6	714.9	90.9	907.7	93.0	28
46r	310.9	0.895	0.049	0.1051	0.0015	0.4812	9.51	0.14	0.061	0.003	0.1257	644.2	9.2	649.1	35.5	646.3	28.5	0
47r	198.3	0.842	0.045	0.0993	0.0012	0.2473	10.07	0.12	0.063	0.003	0.2041	610.3	7.4	620.2	33.1	704.9	31.4	13
48c	361.1	3.714	0.190	0.2519	0.0038	0.6140	3.97	0.06	0.107	0.004	0.1440	1448.3	21.8	1574.4	80.5	1748.9	68.6	17
48r	485.3	0.611	0.033	0.0721	0.0010	0.5486	13.86	0.19	0.061	0.003	-0.1064	449.0	6.2	484.2	26.2	649.8	28.6	31
49c	225.6	1.685	0.089	0.1679	0.0026	0.4570	5.96	0.09	0.073	0.003	0.2298	1000.5	15.5	1002.9	53.0	1005.6	41.5	1
49r	362.7	5.560	0.330	0.2841	0.0077	0.8719	3.52	0.10	0.144	0.006	-0.4154	1612.0	43.7	1909.9	113.4	2274.7	94.8	29
50r	601.6	0.549	0.029	0.0670	0.0010	0.3751	14.93	0.21	0.061	0.003	0.3615	418.1	6.0	444.3	23.5	635.7	26.1	34
51c	265.8	1.009	0.053	0.1141	0.0019	0.3804	8.76	0.15	0.065	0.003	0.2367	696.5	11.6	708.4	37.2	771.1	32.1	10
51r	309.9	0.811	0.043	0.0951	0.0013	0.2218	10.52	0.14	0.062	0.003	0.2671	585.6	8.0	603.0	32.0	684.4	30.8	14
52r	778.0	0.848	0.043	0.1018	0.0013	0.4617	9.82	0.13	0.061	0.002	0.2978	624.9	8.0	623.6	31.6	627.9	24.8	0
53c	89.7	5.420	0.280	0.3425	0.0050	0.5106	2.92	0.04	0.116	0.005	0.2165	1898.7	27.7	1888.0	97.5	1890.8	76.8	0
54c	24.0	2.975	0.170	0.2441	0.0044	0.3207	4.10	0.07	0.089	0.004	0.1385	1408.0	25.4	1401.3	80.1	1404.2	67.8	0
55r	956.0	0.344	0.018	0.0479	0.0007	0.5434	20.87	0.31	0.053	0.002	0.0721	301.7	4.5	300.5	15.7	309.8	13.0	3
56c	155.3	11.340	0.570	0.4659	0.0062	0.4053	2.15	0.03	0.174	0.007	0.2690	2465.6	32.8	2551.5	128.3	2597.5	102.9	5
56r	594.0	5.320	0.280	0.2968	0.0064	0.9820	3.37	0.07	0.130	0.005	-0.0483	1675.4	36.1	1872.1	98.5	2103.4	82.3	20
57c	404.1	8.100	0.410	0.3902	0.0050	0.6109	2.56	0.03	0.151	0.006	0.2768	2123.8	27.2	2242.2	113.5	2360.7	92.1	10
58c	344.0	4.510	0.230	0.3090	0.0039	0.6434	3.24	0.04	0.104	0.004	-0.0183	1735.8	21.9	1732.8	88.4	1702.0	68.5	-2

58r	411.1	4.621	0.230	0.3137	0.0039	0.5671	3.19	0.04	0.107	0.004	0.1877	1758.9	21.9	1753.1	87.3	1748.9	67.0	-1
59c	453.8	0.388	0.021	0.0525	0.0007	0.3010	19.04	0.26	0.054	0.002	0.1746	330.0	4.5	332.8	18.0	358.5	16.0	8
59r	582.4	0.390	0.021	0.0533	0.0008	0.4361	18.76	0.26	0.054	0.002	0.1154	334.8	4.7	334.0	18.0	354.3	15.2	5
60r	146.6	0.804	0.045	0.0959	0.0014	0.3798	10.43	0.15	0.060	0.003	0.1252	590.3	8.6	599.1	33.5	614.4	26.5	4
61r	501.1	5.243	0.270	0.3313	0.0049	0.1996	3.02	0.04	0.115	0.005	0.4715	1844.7	27.3	1859.6	95.8	1881.5	75.2	2
62r	390.0	0.521	0.028	0.0628	0.0011	0.4258	15.92	0.28	0.062	0.003	0.1342	392.6	6.9	425.8	22.9	670.7	29.3	41
63r	893.0	0.676	0.035	0.0840	0.0011	1.0000	11.90	0.16	0.058	0.002	0.0846	520.0	6.8	524.4	27.1	529.8	21.0	2
64r	185.4	0.604	0.033	0.0765	0.0011	0.2486	13.07	0.19	0.058	0.003	0.2378	475.3	6.8	479.8	26.2	522.2	23.5	9
65c	98.0	0.393	0.038	0.0517	0.0010	0.2384	19.34	0.37	0.055	0.005	0.1303	325.0	6.3	336.6	32.5	424.4	34.5	23
65r	404.0	0.396	0.034	0.0513	0.0007	0.2294	19.50	0.27	0.058	0.004	0.1665	322.3	4.4	338.7	29.1	526.0	35.4	39
66c	223.0	2.123	0.110	0.1950	0.0027	0.4914	5.13	0.07	0.079	0.003	0.2232	1148.4	15.9	1156.3	59.9	1182.1	47.6	3
67r	411.0	2.686	0.140	0.2278	0.0030	0.4885	4.39	0.06	0.087	0.004	0.2966	1323.0	17.4	1324.6	69.0	1364.9	54.8	3
68c	318.1	0.827	0.043	0.0996	0.0013	0.3548	10.04	0.13	0.061	0.003	0.2519	612.1	8.0	611.9	31.8	625.1	25.8	2
68r	212.4	0.808	0.043	0.0971	0.0015	0.4864	10.30	0.16	0.061	0.003	0.0519	597.4	9.2	601.3	32.0	628.6	26.9	5
69r	335.0	0.806	0.048	0.0947	0.0021	0.5156	10.56	0.23	0.067	0.003	0.1726	583.3	12.9	600.2	35.7	822.2	42.0	29
70r	95.7	0.707	0.043	0.0863	0.0013	0.1587	11.59	0.17	0.060	0.003	0.2515	533.6	8.0	543.0	33.0	607.2	31.3	12
71c	604.0	5.760	0.310	0.3074	0.0067	0.8983	3.25	0.07	0.136	0.005	-0.0967	1727.9	37.7	1940.4	104.4	2180.7	86.4	21
72c	404.0	7.650	0.380	0.3526	0.0046	0.4530	2.84	0.04	0.159	0.006	0.2847	1947.0	25.4	2190.7	108.8	2446.1	95.3	20
72r	308.0	2.006	0.120	0.1301	0.0032	0.8535	7.69	0.19	0.113	0.005	-0.4040	788.4	19.4	1117.5	66.9	1848.2	78.5	57
73r	686.0	0.529	0.029	0.0685	0.0010	0.5061	14.60	0.21	0.057	0.002	0.1673	427.2	6.2	431.1	23.6	495.4	20.8	14
74c	628.0	1.002	0.051	0.1160	0.0014	0.3867	8.62	0.10	0.063	0.003	0.1864	707.5	8.5	704.8	35.9	708.2	29.2	0
74r	281.3	1.023	0.054	0.1171	0.0017	0.4358	8.54	0.12	0.064	0.003	0.1567	713.9	10.4	715.4	37.8	725.0	30.8	2
75r	286.2	1.210	0.063	0.1324	0.0018	0.5427	7.55	0.10	0.067	0.003	0.0704	801.5	10.9	805.2	41.9	834.7	33.7	4
76c	173.7	4.815	0.240	0.3208	0.0039	0.4560	3.12	0.04	0.110	0.004	0.2330	1793.6	21.8	1787.5	89.1	1801.1	72.0	0
77r	115.2	0.712	0.040	0.0869	0.0014	0.1491	11.51	0.19	0.061	0.003	0.3087	537.2	8.7	545.9	30.7	621.5	29.8	14
78r	226.7	0.865	0.046	0.1011	0.0014	0.3266	9.89	0.14	0.063	0.003	0.2182	620.9	8.6	632.8	33.7	708.2	31.5	12
79r	307.7	0.944	0.050	0.0800	0.0013	0.4162	12.50	0.20	0.087	0.004	0.2558	496.1	8.1	675.0	35.8	1349.4	57.7	63

Table DR11. Molasse Rouge (BA03) zircon U-Pb data. C = core, r = rim. Spot size 35 µm. ρ – error correlation of preceding isotope ratio columns. Discordance is calculated from $(([{}^{207}\text{Pb}/{}^{206}\text{Pb} \text{ age}] - [{}^{206}\text{Pb}/{}^{238}\text{U} \text{ age}])/[{}^{207}\text{Pb}/{}^{206}\text{Pb} \text{ age}]) * 100$; ages which fail by > 20% or < -5% are rejected. Errors are fully propagated and given at the 2σ level.

