

APPENDIX A

Samples for detrital zircon analysis

Sample V11-81: Massive metagreywacke from the Greyish green lithofacies (65°53'36.7"W, 40°49'48.3"S, [Figs. 2 and 5a-d](#)). The sample is from the country rock of the sill dated by [Greco et al. \(2015\)](#).

Sample V11-170: Laminated metagreywacke interbedded with grey phyllites, from the yellowish brown lithofacies (65°49'59"W, 40°49'23.4"S, [Figs. 2 and 6a](#)).

Sample V11-51: Massive metagreywacke interbedded with metaarenites and thin levels of metatuffs from the red lithofacies (65°54'23"W, 40°49'13"S, [Figs. 2, 6b, c and d](#)). It is the country rock of a large metamafic sill.

Relict sedimentary features (e.g. detrital grains, sorting, and grain size) and fabric elements that define the S_1 - S_2 cleavage of the samples are equivalent to those described in Section 4.

LA-MC-ICPMS U-Pb analytical procedure and method of zircon grain characterization

We performed primary reduction of the samples and concentration of detrital zircons in the laboratories of the Centro de Investigaciones Geológicas (Universidad Nacional de La Plata-CONICET). Each sample consisted in 10 kg of rock. To begin, we crushed the samples with a jaw-crusher in order to obtain a fine material. After that, we sieved the fine material and used the fractions that passed through the 180 μ m sieve for concentration of heavy minerals by hydraulic processes and magnetic susceptibility techniques. Over nonmagnetic fractions, we handpicked with a stereomicroscope approximately two hundred detrital zircons from each sample in a random fashion with no regard for color, size, shape and degree of roundness.

U-Pb analyses of the detrital zircons were carried out in the Centro de Pesquisas Geocronológicas (CPGeo), Instituto de Geociências, USP, Brasil. Prior to the U-Pb analyses, the zircons were mounted in an epoxy resin disc and documented with Secondary Electrons (SE), Cathodoluminescence (CL) and stereomicroscope images. The U-Pb analyses were conducted with a Thermo-Fisher Neptune laser-ablation multi-collector inductively coupled plasma mass spectrometer equipped with a 193 Photon laser system (LA-MC-ICPMS). Analytical method follows

those described by (Sato et al., 2010). Laser spot used was 32 μm in diameter. Over the fraction of handpicked detrital zircons, we chose grains by random selection and used all the images to select sites for analytical spots within them. In grains with multiple igneous-metamorphic growths, we executed the U-Pb analyses in their edges in order to examine the last event represented in each zircon. Although this technique reduces the dating of inherited zircon cores, it records adequately the principal igneous and metamorphic components in source areas and gives the best constraint on depositional age (Goodge et al., 2002, 2004). We determined the ages using either $^{206}\text{Pb}/^{238}\text{U}$ or $^{207}\text{Pb}/^{206}\text{Pb}$, depending on the age of the spot analyzed (zircon grains with ages of ≥ 1300 Ma, using $^{207}\text{Pb}/^{206}\text{Pb}$ and ≤ 1300 Ma, using $^{206}\text{Pb}/^{238}\text{U}$). Then, as all analyses showed low discordance ($< 10\%$), we filtered only those with more than 6 % of ^{206}Pb of common origin. Concordia diagrams, relative probability plots and frequency histograms representing the U-Pb analyses were produced with ISOPLOT/Ex (Ludwig, 2008). Normalized relative probability plots were constructed using an Arizona LaserChron Center Excel macro (available from www.geo.arizona.edu/alc).

The igneous or metamorphic origin of each zircon is interpreted following the method described by Goodge et al. (2004), based on their internal structure and Th/U values. For example, a zircon grain with oscillatory and sector zoning in Cathodeluminescence images and Th/U > 0.2 is interpreted as igneous in origin. By contrast, a grain with homogeneous and recrystallization internal structure and Th/U < 0.2 is inferred as metamorphic in origin. In general terms, this distinction works, although some zircon grains present Th/U ration slightly higher to 0.2 but their internal structure indicates a metamorphic origin. Moreover other grains exhibit typically magmatic internal structures such as oscillatory and sector zoning but their Th/U is < 0.2 .

Maximum depositional ages were determined in two ways, from statistically robust methods considering multiple grain ages. On the one hand, when a youngest cluster of three or more grain ages is clearly identified, we simply determined the maximum depositional age calculating the weighted-mean age of this discrete cluster with ISOPLOT/Ex. On the other hand, when a youngest cluster of three or more grain ages is not clearly separated from a contiguous group with slightly older ages because of there are transitional grain ages between them and thus the two groups seem to belong to the same distribution, we utilized the Unmix routine in ISOPLOT/Ex. This Unmix routine is a method for determining multiple components in a distribution of ages (Ludwig, 2008). This method also calculates the age and uncertainties for each component. In this case, we determined the maximum depositional age calculating the youngest Unmix age

provided by the Unmix routine applied to the youngest components of the distribution of detrital zircon ages. This routine produced reliable results in determination of maximum depositional ages from detrital zircon data (e.g. [Brown and Gehrels, 2007](#); [Colpron et al., 2015](#); [Orme and Laskowski, 2016](#)).

In addition to the LA-MC-ICPMS U-Pb studies, we characterized each analyzed zircon on the basis of their shape, aspect ratio (length/width values) and degree of roundness, using the SE and stereomicroscope images.

Table A.1: LA-MC-ICPMS U-Pb results of the sample V11-81

Spot	Site;Shape;CL; Roundness	Length (µm)	Width (µm)	Aspect ratio	MC	U (ppm)	Th (ppm)	Th/U	% 206 Pb common	Ratios								Ages (Ma)				% Conc.	Origin	
										238U/206Pb	error	207Pb/206Pb	error	207Pb/235U	error	206Pb/238U	error	error correl.	206Pb/238U	±	207Pb/206Pb			±
2.1	e;ov;sz;rd	159.5	112.6	1.4	5	149.9	191.3	1.28	0.02	11.20	0.1880	0.0587	0.0004	0.7206	0.0158	0.0893	0.0015	0.77	551	8.9	549.5	15.8	100	I
3.1	e;st;osz;sr	158.2	103.2	1.5	4	322.8	19.3	0.06	4.09	10.11	0.1727	0.0603	0.0003	0.8159	0.0180	0.0990	0.0017	0.78	608	9.9	609.4	11.9	100	I
4.1	e;st;osz;sr	160.5	88.5	1.8	4	175.2	44.1	0.25	1.57	6.48	0.1092	0.0706	0.0004	1.5040	0.0317	0.1543	0.0026	0.80	925	14.5	945.1	12.0	98	I
5.1	e;eq;hd;sr	125.0	115.1	1.1	6	180.3	309.7	1.72	0.18	11.25	0.1878	0.0586	0.0004	0.7286	0.0158	0.0889	0.0015	0.77	549	8.8	547.7	15.6	100	I
7.1	e;eq;r;ho;sr	151.6	124.5	1.2	6	219.8	151.3	0.69	0.19	10.37	0.1745	0.0599	0.0003	0.7926	0.0167	0.0965	0.0016	0.80	594	9.5	594.4	10.7	100	M
8.1	e;eq;hd;rd	115.7	115.4	1.0	7	285.1	17.1	0.06	0.30	10.83	0.1804	0.0592	0.0003	0.7545	0.0158	0.0924	0.0015	0.80	570	9.1	567.9	12.1	100	M
9.1	e;eq;osz;sr	117.4	112.4	1.0	6	219.3	78.5	0.36	0.49	10.02	0.1668	0.0604	0.0003	0.8440	0.0176	0.0998	0.0017	0.80	613	9.7	611.7	11.8	100	I
10.1	e;st;osz;sr	128.0	90.6	1.4	4	533.2	177.6	0.33	0.82	5.70	0.0951	0.0741	0.0004	1.7846	0.0372	0.1753	0.0029	0.80	1041	16.0	1044.3	9.8	100	I
11.1	e;ov;osz;rd;	127.3	94.2	1.4	5	162.8	92.0	0.56	1.96	5.77	0.0973	0.0736	0.0004	1.7688	0.0373	0.1734	0.0029	0.80	1031	16.1	1031.7	10.4	100	I
12.1	e;st;hd;sr	129.8	97.7	1.3	4	345.6	98.4	0.28	0.28	10.61	0.1766	0.0596	0.0003	0.7721	0.0161	0.0943	0.0016	0.80	581	9.2	582.4	10.6	100	M
13.1	e;st;hb;sr	149.4	91.5	1.6	4	91.8	29.9	0.33	0.11	10.90	0.1884	0.0592	0.0006	0.7341	0.0179	0.0917	0.0016	0.71	566	9.4	566.3	23.0	100	M
14.1	e;ov;zs;osc;rd	124.4	91.8	1.4	5	194.7	108.5	0.56	3.01	10.96	0.0739	0.0590	0.0005	0.7455	0.0087	0.0913	0.0006	0.58	563	3.6	560.9	18.0	100	I
15.1	e;ov;r;ho;rd	134.0	90.1	1.5	5	202.4	110.6	0.55	2.02	10.42	0.0685	0.0598	0.0005	0.7887	0.0084	0.0960	0.0006	0.62	591	3.7	589.3	16.4	100	M
16.1	e;ov;hd;rd	141.7	87.1	1.6	5	222.3	34.6	0.16	<0.001	10.35	0.0802	0.0599	0.0007	0.7953	0.0126	0.0966	0.0007	0.49	594	4.4	593.7	25.2	100	M
18.1	e;st;r;ho;sr	146.8	96.0	1.5	4	244.3	70.0	0.29	1.95	5.54	0.0354	0.0750	0.0003	1.8777	0.0157	0.1806	0.0012	0.77	1070	6.3	1070.7	9.4	100	M
19.1	e;p;r;osc;sr	152.5	75.4	2.0	2	93.2	35.9	0.39	1.93	2.26	0.0150	0.1697	0.0008	10.3504	0.0902	0.4422	0.0029	0.76	2360	13.1	2553.6	7.9	92	I
20.1	e;st;hc;a;sr	137.2	90.6	1.5	4	58.2	17.2	0.29	5.28	11.59	0.1090	0.0582	0.0015	0.6812	0.0207	0.0863	0.0008	0.31	533	4.8	532.2	54.9	100	M
21.1	e;eq;hd;rd	112.2	91.3	1.2	7	213.9	79.0	0.37	<0.001	5.07	0.0326	0.0785	0.0004	2.1312	0.0169	0.1972	0.0013	0.81	1160	6.8	1163.8	9.0	100	M
22.1	e;eq;ho;zs;rd	107.0	93.4	1.1	7	393.4	297.5	0.76	0.03	10.48	0.0688	0.0598	0.0003	0.7872	0.0067	0.0954	0.0006	0.77	588	3.7	589.1	10.3	100	I
24.1	e;ov;hd;rd	117.8	91.5	1.3	5	709.7	89.4	0.13	<0.001	9.68	0.1301	0.0610	0.0003	0.8706	0.0128	0.1033	0.0014	0.90	634	8.1	632.0	11.0	100	M
25.1	e;ov;osz;rd	127.1	96.7	1.3	5	135.7	108.1	0.80	4.10	5.10	0.0333	0.0783	0.0004	2.1165	0.0182	0.1960	0.0013	0.76	1154	6.9	1157.1	10.2	100	I
26.1	m;p;sz;sr	148.4	70.3	2.1	2	135.2	33.6	0.25	5.10	10.52	0.0780	0.0597	0.0006	0.7621	0.0093	0.0950	0.0007	0.60	585	4.1	585.0	20.7	100	I
27.1	e;p;osz;sr	157.6	80.6	2.0	2	159.3	53.6	0.34	0.30	6.22	0.0367	0.0712	0.0005	1.5743	0.0181	0.1608	0.0009	0.51	961	5.3	963.7	15.5	100	I
30.1	m;p;hd;sr	164.3	64.1	2.6	2	260.1	26.0	0.10	<0.001	11.38	0.0660	0.0585	0.0004	0.7016	0.0084	0.0879	0.0005	0.48	543	3.0	543.3	16.5	100	I
31.1	e;p;sz;sr	141.2	59.8	2.4	2	518.7	47.0	0.09	0.71	7.25	0.0618	0.0684	0.0005	1.2998	0.0178	0.1379	0.0012	0.62	833	6.7	879.3	14.4	95	I
32.1	e;st;osc;hc;sr	142.5	87.8	1.6	4	51.4	20.6	0.40	5.30	5.92	0.0400	0.0727	0.0008	1.6995	0.0267	0.1689	0.0011	0.43	1006	6.3	1006.5	22.1	100	M
33.1	e;p;sz;sr	145.9	62.8	2.3	2	160.6	52.2	0.33	3.52	8.35	0.0776	0.0641	0.0006	1.0756	0.0196	0.1198	0.0011	0.51	730	6.4	739.8	20.4	99	I

