

Table S3. U-Pb calcite and dolomite ages

Sample	Structure	Fracture set	Azimut/Dip	Sparite texture	$^{207}\text{Pb}/^{206}\text{Pb} - ^{238}\text{U}/^{206}\text{Pb}$ (Tera-Wasserburg)						$^{208}\text{Pb}/^{206}\text{Pb} - ^{238}\text{U}/^{206}\text{Pb}$					
					Age (Ma)	$\pm 2\sigma$	MSWD	Upper intercepts	$\pm 2\sigma$	Number of spots	Age (Ma)	$\pm 2\sigma$	MSWD	Upper intercepts	$\pm 2\sigma$	Number of spots
Bx5	Bóixols-Upper Pedraforca	3	356/09	Blocky	55.47	1.22	1.32	0.8218	0.0065	24	53.84	1.20	1.15	2.0069	0.0163	24
Bx16	Bóixols-Upper Pedraforca	2	027/88	Elongated	44.73	4.05	0.45	0.8483	0.0091	23	43.58	5.55	2.07	2.0853	0.0321	23
Bx16b	Bóixols-Upper Pedraforca	2	027/88	Elongated	48.88	3.11	0.89	0.8187	0.0085	23	47.45	2.77	1.16	2.0138	0.0233	23
Bx33	Bóixols-Upper Pedraforca	4	239/50	Elongated	45.68	9.71	0.70	0.8417	0.0081	20	43.64	8.41	1.19	2.0740	0.0212	20
CN38	Bóixols-Upper Pedraforca	1	325/73	Blocky	67.89	3.92	1.02	0.8364	0.0110	27	62.14	4.49	0.99	1.9963	0.0336	27
MGT9	Bóixols-Upper Pedraforca	5	283/65	Blocky	12.68	2.89	0.96	0.8234	0.0039	23	13.82	2.29	1.49	2.0493	0.0105	23
MGT9b	Bóixols-Upper Pedraforca	5	283/65	Blocky	18.47	0.49	1.38	0.8232	0.0092	27	18.42	0.47	1.37	2.0524	0.0230	27
P2	Bóixols-Upper Pedraforca	4	265/40	Elongated	68.17	2.03	0.59	0.8441	0.0135	32	68.12	2.57	1.68	2.0754	0.0465	32
P4	Bóixols-Upper Pedraforca	3	010/45	Blocky/elongated	70.63	0.91	0.83	0.8284	0.0021	20	69.82	0.94	0.58	2.0452	0.0068	20
P8a	Bóixols-Upper Pedraforca	1	080/72	Elongated	62.71	0.78	1.22	0.8107	0.0025	59	63.07	1.27	1.88	1.9958	0.0121	59
P8b	Bóixols-Upper Pedraforca	1	080/72	Blocky	35.86	2.81	1.41	0.8126	0.0030	12	35.71	3.13	1.14	2.0061	0.0144	12
P8c	Bóixols-Upper Pedraforca	1	080/72	Blocky	32.58	4.04	1.11	0.7834	0.0197	16	27.02	4.19	0.82	1.7812	0.0606	16
P9a	Bóixols-Upper Pedraforca	-	-	Blocky	37.11	0.68	0.75	0.8235	0.0023	26	37.09	0.70	1.13	2.0261	0.0082	26
P9b	Bóixols-Upper Pedraforca	-	-	Blocky	34.40	0.86	1.58	0.8132	0.0049	27	33.56	1.09	1.96	1.9829	0.0219	27
P11a	Bóixols-Upper Pedraforca	1	093/89	Blocky	47.00	10.54	1.56	0.8149	0.0073	13	44.22	11.03	1.53	2.0092	0.0256	13
P11b	Bóixols-Upper Pedraforca	1	093/89	Blocky	38.82	1.12	0.89	0.8167	0.0022	21	38.57	1.32	0.88	2.0133	0.0080	21
P12a	Bóixols-Upper Pedraforca	3	145/56	Blocky/elongated	25.68	1.96	3.23	0.8132	0.0151	12	26.02	2.33	3.44	2.0391	0.0570	12
P12b	Bóixols-Upper Pedraforca	3	145/56	Blocky/elongated	15.38	1.06	0.81	0.8186	0.0042	15	14.62	1.17	1.04	2.0111	0.0141	15
P14	Bóixols-Upper Pedraforca	4	214/76	Blocky/elongated	38.24	1.42	1.37	0.8379	0.0090	28	37.99	1.35	1.01	2.0787	0.0243	28
P21	Bóixols-Upper Pedraforca	3	119/36	Blocky	31.12	1.39	1.57	0.8087	0.0031	24	30.92	1.07	1.53	1.9931	0.0067	24
P24	Bóixols-Upper Pedraforca	1	064/69	Blocky	35.11	1.77	0.90	0.8341	0.0025	13	35.63	2.42	1.88	2.0677	0.0109	13
P44	Bóixols-Upper Pedraforca	1	084/67	Blocky	34.98	16.52	1.76	0.8166	0.0055	23	32.22	15.44	1.63	2.0204	0.0180	23
P63	Bóixols-Upper Pedraforca	2	177/60	Blocky	55.32	0.54	0.86	0.8103	0.0040	25	55.50	0.52	1.01	2.0032	0.0108	25
EST2	Lower Pedraforca	5	240/66	Blocky	30.03	1.37	0.85	0.8375	0.0074	20	30.86	1.74	1.83	2.0958	0.0269	20
G3	Lower Pedraforca	1	078/49	Blocky/elongated	41.66	0.56	1.07	0.7552	0.0156	33	41.75	0.53	1.32	1.8342	0.0368	33
G3b	Lower Pedraforca	1	078/49	Blocky/elongated	41.54	0.69	1.16	0.7036	0.0039	20	41.73	0.67	1.25	1.7184	0.0100	20
G15b	Lower Pedraforca	3	182/58	Elongated	13.40	1.49	1.15	0.7881	0.0067	20	12.71	2.20	2.70	1.9241	0.0285	20
Q3-1	Lower Pedraforca	3	259/45	Blocky	47.02	1.00	1.51	0.8831	0.0316	23	47.23	1.01	0.68	2.1920	0.0951	23