Grain	U (ppm)	207/235	207/235 2σ	206/238	206/238 2σ	ρ	238/206	238/206 2σ	207/206	207/206 2σ	ρ	206/238	206/238 Age	207/235	207/235 Age	207/235 Age 2σ	206/207	206/207 Age	206/207 Age 2σ	% Disc.
2r	242.9	0.344	0.220	0.0476	0.0041	0.2712	20.90	0.32	0.054	0.007	-0.2872	299.8	25.8	300.2	192.0	395.9	232.0	24		
2c	174.3	0.327	0.210	0.0458	0.0040	0.1762	12.95	0.18	0.081	0.010	0.1462	288.9	25.2	287.3	184.5	379.4	224.0	24		
3r	362.0	0.549	0.350	0.0723	0.0062	0.1234	21.72	0.36	0.052	0.006	0.1547	450.2	38.6	444.3	283.3	537.3	313.9	16		
3c	565.0	0.796	0.510	0.0979	0.0084	0.4578	13.80	0.19	0.057	0.007	0.3208	602.1	51.7	594.6	380.9	653.3	383.0	8		
4c	1321.0	0.348	0.220	0.0488	0.0042	0.2805	10.14	0.16	0.060	0.007	0.1250	307.0	26.4	303.5	191.7	389.3	228.8	21		
5c	75.6	6.880	4.500	0.3841	0.0330	0.3207	20.50	0.26	0.053	0.006	0.2280	2095.4	180.0	2096.1	1371.0	2185.8	1279.2	4		
6c	269.0	0.345	0.220	0.0479	0.0042	0.1081	2.57	0.04	0.134	0.015	0.1414	301.4	26.4	301.0	191.9	395.9	232.0	24		
6r	2640.0	0.350	0.230	0.0488	0.0043	0.1264	20.43	0.30	0.054	0.007	0.2614	307.2	27.1	304.7	200.2	337.3	196.6	9		
7c	498.0	0.354	0.220	0.0494	0.0042	0.2454	19.90	0.26	0.052	0.006	0.2688	310.6	26.4	307.6	191.3	387.6	228.0	20		
8c	1421.0	0.392	0.260	0.0541	0.0048	0.6105	20.66	0.29	0.053	0.006	0.1757	339.5	30.1	335.5	222.8	428.4	247.5	21		
9c	204.7	1.209	0.780	0.1341	0.0120	0.0240	17.85	0.25	0.054	0.006	0.1325	811.2	72.6	804.7	519.2	904.7	523.0	10		
10c	471.9	0.386	0.250	0.0526	0.0045	-0.0675	7.45	0.10	0.067	0.008	0.2575	330.3	28.3	331.1	214.7	436.4	259.0	24		
10r	216.0	0.383	0.250	0.0530	0.0046	0.1229	19.09	0.24	0.055	0.006	0.3996	333.0	28.9	329.2	214.9	416.3	241.8	20		
11c	669.1	0.383	0.240	0.0527	0.0046	0.1173	19.00	0.32	0.055	0.007	0.2602	331.3	28.9	328.9	206.4	404.1	236.0	18		
12c	101.8	0.377	0.240	0.0526	0.0045	0.1109	18.90	0.26	0.053	0.006	0.2375	330.7	28.3	324.8	206.8	391.8	230.0	16		
13c	308.0	16.060	10.000	0.5349	0.0460	0.4977	19.11	0.33	0.054	0.007	0.1703	2762.1	237.5	2880.4	1793.5	3031.7	1735.5	9		
13r	219.3	13.700	9.300	0.5254	0.0460	0.7769	1.89	0.02	0.222	0.025	0.1184	2722.0	238.3	2729.2	1852.7	2813.9	1701.1	3		
14c	763.0	0.345	0.220	0.0480	0.0041	0.3216	1.89	0.03	0.200	0.023	-0.3057	302.2	25.8	301.2	191.9	387.6	228.0	22		
15c	3118.0	0.544	0.390	0.0626	0.0053	0.5991	21.03	0.26	0.054	0.006	0.0710	391.1	33.1	441.1	316.2	777.6	501.7	50		

16c	1011.0	0.420	0.300	0.0529	0.0046	0.1896	16.26	0.24	0.071	0.008	0.5515	332.5	28.9	356.2	254.3	585.4	373.9	43
17c	509.0	0.375	0.240	0.0509	0.0043	0.4716	19.04	0.26	0.064	0.007	0.2460	319.7	27.0	323.4	206.9	432.4	257.1	26
18c	301.0	0.714	0.470	0.0878	0.0074	0.0827	20.04	0.27	0.056	0.006	-0.0356	542.5	45.7	547.1	360.1	533.5	321.4	-2
19c	308.0	0.349	0.230	0.0488	0.0042	0.0520	11.61	0.15	0.060	0.007	0.2754	307.4	26.4	304.1	200.3	227.2	134.4	-35
19r	380.0	0.360	0.230	0.0486	0.0041	0.1906	20.65	0.27	0.051	0.006	0.2618	305.9	25.8	312.2	199.5	324.5	190.2	6
20c	160.1	0.363	0.240	0.0492	0.0042	0.0665	20.93	0.27	0.053	0.006	0.2108	309.6	26.4	314.5	207.9	258.8	156.1	-20
20r	144.4	0.397	0.290	0.0527	0.0043	0.3219	20.58	0.31	0.053	0.006	0.2069	331.1	27.0	339.5	248.0	358.5	253.7	8
21c	80.4	0.414	0.270	0.0558	0.0046	-0.1486	20.16	0.31	0.065	0.008	-0.1869	350.0	28.9	351.8	229.4	311.6	189.6	-12
22c	251.7	0.603	0.390	0.0759	0.0063	0.2609	18.87	0.27	0.055	0.006	0.3874	471.6	39.1	479.1	309.9	412.2	247.3	-14
22r	229.2	0.610	0.400	0.0764	0.0064	0.3577	13.75	0.18	0.057	0.007	0.2367	474.6	39.8	483.6	317.1	448.4	272.7	-6
23c	1358.0	0.474	0.310	0.0572	0.0049	0.4905	13.55	0.18	0.058	0.007	0.2282	358.4	30.7	393.9	257.6	495.4	295.0	28
23r	715.0	0.382	0.250	0.0518	0.0043	0.0018	17.82	0.29	0.058	0.007	0.4852	325.6	27.0	328.5	215.0	227.2	143.4	-43
24c	260.4	0.610	0.390	0.0734	0.0063	0.1614	20.09	0.26	0.055	0.006	0.2291	456.8	39.2	483.6	309.2	495.4	295.0	8
25c	830.0	0.336	0.230	0.0464	0.0040	0.1002	13.68	0.18	0.058	0.007	0.2936	292.6	25.2	293.9	201.4	185.7	111.8	-58
26c	275.3	0.354	0.230	0.0483	0.0042	0.0952	21.69	0.27	0.052	0.006	0.2857	303.8	26.4	307.7	199.9	195.0	117.0	-56
27c	153.3	0.580	0.370	0.0731	0.0063	-0.0196	20.56	0.27	0.052	0.006	0.1922	454.9	39.2	464.5	296.3	341.6	198.7	-33
28c	161.1	0.365	0.270	0.0509	0.0043	0.3491	13.76	0.21	0.055	0.007	0.3991	320.0	27.0	315.9	233.7	143.0	96.5	-124
29c	301.0	0.566	0.370	0.0720	0.0063	0.3172	19.99	0.32	0.059	0.007	0.2166	448.0	39.2	455.4	297.7	350.1	209.4	-28
29r	150.6	0.690	0.580	0.0740	0.0066	0.0821	13.67	0.18	0.056	0.007	0.1735	460.2	41.0	532.8	447.9	694.7	521.6	34
30c	414.0	0.625	0.400	0.0787	0.0066	0.3921	13.03	0.17	0.057	0.007	0.2020	488.4	41.0	493.0	315.5	379.4	231.0	-29
31c	494.0	0.558	0.360	0.0722	0.0062	0.2137	13.81	0.17	0.055	0.006	0.2174	449.3	38.6	450.2	290.5	333.1	194.4	-35
32c	136.7	0.739	0.510	0.0919	0.0078	0.0311	11.00	0.16	0.061	0.007	0.3193	566.8	48.1	561.8	387.7	456.3	284.7	-24
33c	237.0	0.338	0.220	0.0470	0.0040	0.2479	21.21	0.31	0.051	0.006	0.1281	296.2	25.2	295.7	192.4	133.4	79.4	-122
34c	61.8	3.720	2.500	0.2775	0.0240	0.1693	3.59	0.05	0.101	0.012	0.3186	1578.8	136.5	1575.7	1058.9	1463.3	892.6	-8
34r	520.6	0.522	0.330	0.0695	0.0061	-0.0412	14.06	0.18	0.057	0.007	0.2809	433.1	38.0	426.5	269.6	432.4	249.3	0
35c	156.6	0.727	0.450	0.0939	0.0081	0.2092	10.55	0.16	0.058	0.007	0.3722	578.6	49.9	554.8	343.4	537.3	304.7	-8
36c	896.0	0.351	0.360	0.0487	0.0046	0.8048	19.72	0.54	0.073	0.015	-0.9195	306.7	29.0	305.5	313.3	412.2	322.3	26
36r	343.0	0.348	0.200	0.0492	0.0042	0.6947	20.37	0.33	0.050	0.006	0.1119	309.6	26.4	303.2	174.3	320.2	169.8	3
37c	99.0	0.912	0.560	0.1110	0.0097	0.3404	8.83	0.15	0.063	0.008	0.3289	678.6	59.3	658.1	404.1	704.9	392.2	4
38c	475.0	0.450	0.290	0.0610	0.0052	0.2069	16.35	0.24	0.059	0.007	0.2359	381.8	32.5	377.3	243.1	487.7	282.8	22
39c	137.2	0.925	0.710	0.1078	0.0096	0.2271	9.16	0.22	0.073	0.011	-0.8083	660.0	58.8	665.0	510.4	834.7	524.0	21
40c	274.0	0.767	0.520	0.0944	0.0080	0.2729	10.85	0.16	0.070	0.008	0.5980	581.5	49.3	578.0	391.9	691.3	442.4	16
40r	389.0	0.766	0.450	0.0937	0.0082	0.3176	10.47	0.14	0.059	0.007	0.2041	577.4	50.5	577.5	339.2	698.1	367.4	17
41c	49.9	9.620	5.400	0.4737	0.0370	0.1890	2.50	0.08	0.159	0.018	-0.1807	2499.8	195.3	2399.1	1346.7	2426.8	1388.5	-3
41r	53.1	10.070	6.600	0.4738	0.0410	0.1599	2.09	0.03	0.169	0.019	0.4090	2500.2	216.4	2441.2	1600.0	2470.4	1469.4	-1
42c	824.0	0.335	0.200	0.0475	0.0042	-0.1320	20.59	0.26	0.052	0.006	0.2566	299.2	26.5	293.4	175.1	379.4	203.0	21
43c	75.3	0.300	0.200	0.0498	0.0044	0.1465	20.04	0.44	0.048	0.006	0.1342	313.3	27.7	266.4	177.6	13.3	8.0	-2261
44c	533.1	0.528	0.340	0.0761	0.0065	0.3742	13.35	0.17	0.055	0.006	0.2230	472.7	40.4	430.5	277.2	337.3	196.6	-40
45c	390.0	0.536	0.340	0.0754	0.0064	0.1021	13.56	0.18	0.055	0.006	0.1943	468.7	39.8	435.8	276.4	387.6	228.0	-21
46c	356.3	1.033	0.670	0.1282	0.0110	0.3632	7.89	0.10	0.062	0.007	0.1729	777.6	66.7	720.4	467.3	641.3	378.1	-21
47c	227.0	0.830	0.490	0.1013	0.0088	0.0582	9.81	0.14	0.057	0.007	0.3757	622.0	54.0	613.6	362.3	574.5	320.2	-8
48c	12.4	0.750	0.460	0.0933	0.0085	0.2001	10.76	0.34	0.057	0.009	0.2093	575.0	52.4	568.2	348.5	677.6	360.1	15
49c	827.0	0.334	0.210	0.0493	0.0043	-0.1779	20.33	0.25	0.050	0.006	0.1086	310.2	27.1	292.6	184.0	213.5	122.8	-45
50c	674.0	1.291	0.840	0.1418	0.0120	0.3192	7.06	0.09	0.068	0.008	0.3285	854.8	72.3	841.7	547.7	859.4	495.1	1
51c	1434.0	0.867	0.560	0.1006	0.0086	0.3050	10.10	0.14	0.064	0.007	0.4047	617.9	52.8	633.9	409.5	727.4	423.3	15
52c	221.7	0.358	0.230	0.0493	0.0042	0.0221	20.70	0.33	0.050	0.006	0.3332	310.2	26.4	310.7	199.6	245.3	144.0	-26
53c	225.0	0.396	0.260	0.0546	0.0047	-0.0140	18.68	0.29	0.051	0.006	0.3584	342.4	29.5	338.7	222.4	267.7	155.7	-28
54c	156.8	9.430	6.000	0.4445	0.0370	0.5128	2.38	0.03	0.153	0.017	0.3502	2370.8	197.3	2380.8	1514.8	2377.5	1415.9	0
54r	416.0	1.385	2.000	0.1269	0.0210	0.4507	5.10	0.29	0.103	0.012	-0.7336	770.2	127.4	882.6	1274.5	1159.6	915.8	34
55c	168.7	0.364	0.240	0.0497	0.0043	-0.0233	20.57	0.36	0.052	0.006	0.3700	312.4	27.1	315.2	207.8	298.5	177.0	-5
56c	117.1	0.384	0.230	0.0515	0.0046	-0.0109	19.27	0.35	0.048	0.006	0.2981	323.7	28.9	330.0	197.6	307.2	163.9	-5
57c	49.5	1.013	0.700	0.1060	0.0096	0.1645	9.21	0.16	0.069	0.008	0.0881	649.5	58.8	710.4	490.9	859.4	520.5	24
57r	93.3	0.657	0.480	0.0810	0.0075	0.2592	11.86	0.25	0.061	0.007	-0.0119	502.1	46.5	512.8	374.6	544.8	335.8	8
58c	163.6	0.362	0.230	0.0504	0.0043	0.0464	20.28	0.34	0.052	0.006	0.2908	317.2	27.0	313.7	199.3	285.4	170.1	-11