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Table A.1: LA-MC-ICPMS U-Pb results of the sample V11-81

Spot	Site;Shape;CL; Roundness	Length (µm)	Width (µm)	Aspect ratio	MC	U (ppm)	Th (ppm)	Th/U	% 206 Pb common	Ratios								Ages (Ma)				% Conc.	Origin	
										238U/206Pb	error	207Pb/206Pb	error	207Pb/235U	error	206Pb/238U	error	error correl.	206Pb/238U	±	207Pb/206Pb			±
34.1	e;p;sz;sr	160.1	75.5	2.1	2	176.1	11.6	0.07	0.63	5.84	0.0420	0.0732	0.0005	1.7322	0.0212	0.1712	0.0012	0.59	1019	6.8	1021.1	14.1	100	I
35.1	e;p;a,osc;sr	130.5	62.3	2.1	2	379.7	8.3	0.02	5.52	10.59	0.0655	0.0603	0.0005	0.7994	0.0143	0.0944	0.0006	0.35	581	3.4	607.3	17.7	96	I
37.1	e;p;osz;sr	138.7	59.7	2.3	2	561.9	154.6	0.28	2.79	5.60	0.0319	0.0746	0.0005	1.8306	0.0197	0.1785	0.0010	0.53	1059	5.6	1059.0	13.9	100	I
38.1	e;st;osz;sr	142.9	89.3	1.6	4	70.7	64.3	0.91	2.45	2.81	0.0169	0.1231	0.0009	6.0397	0.0647	0.3557	0.0021	0.56	1962	10.2	2000.8	12.5	98	I
39.1	e;st;hd;sr	131.6	78.7	1.7	4	200.1	1.1	0.01	1.14	9.95	0.0776	0.0605	0.0004	0.8296	0.0104	0.1005	0.0008	0.62	617	4.6	616.9	15.9	100	M
40.1	e;p;osz;sr	192.8	73.5	2.6	2	163.9	67.6	0.41	2.76	8.01	0.0806	0.0646	0.0006	1.0994	0.0147	0.1248	0.0013	0.75	758	7.2	756.3	20.4	100	I
41.1	e;st;a,ho;sr	118.0	80.5	1.5	4	141.3	35.7	0.25	<0.001	11.61	0.1112	0.0582	0.0007	0.6886	0.0084	0.0861	0.0008	0.79	532	4.9	530.1	24.9	100	M
42.1	e;ov;hd;osz;rd	114.4	90.4	1.3	5	297.3	15.5	0.05	0.30	9.83	0.0986	0.0607	0.0005	0.8417	0.0108	0.1018	0.0010	0.78	625	6.0	623.5	19.3	100	M
43.1	m;eq;sz;rd	117.9	105.0	1.1	7	121.0	48.1	0.40	<0.001	8.63	0.1043	0.0631	0.0006	1.0018	0.0144	0.1159	0.0014	0.84	707	8.1	707.0	20.1	100	I
44.1	e;eq;sz;sr	108.0	91.3	1.2	6	139.8	109.4	0.78	4.83	11.95	0.1144	0.0579	0.0007	0.6634	0.0099	0.0837	0.0008	0.64	518	4.8	521.1	27.0	99	I
45.1	e;st;osz;sr	135.7	71.9	1.9	4	206.2	261.9	1.27	0.94	11.11	0.1052	0.0588	0.0005	0.7328	0.0082	0.0900	0.0009	0.85	556	5.0	554.1	19.2	100	I
46.1	e;ov;hd;rd	113.4	86.4	1.3	5	294.0	46.8	0.16	0.15	11.00	0.1002	0.0590	0.0005	0.7372	0.0077	0.0909	0.0008	0.87	561	4.9	559.1	17.7	100	M
47.1	e;eq;hd;sr	98.8	87.9	1.1	6	352.0	60.1	0.17	1.10	5.43	0.0496	0.0758	0.0006	1.9403	0.0198	0.1842	0.0017	0.90	1090	9.2	1091.0	16.4	100	M
48.1	c;p;osz;sr	140.5	52.3	2.7	2	318.0	162.5	0.51	3.04	5.72	0.0519	0.0739	0.0006	1.7901	0.0180	0.1748	0.0016	0.90	1039	8.7	1040.7	16.4	100	I
49.1	e;p;osz;sr	137.4	69.1	2.0	2	64.8	67.2	1.04	2.14	3.14	0.0295	0.1138	0.0010	5.0161	0.0550	0.3189	0.0030	0.86	1784	14.7	1863.2	15.2	96	I
50.1	e;p;osz;sr	132.5	59.2	2.2	2	327.1	104.2	0.32	3.51	5.81	0.0531	0.0733	0.0006	1.7206	0.0185	0.1720	0.0016	0.85	1023	8.6	1023.3	17.5	100	I
51.1	e;st;hd;sr	123.3	74.0	1.7	4	511.9	84.9	0.17	5.50	11.18	0.1081	0.0588	0.0006	0.7237	0.0086	0.0894	0.0009	0.81	552	5.1	553.5	21.7	100	M
52.1	m;p;sz;sr	130.7	59.1	2.2	2	264.2	-12.7	-0.05	<0.001	9.88	0.0947	0.0607	0.0005	0.8363	0.0093	0.1012	0.0010	0.87	622	5.7	621.1	17.5	100	I
55.1	e;ov;a,osc;rd	128.3	90.5	1.4	5	212.0	124.0	0.58	2.00	11.25	0.0800	0.0587	0.0010	0.7069	0.0118	0.0889	0.0006	0.43	549	3.7	549.0	36.7	100	I
56.1	e;ov;osz;rd	123.7	84.3	1.5	5	231.0	60.2	0.26	2.83	8.28	0.0536	0.0639	0.0004	1.1134	0.0117	0.1208	0.0008	0.62	735	4.5	734.4	14.0	100	I
57.1	m;p;hd;sr	131.0	64.0	2.0	2	435.7	17.7	0.04	0.67	5.83	0.0363	0.0733	0.0003	1.7365	0.0141	0.1714	0.0011	0.76	1020	5.9	1021.7	7.4	100	M
58.1	e;st;osz;sr	115.9	68.2	1.7	4	260.3	59.6	0.23	0.95	12.01	0.0995	0.0578	0.0005	0.6540	0.0101	0.0832	0.0007	0.54	515	4.1	514.4	17.0	100	I
61.1	e;p;sz;sr	156.0	74.3	2.1	2	375.5	112.3	0.30	0.59	7.81	0.0567	0.0651	0.0003	1.1500	0.0107	0.1280	0.0009	0.78	776	5.3	773.9	9.9	100	I
62.1	e;st;hd;sr	115.6	73.1	1.6	4	61.8	34.1	0.55	0.73	5.85	0.0595	0.0733	0.0011	1.7239	0.0286	0.1711	0.0017	0.61	1018	9.6	1022.1	30.1	100	M
63.1	e;ov;hd;rd	130.7	72.0	1.8	5	212.7	68.9	0.32	4.26	9.76	0.0610	0.0609	0.0004	0.8527	0.0089	0.1025	0.0006	0.60	629	3.7	628.7	15.9	100	M
64.1	e;st;sz;sr	122.6	75.7	1.6	4	322.7	107.8	0.33	3.86	11.98	0.0864	0.0579	0.0004	0.6617	0.0077	0.0834	0.0006	0.62	517	3.6	518.0	14.5	100	I
65.1	e;ov;hd;rd	107.8	79.4	1.4	5	164.0	57.6	0.35	0.89	10.61	0.0709	0.0596	0.0007	0.7718	0.0117	0.0943	0.0006	0.44	581	3.7	582.1	26.4	100	M