Q11	Lower Pedraforca	1	149/89	Blocky	48.25	1.28	1.79	0.8122	0.0294	29	48.25	1.17	1.52	2.0632	0.0756	29
Q24	Lower Pedraforca	3	328/39	Elongated	44.71	1.12	0.87	0.8322	0.0028	32	45.90	1.23	1.00	2.0600	0.0095	32
Q27	Lower Pedraforca	1	100/84	Blocky	46.98	1.12	1.21	0.8462	0.0194	25	47.59	1.44	1.57	2.0747	0.0666	25
Q29	Lower Pedraforca	3	279/87	Blocky	47.70	0.78	1.59	0.8302	0.0147	27	47.90	1.01	2.71	2.0712	0.0566	27
Q33	Lower Pedraforca	1	092/80	Blocky	45.10	1.17	1.21	0.8774	0.0059	23	44.47	1.10	1.24	2.1056	0.0167	23
B2b	Cadí	5	033/26	Elongated	29.29	1.75	1.12	0.8648	0.0174	22	31.39	1.59	0.63	2.1728	0.0407	22
B22	Cadí	2	355/71	Elongated	36.18	2.05	1.54	0.8212	0.0185	38	36.70	2.01	1.65	2.0560	0.0480	38
B32	Cadí	1	099/78	Blocky	28.37	0.77	1.24	0.8254	0.0060	26	31.54	1.43	1.19	2.0498	0.0197	17
B46	Cadí	1	295/68	Blocky	25.88	8.94	1.43	0.8172	0.0085	24	27.20	6.80	1.11	2.0188	0.0217	24
B54	Cadí	1	113/66	Blocky	33.28	8.99	1.38	0.8254	0.0227	25	41.65	7.71	1.33	2.0223	0.0600	25
B57	Cadí	2	165/78	Elongated	36.72	1.50	1.08	0.8666	0.0191	43	37.50	2.13	1.88	2.0464	0.0720	43
GDV5	Cadí	3	080/22	Blocky	36.20	1.08	1.52	0.8276	0.0031	20	34.08	1.58	1.71	2.0550	0.0151	20
GIS4	Cadí	1	290/79	Blocky	35.12	2.40	0.97	0.8386	0.0031	29	36.47	2.18	1.43	2.0759	0.0093	29
GIS4b	Cadí	1	290/79	Blocky	34.37	1.20	0.94	0.8446	0.0076	12	36.50	1.16	0.68	2.0762	0.0223	12
GIS10a	Cadí	1	261/49	Blocky	33.84	6.00	0.36	0.8260	0.0152	15	30.17	5.51	0.96	2.0350	0.0356	15
Pa12	Cadí	3	347/46	Blocky	15.12	0.34	1.69	0.8396	0.0070	21	15.12	0.37	2.20	2.0756	0.0228	21
C12	Axial zone	2	010/63	Blocky	4.61	4.59	0.68	0.8353	0.0024	24	2.52	0.71	0.81	2.0707	0.0072	24
GPR401	Ebro basin	-	-	Blocky	2.83	1.79	1.10	0.8358	0.0014	22	4.25	1.71	0.53	2.0752	0.0050	22