59c	175.0	0.713	0.460	0.0887	0.0077	0.3013	11.52	0.19	0.057	0.007	0.0973	547.8	47.6	546.5	352.6	510.8	302.0	-7
60c	73.2	0.570	0.370	0.0752	0.0065	0.0528	13.59	0.24	0.054	0.007	0.2467	467.4	40.4	458.0	297.3	408.2	237.9	-15
61c	399.1	0.401	0.260	0.0556	0.0048	0.2417	18.41	0.25	0.051	0.006	0.1604	348.9	30.1	342.4	222.0	276.6	160.2	-26
62c	214.4	0.354	0.230	0.0498	0.0043	0.2033	23.28	0.34	0.050	0.006	0.1870	313.2	27.1	307.7	199.9	254.3	148.7	-23
62r	792.0	0.382	0.250	0.0524	0.0045	0.4937	19.42	0.30	0.052	0.006	0.0534	329.5	28.3	328.1	215.0	311.6	183.6	-6
63c	191.0	0.360	0.230	0.0505	0.0044	0.2619	20.19	0.33	0.051	0.006	0.0789	317.7	27.7	312.2	199.5	298.5	177.0	-6
64c	272.2	0.431	0.270	0.0577	0.0050	0.1724	17.55	0.24	0.051	0.006	0.1599	361.7	31.3	363.9	228.0	383.5	211.9	6
64r	325.2	0.411	0.300	0.0552	0.0047	0.1959	18.61	0.24	0.063	0.007	-0.0328	346.3	29.5	349.6	255.2	432.4	288.3	20
65c	876.0	0.873	0.580	0.1048	0.0095	0.5349	9.26	0.15	0.060	0.007	0.2202	642.5	58.2	637.2	423.3	617.9	358.1	-4
65r	213.7	0.601	0.390	0.0765	0.0065	0.1398	13.32	0.18	0.057	0.007	0.1774	475.1	40.4	477.9	310.1	503.1	298.5	6
66c	237.2	0.567	0.370	0.0743	0.0064	0.0947	13.53	0.20	0.055	0.006	0.2910	461.9	39.8	456.1	297.6	464.2	272.1	1
67c	146.3	0.586	0.380	0.0752	0.0065	0.1885	13.57	0.22	0.057	0.007	0.1587	467.4	40.4	468.3	303.7	495.4	295.0	6
68c	226.4	0.866	0.570	0.1039	0.0093	0.2990	9.60	0.17	0.061	0.007	0.3209	637.2	57.0	633.4	416.9	667.2	388.7	4
69c	253.2	0.901	0.970	0.1050	0.0120	0.1857	7.75	0.28	0.081	0.010	-0.7123	643.6	73.6	652.3	702.2	642.8	504.9	0
70c	384.0	0.615	0.380	0.0784	0.0067	-0.0623	12.96	0.18	0.055	0.006	0.1909	486.6	41.6	486.7	300.7	456.3	260.3	-7
71c	911.0	0.743	0.490	0.0916	0.0082	0.3848	10.56	0.13	0.058	0.007	0.0695	565.0	50.6	564.2	372.1	529.8	310.6	-7
72c	318.1	0.344	0.220	0.0478	0.0042	0.2421	20.70	0.31	0.051	0.006	0.1161	301.1	26.4	300.2	192.0	302.9	173.4	1
73c	37.7	0.877	0.570	0.1037	0.0092	0.1938	9.78	0.25	0.061	0.008	0.1989	636.1	56.4	639.4	415.5	642.8	378.7	1
73r	353.6	0.590	0.360	0.0759	0.0064	0.1668	13.64	0.19	0.055	0.006	0.2867	471.6	39.8	470.9	287.3	436.4	251.2	-8
74c	378.0	0.332	0.210	0.0466	0.0040	0.3287	21.82	0.32	0.052	0.006	0.0784	293.4	25.2	291.1	184.1	276.6	160.2	-6
74r	464.8	0.335	0.210	0.0461	0.0039	0.2637	22.20	0.32	0.051	0.006	0.1335	290.4	24.6	293.4	183.9	341.6	192.3	15
75c	30.4	5.110	3.300	0.3310	0.0280	0.2388	3.11	0.06	0.115	0.013	0.3143	1843.2	155.9	1837.8	1186.8	1849.8	1095.8	0
76c	325.0	0.575	0.370	0.0748	0.0064	0.4663	13.57	0.20	0.056	0.006	-0.0347	465.1	39.8	461.2	296.8	448.4	264.7	-4
77c	65.1	0.850	0.540	0.1027	0.0088	0.0881	9.98	0.17	0.060	0.007	0.2629	630.2	54.0	624.6	396.8	603.6	352.1	-4
78c	141.7	0.387	0.260	0.0522	0.0045	0.1801	19.31	0.31	0.057	0.007	0.1441	328.0	28.3	332.2	223.2	354.3	218.1	7
78r	2268.0	0.425	0.280	0.0566	0.0049	0.3873	17.84	0.29	0.056	0.006	0.3098	354.9	30.7	359.3	237.0	404.1	243.3	12
79c	413.6	0.749	0.480	0.0914	0.0078	0.3311	11.10	0.15	0.060	0.007	0.2190	564.0	48.1	567.6	363.8	589.1	345.9	4
80c	262.9	0.409	0.270	0.0565	0.0049	-0.0243	17.77	0.26	0.054	0.006	0.3419	354.4	30.7	348.2	229.8	302.9	185.0	-17
80r	168.2	0.430	0.280	0.0578	0.0050	0.1037	17.54	0.28	0.055	0.007	0.1750	361.9	31.3	363.2	236.5	387.6	228.0	7
81c	141.4	0.381	0.240	0.0522	0.0046	0.2981	19.48	0.42	0.055	0.007	0.2131	328.0	28.9	327.8	206.5	358.5	213.6	9
82c	458.8	0.385	0.250	0.0530	0.0046	0.3247	18.86	0.26	0.053	0.006	0.1849	333.2	28.9	330.7	214.7	362.7	209.0	8
83c	285.6	0.031	0.020	0.0049	0.0004	0.0572	207.04	6.43	0.046	0.008	0.2413	31.4	2.8	30.8	20.0	-7.6	-4.5	512
84c	582.0	0.898	0.580	0.1060	0.0091	0.3852	9.58	0.13	0.064	0.007	0.2645	649.5	55.8	650.7	420.2	697.1	411.5	7
85c	325.6	0.036	0.025	0.0048	0.0004	0.0447	205.76	5.93	0.059	0.009	0.2979	31.0	2.8	35.5	24.9	294.2	191.6	89
86c	131.8	0.355	0.220	0.0498	0.0043	0.1675	20.61	0.35	0.052	0.006	0.2230	313.3	27.1	308.5	191.2	354.3	198.3	12

Table DR12. Lower Conglomérat de Valensole (VA03) zircon U-Pb data. C = core, r = rim. Spot size 35 μm . ρ – error correlation of preceding isotope ratio columns. Discordance is calculated from $([{}^{207}\text{Pb}/{}^{206}\text{Pb} \text{ age}] - [{}^{206}\text{Pb}/{}^{238}\text{U} \text{ age}])/[{}^{207}\text{Pb}/{}^{206}\text{Pb} \text{ age}] * 100$; ages which fail by > 20% or < -5% are rejected. Errors are fully propagated and given at the 2σ level.