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Spot	Site;Shape;CL; Roundness	Length (µm)	Width (µm)	Aspect ratio	MC	U (ppm)	Th (ppm)	Th/U	% 206 Pb common	Ratios								Ages (Ma)				% Conc.	Origin	
										238U/206Pb	error	207Pb/206Pb	error	207Pb/235U	error	206Pb/238U	error	error correl.	206Pb/238U	±	207Pb/206Pb			±
67.1	m;st;sz;sr	110.5	79.5	1.4	4	157.3	78.4	0.50	0.96	5.55	0.0537	0.0751	0.0004	1.8790	0.0239	0.1802	0.0017	0.76	1068	9.5	1071.5	11.6	100	I
68.1	e;st;osz;sr	119.4	74.1	1.6	4	462.0	185.3	0.40	1.32	10.94	0.1053	0.0591	0.0005	0.7410	0.0099	0.0914	0.0009	0.72	564	5.2	565.1	17.2	100	I
70.1	e;st;hd;sr	124.8	92.3	1.4	4	223.9	43.0	0.19	2.94	11.49	0.1142	0.0584	0.0006	0.6934	0.0109	0.0871	0.0009	0.63	538	5.1	538.8	23.3	100	M
71.1	e;ov;a,hc;rd	125.0	84.5	1.5	5	243.4	93.7	0.38	0.45	6.12	0.0627	0.0717	0.0004	1.5703	0.0209	0.1633	0.0017	0.77	975	9.3	977.4	11.7	100	M
72.1	e;st;hd;sr	121.3	72.6	1.7	4	183.4	38.0	0.21	2.91	6.21	0.0598	0.0713	0.0005	1.5761	0.0202	0.1610	0.0015	0.75	962	8.6	964.2	13.4	100	M
73.1	c;eq;hd;rd	95.6	77.3	1.2	7	250.0	181.0	0.72	0.04	2.77	0.0262	0.1218	0.0006	6.0567	0.0721	0.3611	0.0034	0.79	1987	16.1	1982.5	8.2	100	M
74.1	e;eq;a,ho;rd	88.9	76.5	1.2	7	337.4	101.0	0.30	3.80	9.96	0.1017	0.0605	0.0004	0.8403	0.0113	0.1004	0.0010	0.76	617	6.0	614.6	15.8	100	M
75.1	e;ov;sz;rd;	99.2	72.9	1.4	5	340.1	61.2	0.18	2.55	9.80	0.1048	0.0607	0.0005	0.8523	0.0138	0.1020	0.0011	0.66	626	6.4	624.1	17.2	100	I
76.1	e;eq;a,ho;rd	97.0	86.9	1.1	7	487.9	23.1	0.05	0.51	10.49	0.1008	0.0597	0.0003	0.7832	0.0096	0.0953	0.0009	0.78	587	5.4	585.7	11.0	100	M
77.1	e;ov;hd;rd;	100.5	73.7	1.4	5	158.0	104.9	0.66	4.31	4.72	0.0581	0.0814	0.0009	2.3985	0.0448	0.2119	0.0026	0.66	1239	13.9	1235.8	22.5	100	I
78.1	e;ov;hd;rd	94.1	72.8	1.3	5	118.4	26.9	0.23	3.59	6.76	0.0750	0.0687	0.0006	1.3775	0.0214	0.1480	0.0016	0.72	890	9.2	888.7	18.4	100	M
79.1	m;eq;sz;rd	89.1	80.2	1.1	7	315.4	101.8	0.32	<0.001	10.01	0.0569	0.0604	0.0003	0.8272	0.0069	0.0999	0.0006	0.69	614	3.3	612.4	9.4	100	I
80.1	e;eq;hd;rd	90.5	80.4	1.1	7	206.2	44.8	0.22	1.34	5.00	0.0264	0.0804	0.0004	2.2069	0.0189	0.1998	0.0011	0.62	1174	5.7	1211.1	9.0	97	M
81.1	e;eq;sz;rd	91.0	80.5	1.1	7	256.5	218.0	0.85	1.75	10.10	0.0591	0.0603	0.0004	0.8160	0.0086	0.0990	0.0006	0.56	609	3.4	608.9	14.1	100	I
82.1	e;ov;hd;rd	95.6	72.5	1.3	5	297.9	59.2	0.20	1.15	11.06	0.0625	0.0590	0.0004	0.7309	0.0072	0.0904	0.0005	0.57	558	3.0	559.5	13.1	100	M
83.1	e;eq;zs,ho;rd	83.4	85.4	1.0	7	303.5	37.1	0.12	1.78	8.59	0.0748	0.0631	0.0005	1.0072	0.0146	0.1164	0.0010	0.60	710	5.9	707.5	15.5	100	M
85.1	m;st;sz;sr	138.2	82.1	1.7	4	61.5	33.2	0.54	1.91	9.23	0.0748	0.0619	0.0010	0.9169	0.0181	0.1083	0.0009	0.41	663	5.1	663.7	35.8	100	I
86.1	m;eq;osz;sr	103.4	96.5	1.1	6	89.3	29.0	0.33	1.79	7.01	0.0454	0.0678	0.0006	1.3256	0.0159	0.1427	0.0009	0.54	860	5.2	860.7	19.8	100	I
87.1	e;p;a,ho;sr	147.3	67.1	2.2	2	87.2	33.1	0.38	<0.001	6.04	0.0740	0.0719	0.0011	1.6417	0.0288	0.1656	0.0020	0.70	988	11.2	984.2	32.5	100	I
89.1	e;st;osz;sr	164.1	92.3	1.8	4	237.8	68.5	0.29	3.98	5.88	0.0334	0.0733	0.0004	1.7215	0.0162	0.1700	0.0010	0.60	1012	5.3	1022.5	9.8	99	I
90.1	e;st;osz;sr	169.8	92.6	1.8	4	98.1	83.1	0.85	<0.001	7.79	0.0463	0.0652	0.0006	1.1559	0.0118	0.1284	0.0008	0.58	778	4.4	776.0	19.9	100	I
1.1	e;ov;osz;rd	191.1	103.6	1.8	4	469.7	101.6	0.22	12.05	7.72	0.1296	0.0656	0.0004	1.1950	0.0259	0.1296	0.0022	0.77	1922.4	28.5	1999.0	8.1	96	Rejected data
6.1	e;st;osz;sr	138.7	96.9	1.4	5	97.0	83.9	0.87	28.24	6.07	0.0828	0.0719	0.0008	1.6383	0.0309	0.1648	0.0022	0.72	785.6	12.4	789.4	13.1	100	
17.1	e;ov;a,ho;rd	150.8	83.6	1.8	5	416.4	6.0	0.01	7.78	6.06	0.0392	0.0736	0.0005	1.6470	0.0171	0.1651	0.0011	0.62	569.4	3.6	570.6	13.2	100	
23.1	e;ov;hd;rd	119.4	85.3	1.4	5	234.4	184.3	0.79	6.14	5.97	0.0360	0.0724	0.0005	1.7082	0.0204	0.1675	0.0010	0.51	555.7	3.8	554.5	19.3	100	
28.1	e;p;sz;sr	152.1	75.0	2.0	4	205.8	189.9	0.92	8.10	6.32	0.0773	0.0706	0.0009	1.5276	0.0332	0.1583	0.0019	0.56	1829.2	9.3	1902.1	11.4	96	

Continued on next page

Table A.1: LA-MC-ICPMS U-Pb results of the sample V11-81

Spot	Site;Shape;CL; Roundness	Length (µm)	Width (µm)	Aspect ratio	MC	U (ppm)	Th (ppm)	Th/U	% 206 Pb common	Ratios								Ages (Ma)				% Conc.		
										238U/206Pb	error	207Pb/206Pb	error	207Pb/235U	error	206Pb/238U	error	error correl.	206Pb/238U	±	207Pb/206Pb		±	
29.1	e;ov;hd;rd	135.8	88.5	1.5	5	171.2	32.1	0.19	16.15	2.88	0.0495	0.1230	0.0006	5.9840	0.1266	0.3474	0.0060	0.81	998.3	5.6	998.5	14.9	100	Rejected data
36.1	e;p;sz;sr	131.2	61.5	2.1	2	209.2	57.5	0.27	9.37	7.90	0.0693	0.0649	0.0006	1.1178	0.0164	0.1266	0.0011	0.60	768.3	6.4	766.7	20.2	100	
53.1	e;p;sz;sr	128.0	63.1	2.0	5	501.0	37.6	0.08	7.59	9.53	0.0734	0.0615	0.0003	0.9399	0.0141	0.1049	0.0008	0.51	937.5	6.0	1033.3	8.8	91	
54.1	e;ov;osz;rd	126.2	71.8	1.8	2	417.3	10.8	0.03	8.76	3.05	0.0178	0.1164	0.0008	5.2549	0.0551	0.3281	0.0019	0.56	643.1	4.7	650.3	9.8	99	
59.1	e;ec;hd;sr	104.2	102.1	1.0	5	195.4	167.8	0.86	6.36	10.83	0.0707	0.0593	0.0004	0.7577	0.0073	0.0924	0.0006	0.68	559.2	3.8	560.6	25.1	100	
60.1	e;ov;osz;rd	125.5	74.5	1.7	5	88.6	151.6	1.71	6.82	11.16	0.1223	0.0587	0.0003	0.7222	0.0102	0.0896	0.0010	0.78	550.2	4.5	551.6	52.3	100	
66.1	e;ov;hd;rd	103.7	74.9	1.4	2	590.0	81.8	0.14	7.66	6.39	0.0439	0.0737	0.0003	1.5954	0.0158	0.1565	0.0011	0.70	553.0	5.8	551.2	11.5	100	
69.1	e;st;hb;sr	118.0	72.9	1.6	2	79.8	54.2	0.68	12.11	11.55	0.1457	0.0583	0.0011	0.6950	0.0238	0.0865	0.0011	0.37	947.4	10.8	945.8	27.6	100	
84.1	e;p;hd;sr	157.2	74.2	2.1	5	120.0	46.5	0.39	7.13	11.22	0.0967	0.0588	0.0014	0.7399	0.0209	0.0891	0.0008	0.31	535.1	6.5	534.9	41.8	100	
88.1	e;ov;osc;hc;rd	164.0	92.4	1.8	6	310.9	118.3	0.38	16.94	11.04	0.0773	0.0590	0.0007	0.7461	0.0107	0.0906	0.0006	0.49	984.9	5.9	1030.7	12.8	96	
91.1	e;ov;hd;rd	128.1	69.9	1.8	5	143.6	27.2	0.19	19.11	11.11	0.0791	0.0588	0.0005	0.7328	0.0087	0.0900	0.0006	0.60	983.4	12.4	982.9	24.0	100	

All analytical errors are at 1σ.

Site (of analysis): e (edge), m (middle), c (center).

Shape: p (prismatic); st (stubby), ov (ovoid), eq (equant).

CL (internal structure in CL images): osz (oscillatory zoning), sz (sector zoning), hd(homogeneous dark), hb (homogeneous bright), r (rim), rec (recrystallization).

Roundness (degree of roundness): pur (practically unrounded to very poorly rounded), sr (subrounded), rd (rounded).

For % Conc., 100% denotes a concordant analysis.

Origin (inferred origin): I (igneous), M (metamorphic).

MC: morphological class.

Table A.2: LA-MC-ICPMS U-Pb results of the sample V11-170

Spot	Site;Shape;Cl; Roundness	Length (µm)	Width (µm)	Aspect ratio	MC	U (ppm)	Th (ppm)	Th/U	% 206 Pb common	Ratios								Ages (Ma)				% Conc.	Origin	
										238U/206Pb	error	207Pb/206Pb	error	207Pb/235U	error	206Pb/238U	error	error correl.	206Pb/238U	±	207Pb/206Pb			±
1.1	e;st;osz;pur	164.5	119.2	1.4	3	151.9	98.7	0.65	1.06	11.89	0.1783	0.0579	0.0005	0.6751	0.0123	0.0841	0.0013	0.82	520.5	7.5	519.4	17.8	100	I
2.1	e;eq;osz;rd	137.4	134.1	1.0	7	475.3	114.8	0.24	<0.001	5.89	0.0860	0.0730	0.0002	1.7489	0.0291	0.1698	0.0025	0.88	1011.3	13.7	1014.3	6.5	100	I
3.1	e;p;r;osz;sr	190.5	81.9	2.3	2	266.9	20.3	0.08	1.17	9.71	0.1432	0.0609	0.0003	0.8590	0.0145	0.1030	0.0015	0.88	631.8	8.9	629.4	10.4	100	I
4.1	m;p;hd;sr	187.4	85.1	2.2	2	258.5	61.9	0.24	<0.001	2.09	0.0303	0.1779	0.0005	11.8647	0.1950	0.4776	0.0069	0.88	2516.8	30.1	2634.5	5.3	96	M
5.1	e;p;osz;sr	182.7	83.4	2.2	2	297.5	76.1	0.26	0.21	12.03	0.1765	0.0577	0.0004	0.6711	0.0118	0.0831	0.0012	0.83	514.8	7.3	513.1	13.3	100	I
6.1	e;ov;osz;rd	128.4	76.7	1.7	5	100.8	36.2	0.36	<0.001	8.54	0.1256	0.0633	0.0003	1.0376	0.0176	0.1170	0.0017	0.87	713.4	9.9	713.2	10.8	100	I
7.1	e;st;osz;sr	149.2	79.1	1.9	4	214.4	171.0	0.80	0.39	12.10	0.1772	0.0577	0.0003	0.6619	0.0112	0.0826	0.0012	0.87	511.7	7.2	513.0	12.8	100	I
8.1	e;st;osz;sr	162.6	99.2	1.6	4	176.6	138.3	0.78	0.25	11.86	0.1751	0.0580	0.0005	0.7086	0.0122	0.0843	0.0012	0.86	521.9	7.4	523.1	18.3	100	I
9.1	e;st;r;hb;sr	144.0	84.3	1.7	4	47.0	13.9	0.30	0.35	7.25	0.1185	0.0670	0.0005	1.2493	0.0218	0.1379	0.0023	0.90	832.5	12.8	834.5	15.4	100	M
10.1	m;ov;hb;rd	137.8	100.0	1.4	5	88.9	34.9	0.39	<0.001	10.95	0.1712	0.0591	0.0005	0.7309	0.0124	0.0913	0.0014	0.90	563.4	8.4	564.1	18.0	100	M
11.1	e;st;osz;sr	134.1	87.7	1.5	4	133.2	104.1	0.78	<0.001	11.36	0.1725	0.0585	0.0003	0.7205	0.0119	0.0880	0.0013	0.90	543.7	7.9	543.2	11.6	100	I
12.1	e;eq;sz;sr	108.2	104.4	1.0	6	133.2	182.4	1.37	<0.001	9.96	0.1464	0.0606	0.0003	0.8336	0.0137	0.1004	0.0015	0.90	616.8	8.6	618.5	11.1	100	I
13.1	e;st;hb;sr	163.8	86.1	1.9	4	121.0	28.1	0.23	<0.001	7.82	0.1173	0.0653	0.0004	1.1967	0.0212	0.1278	0.0019	0.85	775.3	10.9	778.7	12.3	100	M
14.1	e;p;r;hd;sr	175.2	82.0	2.1	2	154.4	68.2	0.44	3.50	11.52	0.0879	0.0584	0.0004	0.7092	0.0051	0.0868	0.0007	0.90	536.8	3.9	538.9	15.1	100	M
15.1	m;p;osz;sr	189.0	80.3	2.4	2	124.6	36.4	0.29	<0.001	8.17	0.0604	0.0643	0.0004	1.0948	0.0087	0.1224	0.0009	0.90	744.4	5.2	745.8	14.5	100	I
17.1	e;p;sz;sr	165.2	82.7	2.0	2	107.2	43.2	0.40	<0.001	11.63	0.0931	0.0582	0.0005	0.6854	0.0054	0.0860	0.0007	0.90	531.6	4.1	530.1	17.6	100	I
18.1	e;p;osz;pur	187.2	77.0	2.4	1	314.6	190.8	0.61	<0.001	11.27	0.0768	0.0587	0.0004	0.7256	0.0058	0.0888	0.0006	0.85	548.2	3.6	549.3	13.7	100	I
20.1	e;eq;osz;sr	101.4	88.7	1.1	6	354.7	143.1	0.40	<0.001	11.42	0.0753	0.0585	0.0004	0.7177	0.0059	0.0876	0.0006	0.80	541.2	3.4	540.5	14.2	100	I
21.1	e;st;osz;sr	160.2	99.4	1.6	4	235.8	116.4	0.49	<0.001	11.31	0.0791	0.0586	0.0004	0.7137	0.0054	0.0884	0.0006	0.90	546.3	3.7	547.5	13.2	100	I
22.1	e;st;osz;pur	120.4	71.8	1.7	3	273.4	110.3	0.40	4.62	11.51	0.4473	0.0584	0.0005	0.6954	0.0279	0.0869	0.0034	0.90	537.1	20.0	538.4	19.3	100	I
23.1	e;st;osz;sr	159.3	87.2	1.8	4	355.7	209.0	0.59	2.32	11.88	0.4611	0.0579	0.0003	0.6719	0.0266	0.0842	0.0033	0.90	521.2	19.4	519.9	11.7	100	I
24.1	m;p;osz;sr	161.5	75.7	2.1	2	511.4	172.6	0.34	0.03	9.43	0.3661	0.0615	0.0003	0.8963	0.0354	0.1060	0.0041	0.90	649.5	23.9	650.7	9.2	100	I
25.1	e;p;osz;sr	167.7	80.2	2.1	2	372.1	193.3	0.52	1.56	11.47	0.4451	0.0584	0.0003	0.6979	0.0276	0.0872	0.0034	0.90	538.7	20.0	539.2	11.4	100	I
26.1	e;eq;osz;rd	108.7	96.8	1.1	7	98.3	57.3	0.58	1.94	5.94	0.2312	0.0725	0.0004	1.7148	0.0680	0.1682	0.0065	0.90	1002.4	36.0	998.9	10.2	100	I
27.1	e;st;osz;sr	138.3	73.8	1.9	4	181.0	90.3	0.50	2.41	11.97	0.4654	0.0578	0.0004	0.6600	0.0266	0.0835	0.0032	0.90	517.3	19.3	516.2	16.5	100	I
28.1	e;ov;osz;rd	135.1	76.2	1.8	5	110.2	24.7	0.22	2.75	8.79	0.3442	0.0627	0.0006	0.9760	0.0400	0.1138	0.0045	0.90	694.9	25.8	694.1	19.8	100	I
29.1	e;eq;osz;sr	104.0	102.9	1.0	6	240.8	119.0	0.49	0.38	12.02	0.4671	0.0578	0.0004	0.6659	0.0266	0.0832	0.0032	0.90	515.1	19.2	515.5	13.8	100	I