Grain	U (ppm)	207/235	207/235 2σ	206/238	206/238 2σ	ρ	238/206	238/206 2σ	207/206	207/206 2σ	ρ	206/238	206/238 Age	207/235	207/235 Age	206/207	206/207 Age	% Disc.
1c	4.9	0.332	0.020	0.0452	0.0018	0.2348	22.134	0.882	0.052	0.003	0.0792	284.9	11.3	291.1	17.5	272.2	16.8	-5
2c	5.5	0.803	0.027	0.0960	0.0036	0.2801	10.417	0.391	0.061	0.002	0.1622	590.9	22.2	598.5	20.1	628.6	22.8	6
3c	17.0	2.036	0.049	0.1910	0.0071	0.2669	5.236	0.195	0.077	0.002	0.3990	1126.8	41.9	1127.6	27.1	1113.1	31.9	-1
4r	3.6	0.033	0.003	0.0048	0.0002	-0.1254	201.613	8.943	0.050	0.005	0.2613	31.0	1.4	33.2	3.3	258.8	27.7	88
5c	5.4	0.811	0.024	0.0980	0.0037	0.1193	207.469	9.039	0.051	0.006	0.3306	602.7	22.8	603.0	17.8	589.1	19.8	-2
5r	7.2	0.761	0.026	0.0920	0.0035	0.2166	10.204	0.385	0.060	0.002	0.2059	567.4	21.6	574.6	19.6	567.1	21.1	0
6c	2.2	9.500	0.230	0.4362	0.0170	0.2912	10.870	0.414	0.059	0.002	0.1981	2333.6	90.9	2387.5	57.8	2421.4	71.0	4
7c	0.9	0.751	0.038	0.0920	0.0036	-0.0626	2.293	0.089	0.157	0.005	0.3529	567.4	22.2	568.8	28.8	548.5	30.0	-3
8c	2.1	2.195	0.080	0.1994	0.0078	0.1607	10.870	0.425	0.059	0.003	0.3061	1172.1	45.8	1179.5	43.0	1157.0	47.2	-1
9c	2.7	1.770	0.084	0.1644	0.0062	0.3642	5.015	0.196	0.078	0.003	0.3096	981.2	37.0	1034.5	49.1	1172.1	59.3	16

10c	5.8	0.711	0.021	0.0867	0.0033	0.1086	6.083	0.229	0.079	0.004	-0.0624	536.1	20.4	545.3	16.1	581.8	19.6	8
11c	4.4	0.532	0.018	0.0691	0.0026	0.1552	11.531	0.439	0.059	0.002	0.2975	431.0	16.2	433.1	14.7	436.4	16.5	1
12c	3.0	0.568	0.019	0.0728	0.0027	0.0971	14.463	0.544	0.056	0.002	0.2252	453.0	16.8	456.7	15.3	468.1	17.4	3
13c	41.0	0.373	0.010	0.0506	0.0019	0.3655	13.736	0.509	0.056	0.002	0.2704	318.1	11.9	321.7	8.5	336.9	10.1	6
14c	9.8	0.716	0.018	0.0892	0.0033	0.1799	19.771	0.743	0.053	0.002	0.2431	550.7	20.4	548.3	13.8	530.9	16.5	-4
15c	8.3	13.600	0.320	0.5258	0.0190	0.4658	11.212	0.415	0.058	0.002	0.3432	2723.7	98.4	2722.3	64.1	2716.0	77.0	0
15r	1.3	12.820	0.310	0.5096	0.0190	0.2263	1.902	0.069	0.187	0.005	0.2766	2654.9	99.0	2666.5	64.5	2673.0	76.3	1
16c	4.2	0.706	0.025	0.0877	0.0034	0.1494	1.962	0.073	0.182	0.005	0.4508	541.9	21.0	542.4	19.2	518.4	20.7	-5
17c	2.5	0.524	0.023	0.0668	0.0027	0.2572	11.403	0.442	0.058	0.002	0.2222	416.8	16.8	427.8	18.8	483.8	22.1	14
17r	1.9	0.518	0.029	0.0670	0.0026	0.2822	14.970	0.605	0.057	0.003	0.1063	418.1	16.2	423.8	23.7	456.3	23.6	8
18c	8.4	0.774	0.026	0.0884	0.0034	0.2013	14.925	0.579	0.056	0.003	0.0796	546.1	21.0	582.1	19.6	715.0	26.0	24
19c	0.9	0.789	0.044	0.0938	0.0037	0.1121	11.312	0.435	0.063	0.002	0.2600	578.0	22.8	590.6	32.9	649.8	39.2	11
19r	0.5	0.876	0.067	0.1000	0.0040	-0.0555	10.661	0.421	0.061	0.004	0.2066	614.4	24.6	638.8	48.9	780.8	59.9	21
20c	17.0	1.837	0.049	0.1793	0.0071	0.4912	10.000	0.400	0.065	0.005	0.2580	1063.1	42.1	1058.8	28.2	1030.5	30.8	-3
21c	16.0	0.374	0.012	0.0513	0.0021	0.6131	5.577	0.221	0.074	0.002	0.1749	322.4	13.2	322.2	10.4	333.1	10.7	3
21r	14.0	0.345	0.011	0.0479	0.0018	0.2438	19.501	0.799	0.053	0.002	0.0651	301.4	11.3	301.0	9.6	276.6	9.6	-9
22r	1.9	0.570	0.022	0.0741	0.0028	0.0684	20.890	0.785	0.052	0.002	0.2699	460.6	17.4	458.0	17.7	456.3	19.5	-1
23c	2.3	4.242	0.110	0.2980	0.0110	0.3550	13.503	0.510	0.056	0.002	0.2737	1681.4	62.1	1682.2	43.6	1678.9	50.5	0
24c	2.4	5.710	0.140	0.3459	0.0130	0.4170	3.356	0.124	0.103	0.003	0.2926	1915.0	72.0	1932.9	47.4	1974.0	57.0	3
25c	4.6	1.103	0.031	0.1233	0.0046	0.1367	2.891	0.109	0.121	0.004	0.2650	749.5	28.0	754.8	21.2	758.1	24.7	1
26c	1.2	4.091	0.110	0.2734	0.0100	0.3464	8.110	0.303	0.065	0.002	0.2773	1558.0	57.0	1652.5	44.4	1807.7	54.0	14
26r	6.1	0.525	0.016	0.0689	0.0025	-0.1257	3.658	0.134	0.111	0.003	0.2260	429.5	15.6	428.5	13.1	432.4	14.8	1
27c	2.7	1.544	0.043	0.1598	0.0060	0.0807	14.514	0.527	0.056	0.002	0.5790	955.7	35.9	948.1	26.4	925.4	30.5	-3
28c	31.0	0.359	0.010	0.0488	0.0018	0.2274	6.258	0.235	0.070	0.002	0.3843	307.0	11.3	311.3	8.7	362.7	11.5	15
29c	4.4	0.413	0.015	0.0554	0.0021	0.0566	20.500	0.756	0.054	0.002	0.2042	347.8	13.2	351.0	12.7	366.9	15.0	5
30c	0.2	0.166	0.043	0.0261	0.0016	0.1496	18.038	0.683	0.054	0.002	0.2811	166.1	10.2	155.9	40.4	49.2	14.7	-237
31c	120.0	0.602	0.021	0.0762	0.0033	0.8473	38.314	2.349	0.047	0.014	0.0731	473.4	20.5	478.5	16.7	480.3	14.4	1
32c	4.3	1.692	0.048	0.1669	0.0063	0.1374	13.123	0.568	0.057	0.002	0.2383	995.0	37.6	1005.5	28.5	1033.3	33.6	4
33c	13.0	0.625	0.022	0.0789	0.0030	0.0819	5.992	0.226	0.074	0.002	0.3504	489.4	18.6	493.0	17.4	495.4	19.1	1
33r	8.7	0.623	0.020	0.0787	0.0030	0.2003	12.677	0.482	0.057	0.002	0.2685	488.5	18.6	491.7	15.8	499.3	18.3	2
34c	5.9	0.761	0.022	0.0933	0.0035	0.2076	12.703	0.484	0.057	0.002	0.1843	575.0	21.6	574.6	16.6	574.5	19.4	0
35c	1.1	0.956	0.040	0.1105	0.0043	0.2180	10.718	0.402	0.059	0.002	0.2819	675.7	26.3	681.2	28.5	632.2	30.2	-7
36c	4.6	4.137	0.100	0.2913	0.0110	0.3222	9.050	0.352	0.061	0.003	0.1443	1648.0	62.2	1661.6	40.2	1669.9	48.9	1
36r	3.6	3.690	0.130	0.2666	0.0110	0.3056	3.433	0.130	0.103	0.003	0.3663	1523.5	62.9	1569.2	55.3	1590.2	58.3	4
37c	7.2	2.666	0.077	0.2292	0.0087	0.1844	3.751	0.155	0.098	0.004	0.3388	1330.3	50.5	1319.1	38.1	1304.1	43.2	-2
38c	0.3	3.030	0.140	0.2401	0.0098	-0.0075	4.363	0.166	0.085	0.003	0.1975	1387.2	56.6	1415.2	65.4	1475.6	68.7	6
39c	2.6	3.030	0.095	0.2481	0.0095	0.2914	4.165	0.170	0.092	0.004	0.3864	1428.7	54.7	1415.2	44.4	1391.2	48.8	-3
40c	5.9	0.574	0.018	0.0731	0.0027	0.1301	4.031	0.154	0.088	0.003	0.2630	455.0	16.8	460.6	14.4	483.8	17.0	6
40r	19.0	0.637	0.024	0.0741	0.0028	0.0627	13.672	0.505	0.057	0.002	0.2631	460.5	17.4	500.4	18.9	670.7	26.0	31
41c	0.4	13.240	0.370	0.5230	0.0200	0.4333	13.504	0.511	0.062	0.002	0.3457	2711.9	103.7	2696.9	75.4	2695.5	84.6	-1
41r	0.3	13.950	0.440	0.5276	0.0210	0.2663	1.912	0.073	0.185	0.006	0.2438	2731.3	108.7	2746.3	86.6	2749.1	99.4	1
42c	4.2	0.373	0.020	0.0525	0.0020	-0.0992	1.895	0.075	0.191	0.007	0.4360	329.8	12.6	321.9	17.3	281.0	16.8	-17
43c	2.3	0.548	0.020	0.0725	0.0028	0.0754	19.051	0.726	0.052	0.003	0.3650	451.2	17.4	443.7	16.2	383.5	16.2	-18
44c	7.3	0.533	0.021	0.0703	0.0027	0.2072	13.793	0.533	0.054	0.002	0.2948	437.7	16.8	433.8	17.1	420.3	17.5	-4
45c	1.1	1.660	0.064	0.1649	0.0064	0.0388	14.235	0.547	0.055	0.002	0.1170	984.0	38.2	993.4	38.3	1046.9	45.1	6
46c	2.7	0.533	0.020	0.0692	0.0026	0.3323	6.064	0.235	0.074	0.003	0.4610	431.3	16.2	433.8	16.3	432.4	17.1	0
47c	1.0	3.284	0.088	0.2568	0.0096	0.2662	14.451	0.543	0.056	0.002	-0.0133	1473.4	55.1	1477.3	39.6	1479.7	47.9	0
48c	3.2	0.962	0.030	0.1106	0.0042	0.3246	3.894	0.146	0.093	0.003	0.2375	676.2	25.7	684.3	21.3	708.2	23.6	5
49c	1.8	1.936	0.061	0.1810	0.0068	0.2461	9.042	0.343	0.063	0.002	0.1176	1072.4	40.3	1093.6	34.5	1136.7	41.0	6
49r	3.1	1.904	0.050	0.1830	0.0069	0.2174	5.525	0.208	0.078	0.003	0.1469	1083.3	40.8	1082.5	28.4	1092.4	33.1	1
4c	11.0	0.034	0.003	0.0050	0.0002	0.0389	5.464	0.206	0.076	0.002	0.3306	31.9	1.4	33.8	3.4	204.3	22.0	84
50c	0.9	0.742	0.035	0.0915	0.0035	0.2755	10.929	0.418	0.058	0.003	0.0560	564.4	21.6	563.6	26.6	541.1	25.1	-4
50r	5.0	0.785	0.033	0.0943	0.0037	0.1178	10.604	0.416	0.060	0.003	0.2564	580.9	22.8	588.3	24.7	617.9	28.6	6
51c	2.4	0.903	0.033	0.1044	0.0040	0.1170	9.579	0.367	0.062	0.003	0.2666	640.1	24.5	653.3	23.9	677.6	27.3	6

52c	2.5	0.549	0.022	0.0707	0.0027	0.0281	14.144	0.540	0.057	0.002	0.3228	440.4	16.8	444.3	17.8	479.9	20.3	8
52r	31.0	0.590	0.015	0.0760	0.0029	0.2638	13.165	0.503	0.056	0.002	0.3094	472.0	18.0	470.7	12.0	451.2	13.7	-5
53c	0.4	1.887	0.082	0.1768	0.0071	0.0092	5.656	0.227	0.076	0.004	0.3379	1049.5	42.1	1076.5	46.8	1100.3	53.4	5
54c	4.7	0.724	0.031	0.0880	0.0033	0.0639	11.364	0.426	0.060	0.003	0.3069	543.7	20.4	553.0	23.7	610.8	29.4	11
55c	0.3	1.892	0.083	0.1783	0.0072	0.0923	5.609	0.226	0.078	0.004	0.3156	1057.7	42.7	1078.3	47.3	1139.2	55.7	7
56c	7.5	0.811	0.028	0.0962	0.0036	0.2998	10.395	0.389	0.062	0.002	0.1443	592.1	22.2	603.0	20.8	660.3	24.7	10
56r	7.4	0.773	0.026	0.0955	0.0037	0.1284	10.471	0.406	0.060	0.002	0.1969	588.0	22.8	581.5	19.6	592.7	22.8	1
57c	1.8	3.970	0.140	0.2866	0.0110	0.4980	3.489	0.134	0.102	0.004	0.1907	1624.5	62.4	1628.1	57.4	1653.6	60.2	2
58c	7.7	0.731	0.034	0.0719	0.0028	0.0885	13.908	0.542	0.074	0.004	0.2967	447.6	17.4	557.1	25.9	1033.3	53.3	57
58r	20.0	0.624	0.020	0.0806	0.0030	0.4313	12.407	0.462	0.059	0.002	0.2128	499.7	18.6	492.4	15.8	581.8	20.6	14
59c	2.4	3.939	0.160	0.2401	0.0100	0.4459	4.165	0.173	0.119	0.004	0.1953	1387.2	57.8	1621.7	65.9	1939.8	58.7	28
60c	12.0	0.367	0.011	0.0498	0.0019	0.3225	20.076	0.766	0.053	0.002	0.1377	313.4	12.0	317.3	9.5	324.5	11.0	3
61c	8.7	1.312	0.031	0.1386	0.0049	0.0143	7.215	0.255	0.070	0.002	0.6449	836.7	29.6	851.0	20.1	922.5	26.4	9
62c	5.0	0.555	0.017	0.0733	0.0028	0.2846	13.650	0.522	0.055	0.002	0.1751	455.8	17.4	448.3	13.7	395.9	13.1	-15
62r	20.0	0.602	0.018	0.0750	0.0028	0.0875	13.330	0.498	0.058	0.002	0.2868	466.3	17.4	478.5	14.3	529.8	18.3	12
63c	1.5	0.733	0.029	0.0898	0.0035	0.2175	11.136	0.434	0.059	0.003	0.1488	554.4	21.6	558.3	22.1	563.4	23.9	2
63r	2.1	0.745	0.031	0.0909	0.0035	0.0825	11.001	0.424	0.060	0.003	0.2740	560.9	21.6	565.3	23.5	592.7	26.8	5
64c	1.0	6.430	0.170	0.3683	0.0140	0.1824	2.715	0.103	0.126	0.004	0.3861	2021.4	76.8	2036.4	53.8	2044.3	64.8	1
65c	4.3	1.370	0.044	0.1487	0.0052	0.0367	6.725	0.235	0.068	0.003	0.4878	893.7	31.3	876.2	28.1	880.7	42.5	-1
65r	5.8	1.830	0.056	0.1840	0.0079	0.2864	5.435	0.233	0.073	0.002	0.3786	1088.8	46.7	1056.3	32.3	1019.5	30.6	-7
66c	2.0	1.756	0.055	0.1676	0.0063	0.1704	5.967	0.224	0.076	0.003	0.1865	998.9	37.5	1029.4	32.2	1084.5	38.7	8
66r	1.4	1.697	0.051	0.1672	0.0063	0.3280	5.981	0.225	0.073	0.002	0.1784	996.7	37.6	1007.4	30.3	1019.5	33.4	2
67c	77.0	6.250	0.190	0.3653	0.0150	0.6425	2.737	0.112	0.124	0.004	0.1171	2007.2	82.4	2011.5	61.1	2007.4	58.5	0
67r	5.6	5.935	0.160	0.3590	0.0140	0.7114	2.786	0.109	0.121	0.003	-0.0341	1977.4	77.1	1966.4	53.0	1976.9	53.7	0
68c	2.4	0.880	0.038	0.1064	0.0041	0.0922	9.398	0.362	0.060	0.003	0.2100	651.8	25.1	641.0	27.7	614.4	28.5	-6
68r	2.0	0.833	0.029	0.0981	0.0037	0.0664	10.194	0.384	0.061	0.002	0.3198	603.3	22.8	615.3	21.4	653.3	25.5	8
69c	0.5	1.677	0.062	0.1692	0.0065	0.1712	5.910	0.227	0.072	0.003	0.2006	1007.7	38.7	999.8	37.0	977.4	40.9	-3
70c	15.0	0.913	0.026	0.1071	0.0040	0.2111	9.337	0.349	0.062	0.002	0.2991	655.9	24.5	658.7	18.8	660.3	21.4	1
70r	11.0	0.572	0.017	0.0738	0.0027	0.1270	13.559	0.496	0.056	0.002	0.3025	458.7	16.8	459.3	13.7	460.3	15.6	0
71c	1.6	1.874	0.075	0.1791	0.0068	0.1507	5.583	0.212	0.076	0.004	0.2058	1062.1	40.3	1071.9	42.9	1103.0	50.6	4
72c	2.9	0.757	0.026	0.0908	0.0035	0.1947	11.013	0.425	0.060	0.002	0.1756	560.3	21.6	572.3	19.7	600.0	23.0	7
73c	1.5	4.125	0.120	0.2884	0.0110	0.1751	3.467	0.132	0.103	0.003	0.3129	1633.5	62.3	1659.3	48.3	1680.7	53.8	3
74r	15.0	0.381	0.015	0.0517	0.0023	0.5882	19.342	0.860	0.053	0.002	-0.0849	325.0	14.5	327.8	12.9	337.3	12.7	4
75c	0.9	1.852	0.073	0.1803	0.0070	0.1136	5.546	0.215	0.074	0.003	0.2734	1068.6	41.5	1064.1	41.9	1036.0	43.5	-3
76c	1.0	1.700	0.140	0.1654	0.0073	0.1749	6.046	0.267	0.073	0.006	0.0484	986.7	43.5	1008.5	83.1	1019.5	80.8	3
77c	14.0	0.590	0.018	0.0734	0.0028	0.2181	13.624	0.520	0.057	0.002	0.2701	456.6	17.4	470.9	14.4	499.3	17.5	9
78c	2.3	0.756	0.029	0.0921	0.0035	-0.0335	10.858	0.413	0.059	0.003	0.3442	567.9	21.6	571.7	21.9	563.4	23.9	-1
79c	4.7	0.410	0.014	0.0546	0.0021	0.1466	18.315	0.704	0.054	0.002	0.2276	342.7	13.2	348.9	11.9	375.2	14.6	9
80c	1.4	0.721	0.037	0.0862	0.0034	0.3004	11.601	0.458	0.061	0.003	-0.0357	533.0	21.0	551.3	28.3	635.7	34.4	16
81c	1.7	1.172	0.059	0.1308	0.0052	0.0605	7.645	0.304	0.065	0.004	0.2920	792.4	31.5	787.6	39.6	758.1	41.1	-5
82c	4.6	0.556	0.024	0.0733	0.0028	-0.0971	13.644	0.521	0.055	0.003	0.3759	455.9	17.4	448.9	19.4	395.9	18.9	-15
83c	93.0	0.376	0.010	0.0509	0.0019	0.4602	19.654	0.734	0.054	0.002	0.1079	319.9	11.9	324.1	8.4	350.9	10.5	9
84c	9.5	0.846	0.024	0.1014	0.0038	0.1635	9.858	0.369	0.061	0.002	0.2335	622.8	23.3	622.5	17.7	625.1	19.6	0
84r	7.1	0.799	0.024	0.0953	0.0036	0.3119	10.498	0.397	0.060	0.002	0.0708	586.6	22.2	596.3	17.9	614.4	20.4	5
85c	2.0	18.030	0.410	0.5898	0.0210	0.4283	1.695	0.060	0.223	0.006	0.4123	2988.6	106.4	2991.3	68.0	3003.9	83.4	1

Table DR13. Conglomérat de Clumanc (BA01) AFT data. Ns – number of spontaneous tracks. Errors are fully propagated and given at the 1σ level.