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Table A.2: LA-MC-ICPMS U-Pb results of the sample V11-170

Spot	Site;Shape;Cl; Roundness	Length (µm)	Width (µm)	Aspect ratio	MC	U (ppm)	Th (ppm)	Th/U	% 206 Pb common	Ratios								Ages (Ma)			% Conc.	Origin		
										238U/206Pb	error	207Pb/206Pb	error	207Pb/235U	error	206Pb/238U	error	error correl.	206Pb/238U	±			207Pb/206Pb	±
30.1	e;st;osz;sr	131.9	72.8	1.8	4	195.2	115.6	0.59	2.64	12.06	0.4685	0.0577	0.0005	0.6542	0.0265	0.0829	0.0032	0.90	513.7	19.2	512.9	18.1	100	I
31.1	e;ov;r;hd;rd	107.7	77.4	1.4	5	217.3	10.7	0.05	0.17	2.69	0.1046	0.1251	0.0005	6.3787	0.2517	0.3712	0.0144	0.90	2035.2	67.4	2028.0	6.9	100	M
32.1	e;st;osz;sr	113.6	72.4	1.6	4	216.5	129.4	0.60	0.61	10.33	0.4033	0.0599	0.0004	0.7912	0.0320	0.0968	0.0038	0.90	595.7	22.2	593.8	15.0	100	I
33.1	e;ov;osz;rd	125.1	79.4	1.6	5	108.1	98.7	0.91	1.98	5.84	0.2268	0.0733	0.0004	1.7480	0.0697	0.1712	0.0066	0.90	1018.6	36.5	1022.2	12.3	100	I
36.1	e;st;osz;sr	115.3	87.5	1.3	4	104.1	73.6	0.71	<0.001	11.63	0.2231	0.0582	0.0007	0.6858	0.0162	0.0860	0.0017	0.81	531.8	9.8	531.6	24.6	100	I
37.1	e;ov;osz;rd	116.2	83.7	1.4	5	70.1	67.6	0.96	1.89	3.04	0.0573	0.1123	0.0007	5.0780	0.1117	0.3293	0.0062	0.86	1835.0	30.1	1839.0	10.8	100	I
38.1	e;st;osz;sr	123.0	81.9	1.5	4	196.8	105.9	0.54	1.55	11.78	0.2221	0.0580	0.0005	0.6769	0.0158	0.0849	0.0016	0.81	525.2	9.5	524.5	19.2	100	I
39.1	e;p;osz;sr	165.7	66.2	2.5	2	230.2	117.6	0.51	<0.001	12.00	0.2316	0.0578	0.0005	0.6501	0.0175	0.0833	0.0016	0.72	516.0	9.6	516.4	19.1	100	I
40.1	e;p;hd;sr	153.1	58.8	2.6	2	157.2	149.1	0.95	0.10	12.13	0.2310	0.0576	0.0006	0.6381	0.0153	0.0824	0.0016	0.80	510.5	9.3	510.1	22.7	100	I
41.1	e;p;osz;pur	149.9	64.4	2.3	1	57.2	30.5	0.53	1.93	11.43	0.2226	0.0585	0.0008	0.6970	0.0180	0.0875	0.0017	0.76	540.8	10.1	541.6	31.4	100	I
42.1	e;p;osz;sr	174.9	64.0	2.7	2	287.1	177.6	0.62	3.84	11.99	0.2338	0.0578	0.0004	0.6586	0.0148	0.0834	0.0016	0.87	516.3	9.7	516.2	14.7	100	I
43.1	e;st;osz;sr	127.5	81.0	1.6	4	228.8	95.7	0.42	0.48	11.47	0.2138	0.0584	0.0003	0.7025	0.0154	0.0872	0.0016	0.85	538.8	9.6	540.0	10.0	100	I
44.1	e;st;osz;sr	127.7	69.9	1.8	4	310.2	100.6	0.32	0.73	11.80	0.2199	0.0581	0.0003	0.6793	0.0150	0.0847	0.0016	0.85	524.4	9.4	525.7	10.6	100	I
45.1	e;p;osz;sr	140.2	62.2	2.3	2	88.3	47.5	0.54	<0.001	11.85	0.2267	0.0580	0.0006	0.6690	0.0161	0.0844	0.0016	0.80	522.5	9.6	522.0	23.4	100	I
46.1	e;st;osz;pur	126.3	81.2	1.6	3	583.9	217.4	0.37	0.82	11.33	0.2109	0.0586	0.0002	0.7112	0.0156	0.0883	0.0016	0.85	545.2	9.7	545.1	8.1	100	I
47.1	e;st;osz;sr	105.1	75.8	1.4	4	196.5	98.5	0.50	1.26	11.86	0.0439	0.0579	0.0005	0.6683	0.0057	0.0843	0.0003	0.44	521.7	1.9	520.9	17.8	100	I
48.1	e;p;osz;pur	155.0	62.0	2.5	1	118.9	48.1	0.40	3.32	11.09	0.0633	0.0588	0.0010	0.7237	0.0122	0.0901	0.0005	0.34	556.3	3.0	554.0	35.2	100	I
49.1	e;p;osz;sr	150.4	73.7	2.0	2	140.7	69.7	0.50	0.03	11.93	0.0532	0.0579	0.0004	0.6657	0.0056	0.0838	0.0004	0.53	519.0	2.2	519.6	16.2	100	I
50.1	e;p;osz;sr	137.1	60.5	2.3	2	118.9	101.9	0.86	0.55	11.85	0.0646	0.0579	0.0008	0.6718	0.0102	0.0844	0.0005	0.36	522.2	2.7	520.2	28.6	100	I
52.1	e;p;osz;sr	142.3	69.9	2.0	2	262.8	71.6	0.27	3.52	7.47	0.0364	0.0663	0.0005	1.2133	0.0105	0.1340	0.0007	0.56	810.4	3.7	811.1	15.0	100	I
53.1	e;st;sz;pur	136.8	71.9	1.9	3	253.5	138.2	0.55	1.86	11.15	0.0506	0.0588	0.0005	0.7218	0.0064	0.0897	0.0004	0.51	553.5	2.4	553.5	17.4	100	I
54.1	e;eq;osz;sr	116.6	94.2	1.2	6	210.2	74.9	0.36	1.62	10.96	0.0372	0.0591	0.0004	0.7406	0.0058	0.0913	0.0003	0.43	563.0	1.8	564.3	15.8	100	I
55.1	e;st;osz;sr	114.9	75.7	1.5	4	263.6	20.4	0.08	2.60	11.84	0.0726	0.0580	0.0005	0.6676	0.0077	0.0845	0.0005	0.53	522.9	3.1	521.6	17.2	100	I
56.1	e;st;osz;sr	150.1	87.2	1.7	4	145.7	76.8	0.53	2.58	12.02	0.0460	0.0578	0.0007	0.6637	0.0088	0.0832	0.0003	0.29	515.3	1.9	514.2	27.9	100	I
57.1	e;p;osz;sr	143.8	69.5	2.1	2	304.0	96.3	0.32	0.85	8.63	0.0301	0.0631	0.0004	1.0154	0.0066	0.1158	0.0004	0.53	706.5	2.3	707.4	11.9	100	I
58.1	e;st;hd;sr	143.0	82.2	1.7	4	150.5	28.2	0.19	0.42	10.08	0.0385	0.0603	0.0005	0.8265	0.0077	0.0992	0.0004	0.41	609.8	2.2	607.5	17.9	100	M
59.1	e;st;osz;sr	122.6	92.8	1.3	4	240.2	243.7	1.01	0.24	3.08	0.0102	0.1147	0.0006	5.1231	0.0299	0.3242	0.0011	0.57	1810.4	5.2	1875.8	9.0	97	I

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Table A.2: LA-MC-ICPMS U-Pb results of the sample V11-170