Grain	Ns	Area (cm ²)	²³⁸ U/ ⁴³ Ca	AFT age (Ma)	Error (1σ Ma)
2	0	1.85E-05	6.29E-02	0.0	12.63
3	0	3.17E-05	2.18E-02	0.0	21.41
4	10	3.17E-05	6.03E-02	51.7	17.1
5	18	6.50E-06	2.66E-01	102.2	24.9
7	4	2.18E-05	6.16E-02	29.5	14.8
9	2	3.65E-05	1.34E-02	40.3	28.6
13	45	1.02E-05	6.86E-01	63.1	9.9
14	4	1.77E-05	2.00E-02	111.1	55.9
17	38	2.05E-05	5.12E-01	35.9	6.2
18	26	8.90E-06	4.72E-01	61	12.4
19	3	9.21E-06	6.24E-02	51.5	29.9
20	33	1.52E-05	2.97E-01	71.9	13
25	6	2.76E-05	6.77E-02	31.8	13.1
26	19	9.95E-06	4.39E-01	43	10.1
28	20	1.45E-05	7.00E-02	192.3	44.8
29	5	1.29E-05	5.85E-02	65.6	29.6
31	6	2.32E-05	6.78E-02	37.6	15.5
35	3	1.19E-05	7.46E-02	33.5	19.4
36	13	9.49E-06	1.34E-01	100.6	28.4
39	11	1.44E-05	1.11E-01	68.2	20.9
41	20	1.58E-05	1.36E-01	91.3	21.1
44	27	8.79E-06	4.03E-01	75.1	14.9
45	3	1.00E-05	4.09E-02	72.1	41.8
46	0	1.88E-05	5.96E-02	0.0	13.25
48	2	1.15E-05	3.48E-02	49.4	35
49	4	1.46E-05	5.32E-02	50.8	25.5
53	18	1.26E-05	3.68E-01	38.5	9.3
56	2	1.06E-05	4.70E-02	39.6	28.1
58	7	1.08E-05	7.91E-02	81	30.9
59	0	2.60E-05	6.76E-02	0.0	8.44
60	30	1.12E-05	3.50E-01	75.6	14.3
63	10	8.57E-06	6.27E-02	181.7	58.2
64	24	1.12E-05	6.53E-01	32.4	6.8
65	23	8.82E-06	3.65E-01	70.5	15.1
66	7	8.89E-06	2.63E-02	290.1	110.7
67	2	1.23E-05	3.30E-02	48.8	34.7
69	3	1.36E-05	1.65E-02	130.6	75.8
70	20	1.25E-05	1.07E-01	147.3	33.8
71	4	9.48E-06	6.50E-02	64	32.2
72	3	5.76E-06	1.16E-01	44.5	25.8
78	2	1.47E-05	3.96E-02	34.1	24.2
79	0	1.58E-05	3.94E-02	0.0	23.75
81	6	2.13E-05	1.75E-02	157.9	65.1
82	7	1.11E-05	4.97E-02	124.8	47.6
83	6	8.52E-06	6.24E-02	110.9	45.6
84	37	8.20E-06	2.89E-01	153.1	26.3
85	5	9.23E-06	1.41E-01	37.9	17.1
86	8	1.16E-05	4.94E-02	136.4	48.9
94	5	5.68E-06	1.77E-01	49.1	22.1
100	6	1.54E-05	7.66E-02	50.4	20.7
101	3	1.28E-05	5.87E-02	39.4	22.8
102	2	1.30E-05	4.08E-02	37.4	26.5
104	4	1.46E-05	6.67E-02	40.5	20.3
105	7	8.20E-06	2.69E-01	31.4	12
106	3	2.84E-05	1.40E-02	74.2	43
107	5	1.15E-05	1.59E-02	266.9	120.3
108	3	1.67E-05	2.00E-02	88.5	51.3

109	1	8.71E-06	1.36E-02	83.3	83.4
111	13	9.95E-06	1.20E-01	107.4	30.3
112	2	1.01E-05	2.53E-02	77.3	54.8
114	2	7.84E-06	5.95E-02	42.4	30
115	13	1.03E-05	1.46E-01	85.1	24
116	7	1.31E-05	1.08E-01	48.6	18.5
117	7	1.46E-05	5.96E-02	79.3	30.2
118	3	1.09E-05	1.36E-02	196.5	114
119	11	1.23E-05	1.27E-01	69.6	21.3
120	5	8.61E-06	9.81E-02	58.4	26.3
121	6	5.62E-06	1.03E-01	101.5	41.7
122	3	1.35E-05	2.37E-02	92.6	53.7
124	2	1.31E-05	2.24E-02	67.2	47.6
125	16	1.23E-05	1.55E-01	82.5	21.1
126	3	3.83E-05	1.87E-02	41.3	24
127	6	3.10E-05	2.65E-02	72	29.7
130	24	4.63E-06	3.13E-01	162.1	34.1
132	48	1.13E-05	5.32E-01	78.6	12.1
134	2	7.10E-06	1.79E-02	154.5	109.6

Table DR14. Grès de Senez (BA02) AFT data. Ns – number of spontaneous tracks. Errors are fully propagated and given at the 1σ level.

Grain	Ns	Area (cm ²)	²³⁸ U/ ⁴³ Ca	AFT age (Ma)	Error (1σ Ma)
5	8	1.03E-05	2.18E-01	35.2	12.7
7	4	1.39E-05	2.11E-02	133.8	67.5
8	12	3.15E-05	2.47E-02	150.8	44.9
14	1	9.61E-06	7.75E-02	13.3	13.3
18	2	1.59E-05	4.53E-02	27.5	19.5
19	4	1.61E-05	2.73E-02	89.7	45.2
20	10	1.59E-05	1.22E-01	50.8	16.4
23	5	1.17E-05	6.21E-02	67.8	30.6
25	6	1.67E-05	7.25E-02	48.9	20.3
26	10	1.65E-05	9.71E-02	61.5	19.8
28	9	1.33E-05	1.10E-01	60.9	20.7
30	0	1.93E-05	2.96E-02	0.0	26.1
31	15	9.72E-06	8.99E-02	167.9	45.5
32	17	1.05E-05	3.15E-01	50.8	12.7
34	12	2.37E-05	1.38E-01	36.3	10.7
36	11	1.31E-05	7.22E-02	114.2	35.0
38	6	1.13E-05	8.67E-02	60.4	24.9
39	8	1.48E-05	1.04E-01	51.3	18.5
40	0	1.26E-05	2.71E-03	0.0	410.2
43	2	1.12E-05	2.76E-02	63.7	45.5
44	11	1.99E-05	1.49E-01	36.6	11.4
46	3	7.38E-06	5.66E-02	70.8	41.1
47	9	1.50E-05	9.95E-02	59.5	20.1
48	17	1.17E-05	2.20E-01	65.2	16.4
55	2	1.32E-05	4.26E-02	35.1	24.9
56	8	1.95E-05	9.60E-02	42.2	15.2
57	19	2.00E-05	1.45E-01	64.5	15.3
59	1	1.11E-05	1.23E-02	72.1	72.3
62	17	1.70E-05	1.77E-01	55.7	13.9
65	0	1.49E-05	4.50E-02	0.0	22.2
69	0	9.71E-06	1.18E-02	0.0	127.4
70	17	1.17E-05	1.05E-01	135.8	33.9
71	4	2.41E-05	6.99E-02	23.5	11.9
72	10	1.59E-05	7.60E-02	81.5	26.2
73	13	2.06E-05	7.87E-02	78.9	22.4

74	5	1.57E-05	4.43E-02	70.8	32.0
76	13	1.22E-05	1.06E-01	98.9	28.1
78	8	2.56E-05	2.88E-02	106.6	38.3
81	6	1.52E-05	4.87E-02	79.9	32.9
83	13	1.50E-05	1.05E-01	81	22.9
86	12	1.71E-05	8.13E-02	85	25.1
87	0	1.04E-05	5.25E-02	0.0	27.0
89	10	1.88E-05	9.28E-02	56.6	18.2
92	19	1.71E-05	5.37E-02	201.8	48.0
93	3	2.84E-05	6.55E-03	158	91.9
95	16	8.56E-06	2.24E-01	82	21.1
96	17	9.46E-06	2.37E-01	74.8	18.6
97	0	1.43E-05	2.71E-01	0.0	3.83
98	7	2.24E-05	3.16E-02	97.2	37.2
99	13	1.24E-05	1.59E-01	64.8	18.4
100	6	1.03E-05	4.66E-02	122.8	51.0
101	28	2.41E-05	2.63E-01	43.6	8.7
103	14	2.01E-05	9.74E-02	70.6	19.3
105	6	1.81E-05	1.78E-02	182	75.2
107	7	1.82E-05	4.57E-02	82.7	31.7
110	22	1.91E-05	1.63E-01	69.7	15.4
112	2	1.09E-05	3.31E-02	54.9	38.9
113	6	1.90E-05	3.52E-02	88.3	36.5
114	15	1.31E-05	1.42E-01	79.4	21.1
115	1	1.46E-05	2.03E-02	33.4	33.5
116	5	1.36E-05	1.19E-01	30.3	13.7
121	0	1.09E-05	4.39E-04	0.0	2174.6
122	10	7.07E-06	1.10E-01	125.8	40.4
124	13	1.85E-05	1.13E-01	61.5	17.4
126	29	1.40E-05	4.58E-01	44.6	8.7
130	19	1.69E-05	1.18E-01	93.4	22.9
131	12	1.84E-05	9.37E-02	68.7	20.3
132	17	1.94E-05	1.46E-01	59.2	14.9
135	10	2.41E-05	3.29E-02	123.9	40.1
136	10	1.29E-05	7.62E-02	100	32.2
137	12	1.73E-05	1.15E-01	59.6	17.5
138	19	1.80E-05	7.25E-02	142.4	33.7
139	11	1.48E-05	1.55E-01	47.6	14.6

Table DR15. Molasse Rouge (BA03) AFT data. Ns – number of spontaneous tracks. Errors are fully propagated and given at the 1σ level.

Grain	Ns	Area (cm ²)	238U/43Ca	AFT age (Ma)	Error (1 σ Ma)
1	10	2.42E-05	1.36E-01	30	9.6
4	12	1.44E-05	1.38E-01	59.6	17.4
6	40	1.25E-05	2.34E-01	133.9	22.2
8	8	1.80E-05	4.98E-02	88	31.4
9	6	2.45E-05	4.37E-02	55.2	22.7
10	4	1.85E-05	4.09E-02	52.1	26.2
11	3	2.10E-05	4.25E-02	33.2	19.3
12	10	2.06E-05	1.50E-01	31.9	10.2
13	6	1.88E-05	9.04E-02	34.9	14.3
14	35	1.65E-05	1.89E-01	110.7	19.6
15	8	1.66E-05	4.60E-02	103	36.8
16	8	1.80E-05	1.33E-01	33	11.8
17	6	2.36E-05	4.25E-02	58.9	24.2
18	7	2.11E-05	4.49E-02	72.6	27.7
19	6	1.50E-05	3.64E-02	108.4	45.2
21	0	1.76E-05	3.22E-02	0.0	26.1
23	0	1.64E-05	1.51E-01	0.0	6.02

24	4	2.53E-05	4.71E-02	33.2	16.7
25	2	1.06E-05	8.69E-02	21.5	15.2
26	5	1.79E-05	4.16E-02	66.3	29.8
28	10	2.02E-05	1.29E-01	38	12.2
29	3	1.27E-05	5.79E-02	40.3	23.4
32	12	2.52E-05	1.47E-01	32	9.4
33	4	2.48E-05	4.41E-02	36.2	18.2
34	12	3.07E-05	1.32E-01	29.3	8.6
35	4	2.07E-05	4.07E-02	46.8	23.6
36	17	1.09E-05	1.98E-01	77.9	19.4
38	6	1.86E-05	2.15E-01	14.9	6.1
39	10	3.55E-05	8.42E-02	33.1	10.6
43	3	3.45E-05	4.50E-02	19.1	11.1
46	11	2.20E-05	3.42E-02	143.5	44
48	1	1.92E-05	2.83E-02	18.3	18.3
50	4	2.58E-05	4.27E-02	35.8	18
51	32	1.53E-05	5.87E-01	35.2	6.5
52	3	2.84E-05	4.35E-02	24	13.9
53	6	2.92E-05	4.15E-02	48.9	20.1
54	7	2.09E-05	4.21E-02	78.4	29.9
56	0	2.22E-05	1.30E-01	0.0	5.14
57	8	2.95E-05	5.22E-02	51.3	18.3
58	25	1.54E-05	1.89E-01	84.7	17.8
59	7	4.50E-05	4.73E-02	32.5	12.4
60	11	5.17E-05	3.74E-02	56.1	17.2
61	7	3.05E-05	4.35E-02	52	19.8
63	4	3.91E-05	3.28E-02	30.8	15.5
64	5	2.13E-05	4.22E-02	54.9	24.7
65	10	3.11E-05	4.79E-02	66.2	21.2
67	0	1.95E-05	5.53E-03	0.0	135.0
68	3	1.98E-05	4.48E-02	33.5	19.4
70	2	2.36E-05	4.08E-02	20.5	14.6
72	6	2.62E-05	4.42E-02	51.1	21.0
75	3	1.68E-05	4.09E-02	43	24.9
76	2	7.90E-06	1.01E-01	24.9	17.6
78	5	2.11E-05	4.01E-02	58.4	26.4
79	0	1.08E-05	4.22E-02	0.0	32.42
80	24	3.62E-05	1.23E-01	53.2	11.2
81	3	1.32E-05	4.26E-02	52.6	30.5
82	0	1.28E-05	4.17E-02	0.0	27.75
83	9	2.69E-05	3.25E-02	101.1	34.2
84	3	2.72E-05	3.11E-02	35	20.3
87	7	3.18E-05	4.15E-02	52.4	20.0
88	4	2.45E-05	4.40E-02	36.6	18.4
89	18	1.46E-05	1.58E-01	76.9	18.6
95	3	2.17E-05	4.12E-02	33.1	19.2
97	10	3.04E-05	2.35E-02	137.3	44.0
98	9	2.66E-05	7.56E-02	44.3	14.9
100	3	1.52E-05	3.69E-02	52.8	30.7
101	4	3.49E-05	2.13E-02	53.2	26.8
102	8	2.00E-05	8.44E-02	46.8	16.7
103	8	3.22E-05	6.09E-02	40.2	14.4
105	4	2.27E-05	4.53E-02	38.4	19.4
106	10	2.04E-05	1.46E-01	33.3	10.7
107	3	1.72E-05	3.25E-02	53.1	30.8
108	6	4.09E-05	4.15E-02	34.9	14.4
109	8	1.08E-05	9.45E-02	77.5	27.7
110	17	2.18E-05	1.24E-01	61.7	15.3
111	15	2.77E-05	1.36E-01	39.5	10.4
112	25	1.87E-05	1.38E-01	95.8	19.8

113	3	1.74E-05	7.31E-02	23.3	13.6
116	5	1.43E-05	3.70E-02	93	41.9
117	13	2.25E-05	1.40E-01	40.7	11.5
119	10	1.45E-05	1.27E-01	53.9	17.2
120	11	1.77E-05	1.23E-01	49.8	15.3
121	7	3.32E-05	4.15E-02	50.2	19.1
122	12	2.67E-05	1.16E-01	38.2	11.2
124	10	2.99E-05	1.24E-01	26.8	8.6
125	2	5.50E-05	3.47E-02	10.4	7.4
126	10	2.52E-05	7.82E-02	50	16.0
127	6	2.43E-05	1.25E-01	19.5	8.0
128	9	2.53E-05	4.47E-02	78.4	26.5

Table DR16. Série Grise (BA04) AFT data. Ns – number of spontaneous tracks. Errors are fully propagated and given at the 1σ level.

Grain	Ns	Area (cm ²)	²³⁸ U/ ⁴³ Ca	AFT age (Ma)	Error (1 σ Ma)
2	7	3.49E-05	3.26E-02	60.7	23.1
4	1	4.33E-05	3.41E-03	66.7	66.8
6	7	2.90E-05	1.24E-01	19.3	7.3
7	11	1.69E-05	2.11E-01	30.5	9.3
9	0	1.41E-05	1.91E-03	0.0	510.5
12	4	1.34E-05	6.26E-02	47.3	23.7
15	0	1.07E-05	3.42E-04	0.0	2629.4
19	4	1.69E-05	5.84E-02	40.1	20.1
21	0	1.08E-05	7.04E-05	0.0	6293.1
23	13	2.84E-05	1.43E-01	31.7	8.9
31	0	1.29E-05	2.05E-04	0.0	3254.2
36	2	1.77E-05	5.68E-02	19.6	13.9
37	4	3.54E-05	6.58E-02	17	8.5
41	2	2.67E-05	3.23E-02	22.9	16.2
45	3	1.38E-05	4.65E-02	46.2	26.7
50	0	1.44E-05	4.85E-05	0.0	6549.7

Table DR17. Grès Verts (BA05) AFT data. Ns – number of spontaneous tracks. Errors are fully propagated and given at the 1σ level.

Grain	Ns	Area (cm ²)	²³⁸ U/ ⁴³ Ca	AFT age (Ma)	Error (1 σ Ma)
1	6	2.00E-05	4.07E-02	72.5	29.7
2	5	1.16E-05	1.16E-01	36.8	16.6
4	2	2.96E-05	2.54E-03	258.5	183.3
5	3	1.94E-05	5.76E-02	26.5	15.3
11	3	2.85E-05	7.24E-03	142.8	82.8
13	3	3.53E-05	2.01E-02	41.7	24.1
14	0	2.42E-05	5.61E-03	0.0	107.7
15	6	1.85E-05	8.90E-02	36.1	14.8
18	11	3.12E-05	2.91E-02	119	36.2
20	1	1.69E-05	1.24E-02	46.9	47
21	4	2.41E-05	6.34E-02	25.8	13
24	1	2.60E-05	3.62E-02	10.5	10.5
26	7	1.37E-05	1.03E-01	49.4	19.2
29	8	2.06E-05	6.41E-02	59.7	21.2
32	1	1.16E-05	6.66E-02	12.8	12.8
35	1	1.88E-05	2.40E-03	215.6	216
36	3	1.49E-05	6.28E-02	31.7	18.3
37	0	2.94E-05	2.29E-02	0.0	22.0
38	2	1.88E-05	3.02E-02	34.9	24.7
39	3	1.16E-05	1.08E-01	23.8	13.8
40	18	2.84E-05	2.51E-01	25	6.0