Spot	Site;Shape;Cl; Roundness	Length (µm)	Width (µm)	Aspect ratio	MC	U (ppm)	Th (ppm)	Th/U	% 206 Pb common	Ratios								Ages (Ma)				% Conc.	Origin	
										238U/206Pb	error	207Pb/206Pb	error	207Pb/235U	error	206Pb/238U	error	error correl.	206Pb/238U	±	207Pb/206Pb			±
60.1	e;st;osz;sr	128.7	80.1	1.6	4	115.2	62.7	0.54	<0.001	11.60	0.2131	0.0582	0.0006	0.6904	0.0168	0.0862	0.0016	0.75	533.2	9.4	531.4	20.7	100	I
61.1	e;eq;osz;sr	114.6	101.0	1.1	6	182.4	77.5	0.42	1.11	10.13	0.1825	0.0603	0.0004	0.8145	0.0196	0.0987	0.0018	0.75	606.9	10.4	608.6	15.0	100	I
62.1	e;st;hd;sr	108.7	71.7	1.5	4	196.1	8.9	0.05	0.30	6.20	0.1113	0.0712	0.0003	1.5720	0.0369	0.1613	0.0029	0.76	964.3	16.1	961.7	7.9	100	M
63.1	e;st;osz;sr	126.8	84.4	1.5	4	286.4	222.7	0.78	0.79	11.75	0.2119	0.0581	0.0004	0.6714	0.0162	0.0851	0.0015	0.75	526.5	9.1	527.2	15.1	100	I
64.1	e;eq;osz;sr	101.2	97.5	1.0	6	235.5	105.6	0.45	0.64	11.59	0.2105	0.0582	0.0004	0.6867	0.0171	0.0863	0.0016	0.73	533.5	9.3	532.7	16.7	100	I
65.1	e;eq;osz;sr	96.7	83.3	1.2	6	91.3	40.9	0.45	2.51	11.71	0.2153	0.0581	0.0012	0.6792	0.0213	0.0854	0.0016	0.59	528.4	9.3	526.3	45.4	100	I
66.1	e;st;osz;sr	112.0	87.5	1.3	4	114.0	58.6	0.51	0.95	12.06	0.2197	0.0577	0.0006	0.6593	0.0170	0.0829	0.0015	0.71	513.6	9.0	513.3	23.5	100	I
67.1	e;st;osz;sr	113.4	82.7	1.4	4	181.5	95.3	0.52	2.44	11.92	0.2150	0.0578	0.0005	0.6638	0.0164	0.0839	0.0015	0.73	519.2	9.0	517.2	19.3	100	I
68.1	e;st;osz;sr	110.3	82.2	1.3	4	588.6	287.9	0.49	3.68	11.91	0.2168	0.0579	0.0003	0.6711	0.0160	0.0840	0.0015	0.77	519.8	9.1	518.2	9.7	100	I
69.1	e;st;osz;pur	105.5	67.2	1.6	3	93.1	66.5	0.71	2.00	11.89	0.2197	0.0579	0.0009	0.6698	0.0192	0.0841	0.0016	0.65	520.7	9.2	521.4	34.1	100	I
70.1	e;st;osz;sr	118.5	72.9	1.6	4	310.4	84.6	0.27	3.84	9.09	0.1655	0.0622	0.0003	0.9375	0.0227	0.1100	0.0020	0.75	673.0	11.6	674.4	10.4	100	I
71.1	c;st;osz;pur	123.7	89.6	1.4	3	162.5	98.7	0.61	5.06	11.92	0.2158	0.0579	0.0007	0.6666	0.0175	0.0839	0.0015	0.69	519.5	9.0	520.1	25.5	100	I
72.1	e;st;osz;sr	119.1	80.0	1.5	4	106.4	50.7	0.48	<0.001	11.93	0.2207	0.0579	0.0004	0.6651	0.0158	0.0838	0.0016	0.78	518.9	9.2	520.4	14.3	100	I
73.1	e;st;osz;sr	106.4	61.7	1.7	4	576.7	498.9	0.87	5.25	9.08	0.0827	0.0623	0.0007	0.9458	0.0156	0.1101	0.0010	0.55	673.3	5.8	679.7	24.6	99	I
74.1	m;st;osz;sr	95.7	64.9	1.5	4	518.2	52.8	0.10	0.03	5.63	0.0436	0.0745	0.0003	1.8186	0.0191	0.1776	0.0014	0.74	1053.9	7.5	1056.7	9.6	100	I
75.1	e;st;hd;sr	97.1	74.3	1.3	4	370.6	50.7	0.14	5.32	7.88	0.0647	0.0657	0.0004	1.1634	0.0132	0.1269	0.0010	0.72	769.9	6.0	794.1	13.4	97	M
78.1	e;st;osz;sr	104.8	58.0	1.8	4	164.9	184.2	1.12	3.38	10.15	0.0948	0.0602	0.0008	0.8080	0.0137	0.0985	0.0009	0.55	605.9	5.4	603.4	27.5	100	I
80.1	e;eq;hd;rd	89.8	78.7	1.1	7	163.0	23.0	0.14	0.63	2.99	0.0232	0.1208	0.0006	5.5597	0.0580	0.3340	0.0026	0.74	1857.7	12.5	1967.4	8.1	94	I
81.1	e;eq;osz;sr	92.8	79.0	1.2	6	310.4	162.2	0.52	0.75	10.57	0.0854	0.0596	0.0004	0.7792	0.0092	0.0946	0.0008	0.68	582.7	4.5	582.2	14.7	100	I
82.1	e;p;osz;sr	121.9	58.2	2.1	2	136.0	86.2	0.63	4.22	11.65	0.0964	0.0582	0.0008	0.6980	0.0108	0.0858	0.0007	0.53	530.8	4.2	529.4	30.2	100	I
83.1	e;ov;r;hb;rd	132.4	71.3	1.9	5	79.3	42.6	0.54	2.05	6.06	0.0486	0.0720	0.0005	1.6257	0.0200	0.1651	0.0013	0.65	985.2	7.3	984.6	15.6	100	M
84.1	e;eq;osz;sr	101.1	88.3	1.1	6	110.6	104.4	0.94	1.58	4.10	0.0334	0.0894	0.0005	2.9947	0.0336	0.2437	0.0020	0.73	1405.8	10.3	1418.5	11.1	99	I

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Table A.2: LA-MC-ICPMS U-Pb results of the sample V11-170

Spot	Site;Shape;CL;Roundness	Length (µm)	Width (µm)	Aspect ratio	MC	U (ppm)	Th (ppm)	Th/U	% 206 Pb common	Ratios								Ages (Ma)				% Conc.	
										238U/206Pb	error	207Pb/206Pb	error	207Pb/235U	error	206Pb/238U	error	error correl.	206Pb/238U	±	207Pb/206Pb		±
16.1	e;p;osz;sr	179.3	72.3	2.5	2	233.0	122.6	0.53	10.15	11.82	0.0881	0.0580	0.0006	0.6602	0.0076	0.0846	0.0006	0.65	523.6	3.8	524.0	20.7	100
19.1	e;st;osz;sr	168.2	92.5	1.8	4	392.2	179.0	0.46	23.23	5.89	0.0538	0.0767	0.0006	1.7741	0.0204	0.1697	0.0016	0.79	1010.4	8.5	1115.9	16.5	91
34.1	e;st;osz;sr	120.8	86.3	1.4	4	121.0	38.6	0.32	17.31	11.98	0.2385	0.0581	0.0008	0.6713	0.0180	0.0835	0.0017	0.74	516.9	9.9	527.1	28.8	98
35.1	e;st;osz;pur	134.2	73.1	1.8	3	145.3	81.5	0.56	14.61	12.13	0.2332	0.0577	0.0007	0.6519	0.0158	0.0825	0.0016	0.80	510.8	9.4	511.5	24.8	100
51.1	e;p;osz;sr	160.4	63.6	2.5	2	414.0	295.3	0.71	6.19	12.53	0.0542	0.0572	0.0005	0.6296	0.0067	0.0798	0.0003	0.40	494.8	2.1	492.0	20.6	101
76.1	e;eq;sz;sr	77.3	77.3	1.0	6	79.2	77.8	0.98	8.86	3.04	0.0271	0.1176	0.0008	5.3027	0.0653	0.3285	0.0029	0.72	1831.1	14.2	1920.3	11.3	95
77.1	e;ov;hd;rd	105.5	71.3	1.5	5	260.9	134.8	0.52	6.57	9.08	0.0792	0.0622	0.0004	0.9468	0.0116	0.1102	0.0010	0.71	673.8	5.6	676.5	13.7	100
79.1	e;ov;hd;rd	108.8	56.0	1.9	5	228.0	32.8	0.14	20.15	5.95	0.0563	0.0725	0.0005	1.6798	0.0233	0.1681	0.0016	0.68	1001.6	8.8	1000.0	14.9	100
85.1	e;st;osz;pur	107.3	66.9	1.6	3	426.0	24.2	0.06	11.06	11.59	0.1512	0.0583	0.0005	0.6899	0.0121	0.0863	0.0011	0.74	533.5	6.7	533.8	18.7	100

Rejected data

All analytical errors are at 1σ.

Site (of analysis): e (edge), m (middle), c (center).

Shape: p (prismatic); st (stubby), ov (ovoid), eq (equant).

CL (internal structure in CL images): osz (oscillatory zoning), sz (sector zoning), hd(homogeneous dark), hb (homogeneous bright), r (rim), rec (recrystallization).

Roundness (degree of roundness): pur (practically unrounded to very poorly rounded), sr (subrounded), rd (rounded).

For % Conc., 100% denotes a concordant analysis.

Origin (inferred origin): I (igneous), M (metamorphic).

MC: morphological class.

Table A.3: LA-MC-ICPMS U-Pb results of the sample V11-51

Spot	Site:Shape;CL; Roundness	Length (µm)	Width (µm)	Aspect ratio	MC	U (ppm)	Th (ppm)	Th/U	% 206 Pb common	Ratios						Ages (Ma)				% Conc.	Origin			
										238U/206Pb	error	207Pb/206Pb	error	207Pb/235U	error	206Pb/238U	error	error correl.	206Pb/238U			±	207Pb/206Pb	±
1.1	e;ov;a,hc;rd	151.6	87.1	1.7	5	251.7	13.7	0.05	1.51	9.87	0.2935	0.0607	0.0005	0.8614	0.0326	0.1013	0.0030	0.79	621.9	17.6	623.6	17.8	100	M
3.1	e;st;osz;sr	131.4	91.8	1.4	4	209.8	103.0	0.49	1.74	5.89	0.1750	0.0732	0.0006	1.7219	0.0648	0.1697	0.0050	0.79	1010.3	27.7	1020.8	16.1	99	I
4.1	e;ov;osz;rd	126.7	82.6	1.5	5	348.2	132.7	0.38	0.40	6.08	0.1804	0.0735	0.0006	1.6608	0.0624	0.1646	0.0049	0.79	982.0	27.0	1026.9	15.7	96	I
5.1	e;eq;osz;sr	101.6	99.2	1.0	6	377.3	40.0	0.11	3.25	11.21	0.3339	0.0587	0.0005	0.7208	0.0273	0.0892	0.0027	0.79	550.6	15.7	549.4	19.1	100	I
6.1	e;ov;hd;rd	129.2	92.6	1.4	5	166.9	110.1	0.66	0.19	1.98	0.0589	0.1874	0.0014	13.0162	0.4893	0.5040	0.0150	0.79	2630.8	63.8	2722.4	13.0	97	I
7.1	e;st;osz;sr	157.3	102.5	1.5	4	345.7	44.5	0.13	0.39	10.47	0.3108	0.0598	0.0005	0.7841	0.0296	0.0955	0.0028	0.79	588.2	16.7	589.7	17.6	100	I
8.1	m;st;osz;sr	152.7	81.4	1.9	4	131.1	129.1	0.99	<0.001	6.20	0.1850	0.0712	0.0006	1.5722	0.0596	0.1612	0.0048	0.79	963.5	26.6	961.8	17.2	100	I
9.1	e;st;osz;sr	114.7	84.9	1.4	4	133.7	126.3	0.94	1.66	6.93	0.2068	0.0681	0.0006	1.3480	0.0515	0.1442	0.0043	0.78	868.4	24.2	868.9	18.6	100	I
10.1	e;st;osz;sr	129.6	98.7	1.3	4	73.9	39.2	0.53	1.44	9.73	0.2909	0.0608	0.0008	0.8590	0.0339	0.1028	0.0031	0.76	630.7	17.9	627.7	27.9	100	I
11.1	e;eq;hb;sr	128.9	103.5	1.2	6	49.4	22.6	0.46	4.35	2.83	0.0841	0.1217	0.0010	5.8843	0.2224	0.3540	0.0105	0.79	1953.5	50.0	1981.2	14.6	99	I
12.1	e;eq;hd;rd	127.2	101.9	1.2	7	147.8	243.8	1.65	0.39	2.15	0.0637	0.1741	0.0013	11.2204	0.4220	0.4658	0.0138	0.79	2465.1	60.5	2597.4	13.1	95	I
13.1	e;eq;sz;rd	129.9	108.6	1.2	7	146.3	101.3	0.69	<0.001	2.03	0.0603	0.1859	0.0014	12.5930	0.4732	0.4919	0.0146	0.79	2578.8	62.8	2708.7	12.8	95	I
14.1	e;st;osz;pur	123.0	98.0	1.3	3	230.5	93.2	0.40	0.19	11.98	0.2310	0.0578	0.0004	0.6704	0.0141	0.0835	0.0016	0.90	516.9	9.6	517.3	13.9	100	I
15.1	e;st;osz;pur	144.5	99.0	1.5	3	234.6	113.0	0.48	0.57	11.81	0.2279	0.0580	0.0003	0.6761	0.0141	0.0847	0.0016	0.90	524.2	9.7	524.0	12.4	100	I
16.1	e;st;osz;sr	138.7	90.0	1.5	4	498.3	442.6	0.89	0.44	6.10	0.1170	0.0726	0.0002	1.6399	0.0331	0.1640	0.0031	0.90	978.9	17.4	1002.3	6.1	98	I
17.1	e;st;osz;pur	121.9	89.2	1.4	3	311.9	216.0	0.69	1.16	11.93	0.2315	0.0579	0.0005	0.6572	0.0143	0.0838	0.0016	0.89	518.8	9.7	519.0	17.9	100	I
18.1	e;p;osz;pur	201.1	88.9	2.3	1	168.5	76.6	0.45	0.01	11.46	0.2243	0.0584	0.0006	0.6991	0.0159	0.0872	0.0017	0.86	539.2	10.1	539.0	23.1	100	I
19.1	e;p;osz;pur	203.0	76.9	2.6	1	657.1	350.7	0.53	0.81	11.36	0.2288	0.0586	0.0003	0.7109	0.0153	0.0880	0.0018	0.90	543.8	10.5	544.2	12.1	100	I
20.1	e;st;osz;pur	163.3	100.2	1.6	3	160.6	62.1	0.39	<0.001	11.57	0.2276	0.0583	0.0005	0.6850	0.0151	0.0864	0.0017	0.89	534.4	10.1	533.6	19.2	100	I
21.1	e;p;osz;pur	121.4	55.7	2.2	1	144.5	72.6	0.50	2.20	11.56	0.2249	0.0583	0.0005	0.6932	0.0150	0.0865	0.0017	0.90	534.9	10.0	534.3	19.0	100	I
22.1	e;p;sz;pur	141.3	48.3	2.9	1	317.5	191.6	0.60	0.20	12.04	0.2326	0.0578	0.0002	0.6605	0.0136	0.0831	0.0016	0.90	514.5	9.6	514.4	7.4	100	I
23.1	e;p;osz;pur	172.4	63.7	2.7	1	209.7	96.8	0.46	0.88	11.60	0.2234	0.0582	0.0003	0.6908	0.0144	0.0862	0.0017	0.90	533.1	9.9	531.8	10.8	100	I
24.1	e;p;osz;pur	160.0	54.6	2.9	1	144.2	108.7	0.75	<0.001	11.79	0.2290	0.0580	0.0004	0.6776	0.0142	0.0848	0.0016	0.90	524.8	9.8	523.1	16.4	100	I
25.1	e;p;osz;pur	157.6	69.6	2.3	1	153.9	85.6	0.56	<0.001	12.01	0.2344	0.0578	0.0005	0.6635	0.0145	0.0833	0.0016	0.89	515.6	9.7	516.8	19.9	100	I
26.1	e;p;osz;pur	140.6	60.1	2.3	1	264.3	137.4	0.52	0.05	11.68	0.2259	0.0582	0.0003	0.6879	0.0143	0.0856	0.0017	0.90	529.5	9.8	529.6	10.5	100	I
27.1	e;p;osz;pur	128.0	62.8	2.0	1	268.7	181.7	0.68	0.63	11.56	0.0994	0.0583	0.0005	0.6942	0.0068	0.0865	0.0007	0.87	534.7	4.4	535.0	17.8	100	I
28.1	e;st;osz;pur	144.3	79.3	1.8	3	121.5	63.3	0.52	1.17	11.18	0.1039	0.0588	0.0007	0.7207	0.0093	0.0895	0.0008	0.72	552.3	4.9	552.0	24.0	100	I

Continued on next page

Table A.3: LA-MC-ICPMS U-Pb results of the sample V11-51

Spot	Site:Shape;CL; Roundness	Length (µm)	Width (µm)	Aspect ratio	MC	U (ppm)	Th (ppm)	Th/U	% 206 Pb common	Ratios						Ages (Ma)				% Conc.	Origin			
										238U/206Pb	error	207Pb/206Pb	error	207Pb/235U	error	206Pb/238U	error	error correl.	206Pb/238U			±	207Pb/206Pb	±
30.1	e;p;osz;sr	132.6	66.3	2.0	2	326.4	147.5	0.45	0.84	9.59	0.0821	0.0612	0.0005	0.8794	0.0088	0.1043	0.0009	0.86	639.7	5.2	640.4	18.4	100	I
31.1	e;st;osz;pur	121.7	75.1	1.6	3	190.3	114.9	0.60	0.02	11.78	0.1043	0.0581	0.0005	0.6806	0.0066	0.0849	0.0008	0.90	525.3	4.5	526.8	18.5	100	I
32.1	e;p;osz;pur	171.9	69.8	2.5	1	428.0	140.0	0.33	<0.001	11.58	0.0975	0.0583	0.0004	0.6968	0.0064	0.0863	0.0007	0.90	533.8	4.3	535.0	16.7	100	I
33.1	e;p;osz;pur	176.2	78.6	2.2	1	144.5	76.2	0.53	<0.001	11.43	0.1008	0.0585	0.0005	0.7031	0.0073	0.0875	0.0008	0.85	540.7	4.6	541.1	19.9	100	I
34.1	e;p;sz;pur	150.6	73.0	2.1	1	166.2	125.4	0.75	0.14	11.16	0.1056	0.0588	0.0007	0.7216	0.0088	0.0896	0.0008	0.77	553.1	5.0	553.0	26.7	100	I
35.1	e;st;osz;pur	131.2	82.2	1.6	3	602.0	156.4	0.26	0.71	9.25	0.0859	0.0618	0.0005	0.9191	0.0092	0.1081	0.0010	0.90	661.6	5.8	661.5	16.3	100	I
36.1	e;st;osz;pur	123.9	77.9	1.6	3	220.8	113.7	0.51	0.25	11.86	0.1022	0.0579	0.0005	0.6691	0.0065	0.0843	0.0007	0.88	521.8	4.3	520.1	18.6	100	I
37.1	e;st;osz;pur	118.6	87.0	1.4	3	248.0	180.6	0.73	0.14	12.09	0.1051	0.0578	0.0006	0.6700	0.0087	0.0827	0.0007	0.67	512.4	4.3	514.3	23.0	100	I
38.1	e;st;osz;sr	167.6	91.3	1.8	4	63.7	55.6	0.87	<0.001	10.33	0.0983	0.0599	0.0008	0.7933	0.0113	0.0968	0.0009	0.67	595.8	5.4	594.3	29.7	100	I
39.1	e;p;osz;pur	171.0	70.1	2.4	1	242.3	152.8	0.63	<0.001	11.67	0.1003	0.0582	0.0005	0.6840	0.0072	0.0857	0.0007	0.82	529.9	4.4	530.8	19.1	100	I
40.1	e;st;hd;sr	134.2	89.5	1.5	4	205.8	34.7	0.17	0.32	7.90	0.0413	0.0650	0.0005	1.1360	0.0077	0.1266	0.0007	0.77	768.3	3.8	768.3	15.8	100	M
41.1	e;p;rec;r	172.7	73.5	2.4	2	193.6	30.9	0.16	0.65	6.12	0.0323	0.0725	0.0005	1.6387	0.0099	0.1635	0.0009	0.87	976.1	4.8	1000.7	13.5	98	M
42.1	c;p;osz;pur	161.9	70.9	2.3	1	220.5	142.5	0.65	<0.001	11.62	0.0594	0.0582	0.0004	0.6881	0.0049	0.0861	0.0004	0.72	532.3	2.6	532.8	16.4	100	I
43.1	e;p;osz;sr	178.7	65.6	2.7	2	170.5	65.3	0.38	<0.001	5.55	0.0296	0.0749	0.0005	1.8482	0.0117	0.1800	0.0010	0.84	1067.2	5.2	1067.5	13.5	100	I
44.1	e;p;osz;pur	163.3	57.9	2.8	1	433.0	160.0	0.37	0.26	11.52	0.0558	0.0584	0.0004	0.6945	0.0042	0.0868	0.0004	0.81	536.5	2.5	536.7	14.5	100	I
45.1	e;p;osz;pur	183.3	63.5	2.9	1	222.4	15.3	0.07	0.21	11.81	0.0642	0.0580	0.0005	0.6698	0.0062	0.0847	0.0005	0.59	524.2	2.7	524.6	20.6	100	I
46.1	m;p;osz;pur	181.1	70.0	2.6	1	214.8	96.7	0.45	<0.001	11.71	0.0729	0.0581	0.0005	0.6810	0.0054	0.0854	0.0005	0.79	528.3	3.2	526.9	17.1	100	I
47.1	e;p;sz;sr	187.1	64.8	2.9	2	108.2	51.4	0.48	<0.001	5.93	0.0473	0.0726	0.0008	1.6858	0.0181	0.1686	0.0013	0.74	1004.1	7.4	1003.7	21.3	100	I
48.1	e;p;osz;pur	167.2	53.6	3.1	1	178.5	89.1	0.50	<0.001	11.87	0.0614	0.0579	0.0005	0.6779	0.0058	0.0842	0.0004	0.61	521.4	2.6	519.5	20.3	100	I
50.1	e;p;osz;sr	150.0	63.0	2.4	2	599.9	225.7	0.38	1.28	10.84	0.0712	0.0592	0.0005	0.7448	0.0059	0.0922	0.0006	0.83	568.8	3.6	568.2	18.1	100	I
51.1	e;st;hd;pur	127.0	100.3	1.3	3	510.6	169.4	0.33	0.44	12.00	0.0713	0.0578	0.0005	0.6600	0.0064	0.0833	0.0005	0.61	516.1	3.0	514.9	19.4	100	I
52.1	e;p;sz;pur	125.7	58.7	2.1	1	151.2	84.1	0.56	<0.001	11.72	0.0684	0.0581	0.0006	0.6816	0.0068	0.0853	0.0005	0.58	527.8	3.0	526.2	23.5	100	I
53.1	m;st;osz;pur	126.7	71.4	1.8	3	84.9	50.8	0.60	0.45	11.67	0.0805	0.0582	0.0008	0.7011	0.0103	0.0857	0.0006	0.47	530.1	3.5	529.9	29.2	100	I
55.1	e;p;hd;pur	124.6	62.8	2.0	1	294.5	312.8	1.06	1.19	11.46	0.0870	0.0585	0.0006	0.7031	0.0087	0.0873	0.0007	0.61	539.4	3.9	541.5	22.1	100	I
56.1	e;p;hb;sr	135.4	63.2	2.1	2	80.3	85.9	1.07	<0.001	10.77	0.0787	0.0593	0.0006	0.7592	0.0103	0.0928	0.0007	0.54	572.1	4.0	570.8	23.0	100	I
57.1	e;st;osz;sr	113.7	71.0	1.6	4	169.5	107.2	0.63	0.42	11.19	0.0761	0.0588	0.0005	0.7231	0.0072	0.0894	0.0006	0.68	551.9	3.6	551.5	17.2	100	I
58.1	e;p;sz;pur	125.4	47.7	2.6	1	331.1	133.3	0.40	0.25	11.85	0.0710	0.0579	0.0004	0.6748	0.0060	0.0844	0.0005	0.67	522.3	3.0	521.1	15.3	100	I