44	3	1.27E-05	4.08E-02	57.1	33.1
45	0	7.77E-06	2.31E-03	0.0	738.5
46	6	2.90E-05	4.60E-02	44.4	18.4
48	4	2.40E-05	5.06E-02	32.6	16.4
51	3	1.19E-05	1.30E-02	190.7	110.5
52	0	2.52E-05	3.34E-02	0.0	17.7
57	4	1.60E-05	2.41E-02	102	51.2
59	0	1.04E-05	3.08E-03	0.0	434.0
62	16	1.35E-05	3.66E-01	32	8.1
63	2	1.51E-05	5.85E-02	22.4	15.9
64	0	2.92E-05	2.17E-03	0.0	227.0
65	7	3.42E-05	6.58E-02	30.7	11.9
69	12	1.49E-05	2.73E-01	29.3	8.5
72	5	1.53E-05	5.02E-02	64.2	28.9
73	13	3.36E-05	1.52E-01	25.3	7.1
74	4	1.47E-05	6.15E-02	43.7	21.9
78	9	2.06E-05	1.70E-01	25.4	8.5
80	7	2.84E-05	3.51E-02	69.3	26.3
82	2	1.65E-05	9.25E-03	128.6	91.1
85	7	1.88E-05	1.29E-01	28.6	10.9
87	5	1.74E-05	8.74E-02	32.5	14.6
90	1	2.01E-05	4.11E-02	12.0	12.0
91	7	9.34E-06	8.00E-02	92.2	35.0
92	4	1.26E-05	2.92E-02	106.4	53.4
94	6	1.08E-05	1.20E-01	45.8	18.8
95	1	2.27E-05	1.89E-02	23.0	23.0
97	0	2.20E-05	5.09E-03	0.0	130.2
98	5	2.57E-05	3.15E-02	60.8	27.3
102	5	2.03E-05	4.23E-02	57.5	25.8
104	1	1.72E-05	1.94E-02	29.5	29.6
105	2	1.87E-05	2.79E-02	37.8	26.9
106	6	1.86E-05	1.02E-01	31.3	12.8
108	2	1.60E-05	2.85E-02	43.3	30.6
110	5	1.45E-05	6.55E-02	51.9	23.3
112	4	1.24E-05	5.08E-02	62.5	31.5
114	10	2.80E-05	1.74E-01	20.3	6.5
115	2	2.24E-05	4.72E-03	185.3	131.3
120	3	2.40E-05	1.11E-02	111.0	64.3
122	2	2.73E-05	4.88E-02	14.8	10.5
123	0	1.82E-05	2.08E-02	0.0	39.1
124	6	3.92E-05	2.47E-02	61.0	25.0
125	3	2.74E-05	8.45E-02	12.8	7.4
127	4	2.94E-05	2.61E-02	51.6	25.9
128	11	2.49E-05	9.84E-02	44.4	13.5
129	3	2.33E-05	4.51E-02	28.3	16.4
130	9	1.51E-05	2.15E-01	27.5	9.3
131	16	2.58E-05	3.46E-01	17.7	4.5
132	3	2.28E-05	5.44E-02	24.0	13.9
133	5	2.81E-05	2.11E-02	83.2	37.4
134	13	2.07E-05	1.94E-01	32.0	8.9
135	9	2.26E-05	9.85E-02	40.1	13.5

Table DR18. Molasse Marine 4 (VA02) AFT data. Ns – number of spontaneous tracks. Errors are fully propagated and given at the 1σ level.

Grain	Ns	Area (cm ²)	²³⁸ U/ ⁴³ Ca	AFT age (Ma)	Error (1 σ Ma)
3	0	4.29E-05	2.75E-03	0.0	123.9
4	2	1.98E-05	8.87E-03	111.8	79.3
7	0	1.19E-05	6.69E-03	0.0	181.3
8	4	2.38E-05	1.08E-01	15.4	7.7

9	1	1.02E-05	1.84E-02	52.6	52.7
11	3	1.82E-05	1.99E-02	81.5	47.2
12	5	2.78E-05	1.54E-01	11.6	5.2
14	9	2.06E-05	1.80E-01	24.0	8.1
17	15	2.47E-05	2.47E-01	24.3	6.3
18	0	1.32E-05	5.28E-03	0.0	206.4
23	6	3.04E-05	4.04E-02	48.3	19.8
29	2	2.53E-05	1.71E-02	45.7	32.3
30	0	2.39E-05	3.90E-05	0.0	5753.0
33	14	2.51E-05	2.60E-01	21.2	5.7
34	6	1.44E-05	4.78E-02	85.7	35.2
35	14	1.45E-05	1.86E-01	51.4	13.9
36	7	1.76E-05	1.62E-01	24.2	9.2
37	7	1.49E-05	1.57E-01	29.6	11.3
38	13	1.47E-05	2.72E-01	32.1	9.0
40	3	1.68E-05	6.76E-02	26.2	15.1
41	1	1.09E-05	2.10E-02	43.0	43.0
43	25	1.14E-05	2.04E-01	106.0	21.6
44	14	1.31E-05	8.95E-01	11.8	3.2
46	10	2.50E-05	1.87E-01	21.2	6.7
47	9	9.89E-06	8.67E-02	103.2	34.6
48	9	1.45E-05	1.89E-01	32.4	10.9
49	2	1.61E-05	7.39E-02	16.7	11.8
50	5	2.54E-05	4.89E-02	39.9	17.9
51	4	2.47E-05	4.61E-02	34.7	17.4
52	20	1.16E-05	2.50E-01	68.0	15.4
53	10	3.36E-05	8.27E-02	35.5	11.3
56	4	1.34E-05	6.22E-02	47.4	23.8
57	6	2.67E-05	2.05E-01	10.9	4.4
59	0	1.05E-05	7.79E-03	0.0	176.2
60	5	2.34E-05	8.23E-02	25.7	11.5
61	24	2.28E-05	4.32E-01	24.1	5.1
64	11	1.07E-05	6.62E-01	15.4	4.7
65	5	1.79E-05	9.16E-02	30.2	13.5
66	27	1.73E-05	2.99E-01	51.6	10.1
67	3	9.44E-06	1.04E-02	295.0	170.8
69	9	1.48E-05	3.31E-01	18.1	6.1
72	13	1.40E-05	1.43E-01	64.3	18.0
73	2	1.61E-05	1.12E-01	11.0	7.8
75	17	1.92E-05	2.20E-01	39.7	9.8
76	4	2.22E-05	2.30E-02	77.4	38.8
77	24	1.93E-05	1.03E-01	118.7	24.6
78	8	2.48E-05	7.10E-02	44.9	16.0
79	8	1.99E-05	5.25E-02	75.5	26.8
82	7	1.43E-05	9.97E-02	48.5	18.4
83	1	1.73E-05	5.59E-03	101.5	101.6
84	9	3.18E-05	1.60E-01	17.5	6.1
85	3	1.59E-05	1.69E-01	11.1	6.4
89	2	4.81E-05	5.71E-03	71.8	50.9
92	3	1.53E-05	2.90E-02	66.7	38.6
94	6	2.77E-05	8.14E-02	26.3	10.8
95	8	2.36E-05	2.28E-01	14.7	5.2
96	16	1.17E-05	5.56E-01	24.4	6.2
98	4	1.71E-05	2.71E-02	85.1	42.7
101	2	3.64E-05	3.39E-02	16.1	11.4
102	1	2.60E-05	1.78E-03	211.0	211.7
103	3	1.35E-05	5.30E-02	41.4	23.9
104	7	2.69E-05	9.12E-02	28.2	10.7
109	3	1.19E-05	5.43E-02	45.8	26.5
111	2	1.66E-05	3.69E-02	32.3	22.8

112	0	2.03E-05	1.09E-02	0.0	66.7
113	24	1.63E-05	4.95E-01	29.5	6.2
114	3	1.08E-05	1.14E-01	24.1	14.0
120	4	8.41E-06	1.41E-01	33.4	16.8
121	4	1.84E-05	4.10E-02	52.4	26.3
123	2	1.61E-05	3.32E-02	36.9	26.2
124	9	1.55E-05	1.12E-01	51.5	17.3
125	5	2.04E-05	2.03E-02	118.7	53.3
127	0	2.12E-05	1.60E-05	0.0	8644.1
128	5	1.97E-05	5.75E-02	43.6	19.7
129	2	4.20E-05	2.63E-03	176.5	125.2
130	8	1.39E-05	1.11E-01	51.0	18.2
131	36	1.12E-05	8.49E-01	37.3	6.3
132	5	2.06E-05	6.72E-02	35.8	16.1
134	12	2.48E-05	8.49E-02	56.3	16.4

Table DR19. Lower Conglomérat de Valensole (VA03) AFT data. Ns – number of spontaneous tracks. Errors are fully propagated and given at the 1σ level.

Grain	Ns	Area (cm ²)	²³⁸ U/ ⁴³ Ca	AFT age (Ma)	Error (1σ Ma)
g8	10	3.09E-05	1.14E-01	28.1	9.0
g10	3	1.86E-05	2.24E-02	71.1	41.1
g12	11	1.09E-05	8.85E-02	112.5	34.2
g14	1	8.74E-06	1.14E-02	98.4	98.5
g15	7	1.97E-05	1.35E-01	26.1	9.9
g19	10	2.41E-05	8.27E-02	49.5	15.8
g21	6	1.15E-05	8.31E-02	61.9	25.4
g22	2	2.01E-05	5.47E-02	18	12.7
g26	12	1.93E-05	7.91E-02	77.5	22.5
g27	8	1.39E-05	1.41E-01	40.4	14.3
g28	0	1.58E-05	8.41E-03	0.0	109.8
g29	3	1.19E-05	4.74E-02	52.4	30.3
g30	8	1.49E-05	1.47E-01	36.1	12.8
g33	1	1.39E-05	2.73E-02	26.0	26.1
g34	4	3.54E-05	3.07E-02	36.5	18.3
g36	5	2.00E-05	1.06E-01	23.3	10.5
g40	3	1.03E-05	1.13E-01	25.6	14.8
g41	4	5.25E-05	1.85E-02	40.6	20.4
g42	3	2.13E-05	3.82E-02	36.4	21.1
g44	1	7.04E-06	1.11E-01	12.7	12.7
g49	10	2.93E-05	1.18E-01	28.5	9.1
g51	18	1.85E-05	3.05E-01	31.5	7.5
g53	9	2.63E-05	1.21E-01	28.0	9.4
Bg3	2	1.62E-05	7.99E-02	15.3	10.8
Bg4	5	1.46E-05	8.79E-02	38.5	17.3
Bg5	2	2.08E-05	7.83E-03	120.6	85.5
Bg6	1	6.41E-06	1.78E-01	8.7	8.7
Bg12	12	2.22E-05	1.64E-01	32.6	9.5
Bg14	2	1.33E-05	1.24E-02	118.9	84.2
Bg15	1	8.56E-06	4.68E-02	24.7	24.7
Bg20	5	2.07E-05	1.21E-01	19.7	8.9
Bg26	11	3.91E-05	9.95E-02	28.0	8.5
Bg27	8	3.57E-05	8.58E-02	25.8	9.2