Continued on next page

Table A.3: LA-MC-ICPMS U-Pb results of the sample V11-51

Spot	Site;Shape;CL; Roundness	Length (µm)	Width (µm)	Aspect ratio	MC	U (ppm)	Th (ppm)	Th/U	% 206 Pb common	Ratios						Ages (Ma)				% Conc.	Origin			
										238U/206Pb	error	207Pb/206Pb	error	207Pb/235U	error	206Pb/238U	error	error correl.	206Pb/238U			±	207Pb/206Pb	±
59.1	e;p;osz;pur	127.8	46.4	2.8	1	132.4	71.7	0.54	0.02	11.98	0.0860	0.0578	0.0005	0.6656	0.0078	0.0835	0.0006	0.61	516.9	3.6	517.4	19.8	100	I
60.1	e;p;hd;pur	112.2	45.3	2.5	1	156.8	96.2	0.61	2.47	11.88	0.0777	0.0579	0.0005	0.6698	0.0072	0.0842	0.0006	0.61	520.9	3.3	521.2	18.5	100	I
61.1	e;st;osz;pur	129.5	93.7	1.4	3	514.0	226.7	0.44	0.35	12.01	0.0696	0.0578	0.0004	0.6636	0.0059	0.0832	0.0005	0.65	515.4	2.9	516.0	15.0	100	I
62.1	e;st;hd;pur	146.3	81.9	1.8	3	130.0	69.4	0.53	1.12	11.84	0.0739	0.0580	0.0005	0.6748	0.0069	0.0845	0.0005	0.61	522.7	3.1	521.8	19.6	100	I
63.1	e;p;osz;pur	129.7	60.4	2.1	1	258.1	115.2	0.45	0.15	11.73	0.0697	0.0581	0.0004	0.6832	0.0061	0.0853	0.0005	0.67	527.6	3.0	527.6	15.1	100	I
64.1	e;p;osz;pur	145.2	58.9	2.5	1	194.1	98.7	0.51	0.01	11.87	0.0750	0.0579	0.0004	0.6748	0.0064	0.0843	0.0005	0.67	521.5	3.2	520.2	16.9	100	I
65.1	e;p;osz;sr	130.7	63.6	2.1	2	190.5	89.8	0.47	3.51	5.73	0.0555	0.0755	0.0006	1.7951	0.0230	0.1745	0.0017	0.76	1037.1	9.3	1084.3	15.1	96	I
67.1	e;eq;osz;sr	101.8	83.8	1.2	6	208.0	71.1	0.34	0.27	8.95	0.0649	0.0625	0.0005	0.9551	0.0087	0.1117	0.0008	0.80	682.5	4.7	684.1	15.8	100	I
68.1	e;ov;hd;rd	108.2	79.9	1.4	5	197.9	85.2	0.43	1.43	5.89	0.0418	0.0730	0.0006	1.6947	0.0156	0.1697	0.0012	0.77	1010.6	6.6	1013.6	15.7	100	I
69.1	e;st;hd;sr	117.0	80.4	1.5	4	701.3	374.0	0.53	0.41	9.80	0.0684	0.0609	0.0004	0.8578	0.0075	0.1021	0.0007	0.80	626.5	4.2	628.9	15.3	100	M
70.1	e;p;osz;sr	152.4	75.0	2.0	2	199.1	168.9	0.85	0.39	10.22	0.0891	0.0601	0.0005	0.8115	0.0095	0.0978	0.0009	0.74	601.5	5.0	600.8	19.1	100	I
71.1	e;st;a;rec;sr	127.8	66.8	1.9	4	219.4	47.6	0.22	0.85	1.98	0.0156	0.1794	0.0013	12.3190	0.1202	0.5058	0.0040	0.81	2638.7	17.0	2648.6	12.0	100	M
72.1	e;eq;osz;rd	107.5	87.7	1.2	7	187.3	56.0	0.30	1.18	6.52	0.0501	0.0698	0.0005	1.4814	0.0137	0.1534	0.0012	0.83	919.8	6.6	922.3	15.4	100	I
73.1	e;eq;sz;sr	112.9	97.6	1.2	6	492.0	359.0	0.73	0.17	10.45	0.0756	0.0598	0.0004	0.7852	0.0071	0.0957	0.0007	0.80	589.0	4.1	588.4	15.8	100	I
74.1	e;st;sz;sr	111.1	86.3	1.3	4	299.9	168.7	0.56	<0.001	11.16	0.0788	0.0588	0.0005	0.7273	0.0070	0.0896	0.0006	0.73	553.2	3.7	553.7	17.8	100	I
75.1	e;st;osz;sr	129.3	86.5	1.5	4	120.7	105.3	0.87	<0.001	11.57	0.0868	0.0583	0.0006	0.6939	0.0078	0.0864	0.0006	0.67	534.3	3.8	534.0	23.1	100	I
76.1	e;st;hd;sr	119.6	73.6	1.6	4	115.5	46.3	0.40	4.64	8.89	0.0698	0.0625	0.0009	1.0007	0.0155	0.1125	0.0009	0.51	687.1	5.1	687.0	29.1	100	M
77.1	e;st;osz;pur	88.0	70.0	1.3	3	174.8	107.8	0.62	0.60	11.78	0.0880	0.0581	0.0005	0.6851	0.0070	0.0849	0.0006	0.73	525.3	3.8	527.5	19.4	100	I
78.1	e;eq;hd;rd	92.8	84.7	1.1	7	293.9	98.9	0.34	1.05	8.83	0.0564	0.0627	0.0003	0.9832	0.0067	0.1133	0.0007	0.90	691.7	4.2	693.1	10.9	100	M
79.1	e;eq;osz;rd	95.4	83.6	1.1	7	96.3	36.0	0.37	0.77	5.77	0.0382	0.0736	0.0005	1.7450	0.0140	0.1733	0.0011	0.82	1030.3	6.3	1030.2	14.0	100	I
80.1	e;ov;sz;rd	113.7	82.4	1.4	5	526.4	1322.6	2.51	<0.001	5.14	0.0329	0.0779	0.0003	2.0981	0.0120	0.1944	0.0012	0.90	1145.4	6.7	1147.8	8.5	100	I
81.1	e;p;osz;sr	128.7	60.8	2.1	2	495.5	177.0	0.36	1.32	10.18	0.0805	0.0602	0.0003	0.8140	0.0065	0.0982	0.0008	0.90	603.8	4.6	605.3	10.5	100	I
82.1	e;ov;osz;rd	115.8	75.0	1.5	5	118.9	18.8	0.16	2.09	5.03	0.0382	0.0750	0.0004	2.0324	0.0198	0.1987	0.0015	0.78	1168.5	8.1	1070.3	10.4	109	I
83.1	e;eq;hd;sr	88.6	86.5	1.0	6	268.3	34.3	0.13	<0.001	11.67	0.2103	0.0582	0.0004	0.6745	0.0173	0.0857	0.0015	0.70	529.9	9.2	530.7	14.2	100	M
84.1	e;st;hd;sr	112.6	71.2	1.6	4	529.8	31.5	0.06	0.12	5.77	0.0392	0.0735	0.0003	1.7608	0.0109	0.1734	0.0012	0.90	1031.0	6.5	1027.6	8.6	100	M
85.1	e;st;hd;sr	105.0	82.0	1.3	4	141.8	60.2	0.42	0.40	5.79	0.0385	0.0735	0.0004	1.7540	0.0128	0.1728	0.0012	0.90	1027.6	6.3	1029.3	11.4	100	M
86.1	e;p;osz;sr	132.7	64.3	2.1	2	275.7	59.4	0.22	0.51	5.58	0.0353	0.0749	0.0003	1.8592	0.0113	0.1793	0.0011	0.90	1063.4	6.2	1068.3	8.7	100	I

Continued on next page

Table A.3: LA-MC-ICPMS U-Pb results of the sample V11-51

Spot	Site;Shape;CL; Roundness	Length (µm)	Width (µm)	Aspect ratio	MC	U (ppm)	Th (ppm)	Th/U	% 206 Pb common	Ratios								Ages (Ma)				% Conc.	Origin	
										238U/206Pb	error	207Pb/206Pb	error	207Pb/235U	error	206Pb/238U	error	error	correl.	206Pb/238U	±			207Pb/206Pb
87.1	e;ov;hb;rd	101.6	76.3	1.3	5	65.5	32.2	0.49	0.28	2.98	0.0237	0.1142	0.0007	5.1967	0.0589	0.3359	0.0027	0.70	1866.9	12.9	1869.3	10.1	100	M
88.1	c;ov;sz;rd	94.2	71.6	1.3	5	398.7	217.5	0.55	0.16	5.16	0.0323	0.0778	0.0003	2.0816	0.0119	0.1939	0.0012	0.90	1142.4	6.6	1145.6	8.4	100	I
89.1	e;p;osz;pur	134.8	68.6	2.0	1	243.5	129.0	0.53	0.33	11.82	0.0775	0.0580	0.0003	0.6799	0.0046	0.0846	0.0006	0.90	523.4	3.3	521.9	11.2	100	I
90.1	e;p;osz;sr	123.9	58.4	2.1	2	149.8	47.4	0.32	0.72	5.85	0.0374	0.0732	0.0003	1.7242	0.0100	0.1709	0.0011	0.90	1016.8	6.0	1020.8	9.3	100	I
2.1	e;ov;osz;rd	162.6	101.4	1.6	5	200.7	102.0	0.51	7.08	7.25	0.2171	0.0675	0.0006	1.3042	0.0496	0.1380	0.0041	0.79	833.5	23.4	848.9	18.3	98	Rejected data
29.1	e;p;osz;pur	136.8	67.6	2.0	1	432.7	201.0	0.46	8.94	12.17	0.1038	0.0579	0.0005	0.6537	0.0071	0.0822	0.0007	0.79	509.0	4.2	518.0	20.1	98	
49.1	e;st;osz;sr	121.3	86.7	1.4	4	182.5	66.0	0.36	7.03	8.55	0.0492	0.0634	0.0006	1.0269	0.0130	0.1170	0.0007	0.45	713.1	3.9	715.7	20.1	100	
54.1	e;p;osz;pur	117.5	52.7	2.2	1	265.6	293.5	1.10	8.92	12.59	0.0922	0.0571	0.0005	0.6203	0.0072	0.0794	0.0006	0.63	492.7	3.5	490.3	20.4	100	
66.1	e;ov;osz;rd	121.6	75.7	1.6	5	241.8	106.1	0.44	27.02	6.02	0.0448	0.0732	0.0005	1.6796	0.0158	0.1660	0.0012	0.79	990.1	6.8	1020.8	15.2	97	

All analytical errors are at 1σ.

Site (of analysis): e (edge), m (middle), c (center).

Shape: p (prismatic); st (stubby), ov (ovoid), eq (equant).

CL (internal structure in CL images): osz (oscillatory zoning), sz (sector zoning), hd (homogeneous dark), hb (homogeneous bright), r (rim), rec (recrystallization).

Roundness (degree of roundness): pur (practically unrounded to very poorly rounded), sr (subrounded), rd (rounded).

For % Conc., 100% denotes a concordant analysis.

Origin (inferred origin): I (igneous), M (metamorphic).

MC: morphological class.

FIGURE A.1

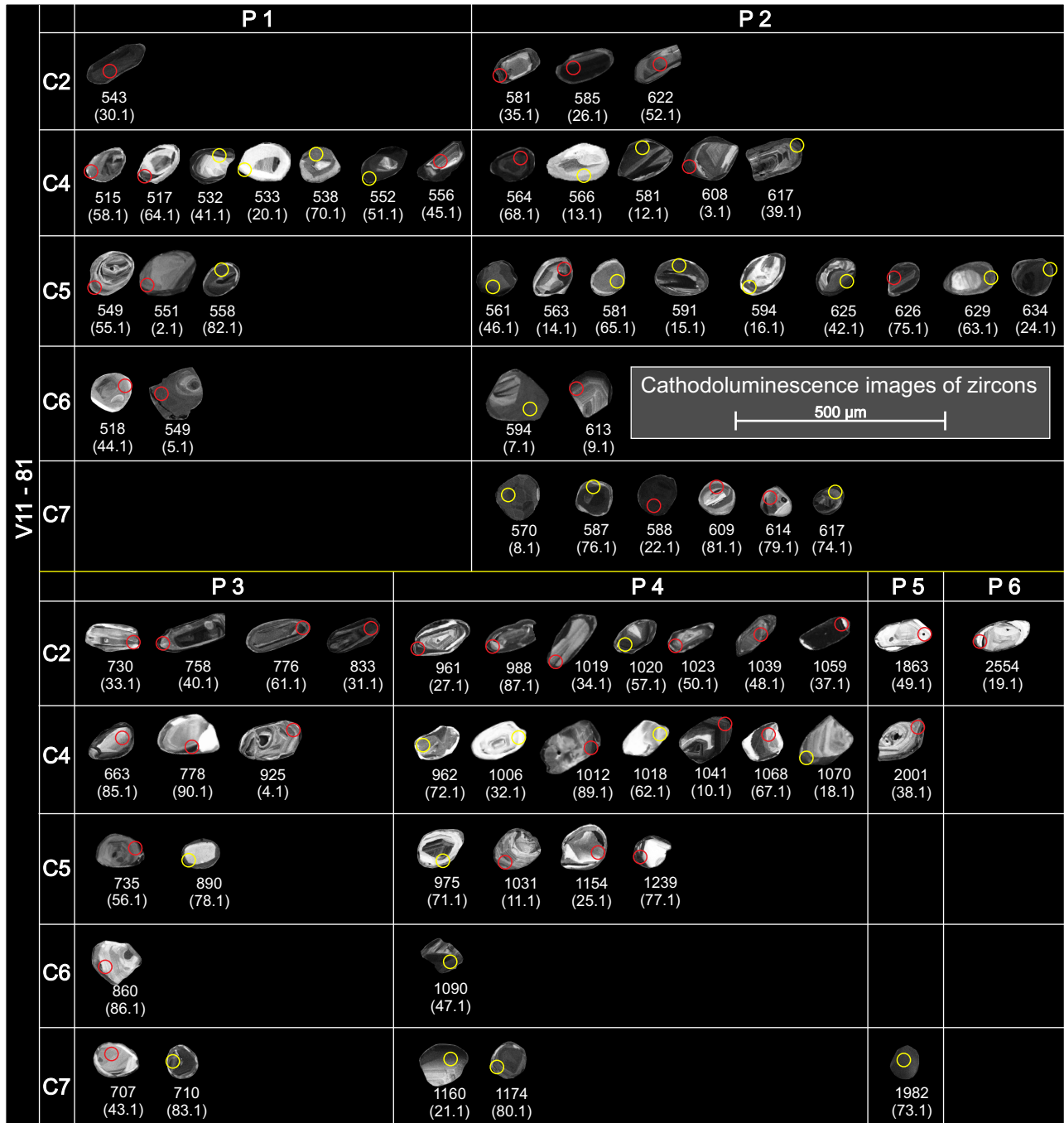


FIGURE A.1. Cathodoluminescence images of the detrital zircon populations from the sample V11-81. The populations are grouped according to their morphological classes (C2, C4, C5, C6 y C7). Analyzed spots are marked with circles (red circles: datum interpreted as igneous in origin, yellow circles: datum interpreted as metamorphic in origin). Spot size of 32 μ m. U-Pb ages below the images. Spot number is between parentheses. The figure only shows the filtered zircon grains.

FIGURE A.2

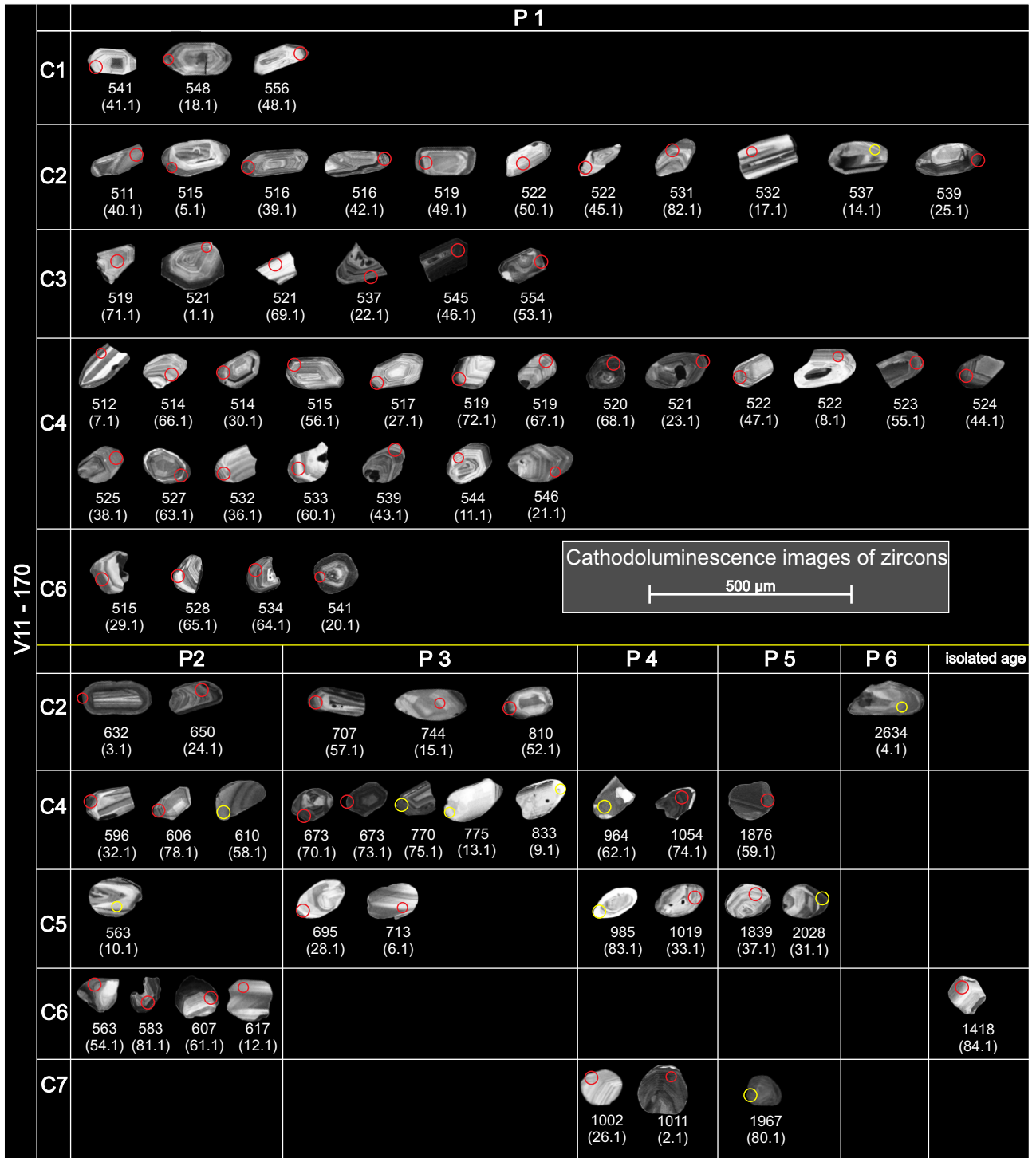


FIGURE A.2. Cathodoluminescence images of the detrital zircon populations from the sample V11-170. The populations are grouped according to their morphological classes (C1-7). Analyzed spots are marked with circles (red circles: datum interpreted as igneous in origin, yellow circles: datum interpreted as metamorphic in origin). Spot size of 32 μm. U-Pb ages below the images. Spot number is between parentheses. The figure only shows the filtered zircon grains.

FIGURE A.3

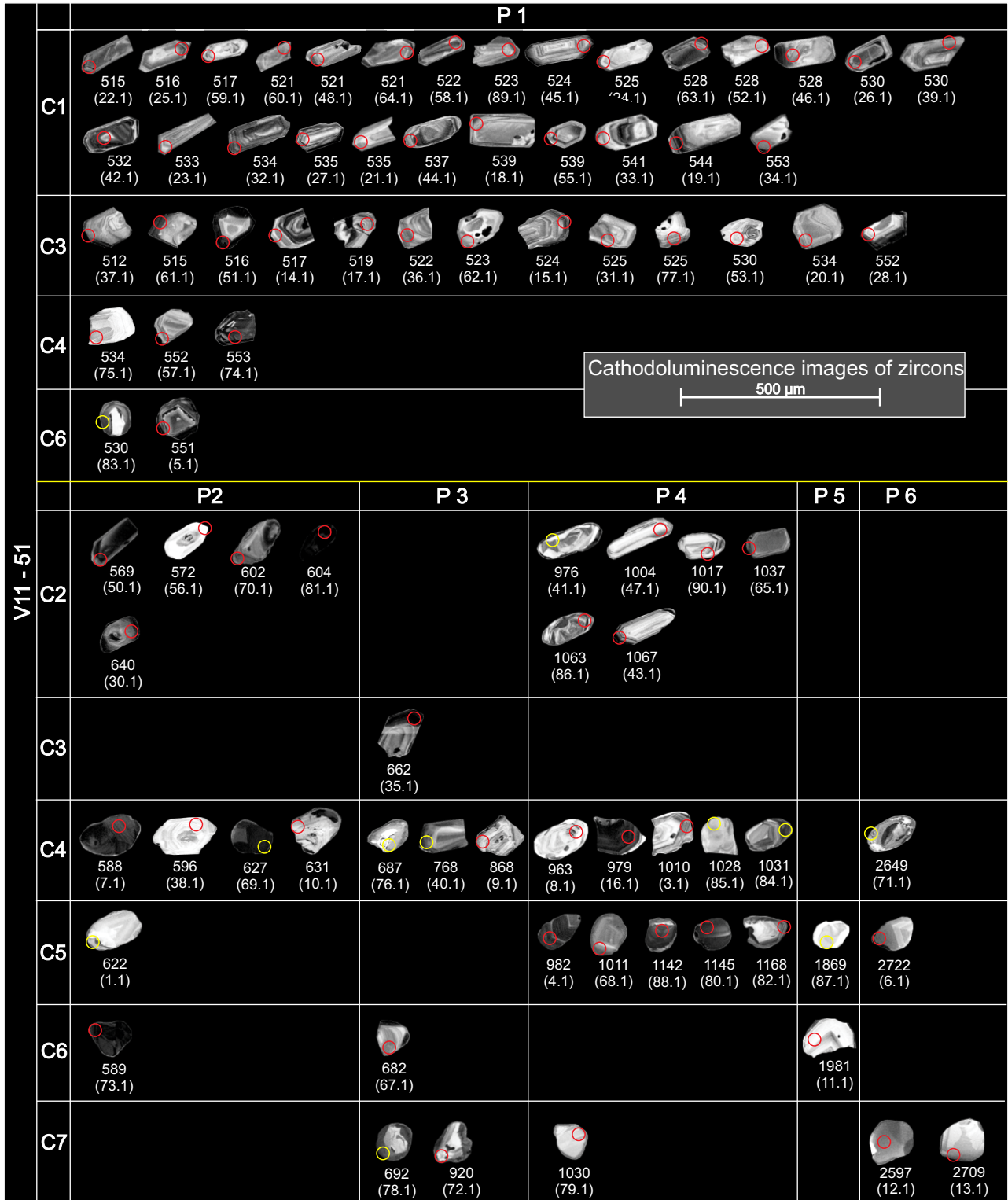


FIGURE A.3. Cathodoluminescence images of the detrital zircon populations from the sample V11-51. The populations are grouped according to their morphological classes (C1-7). Analyzed spots are marked with circles (red circles: datum interpreted as igneous in origin, yellow circles: datum interpreted as metamorphic in origin). Spot size of 32 µm. U-Pb ages below the images. Spot number is between parentheses. The figure only shows the filtered zircon grains.

FIGURE A.4

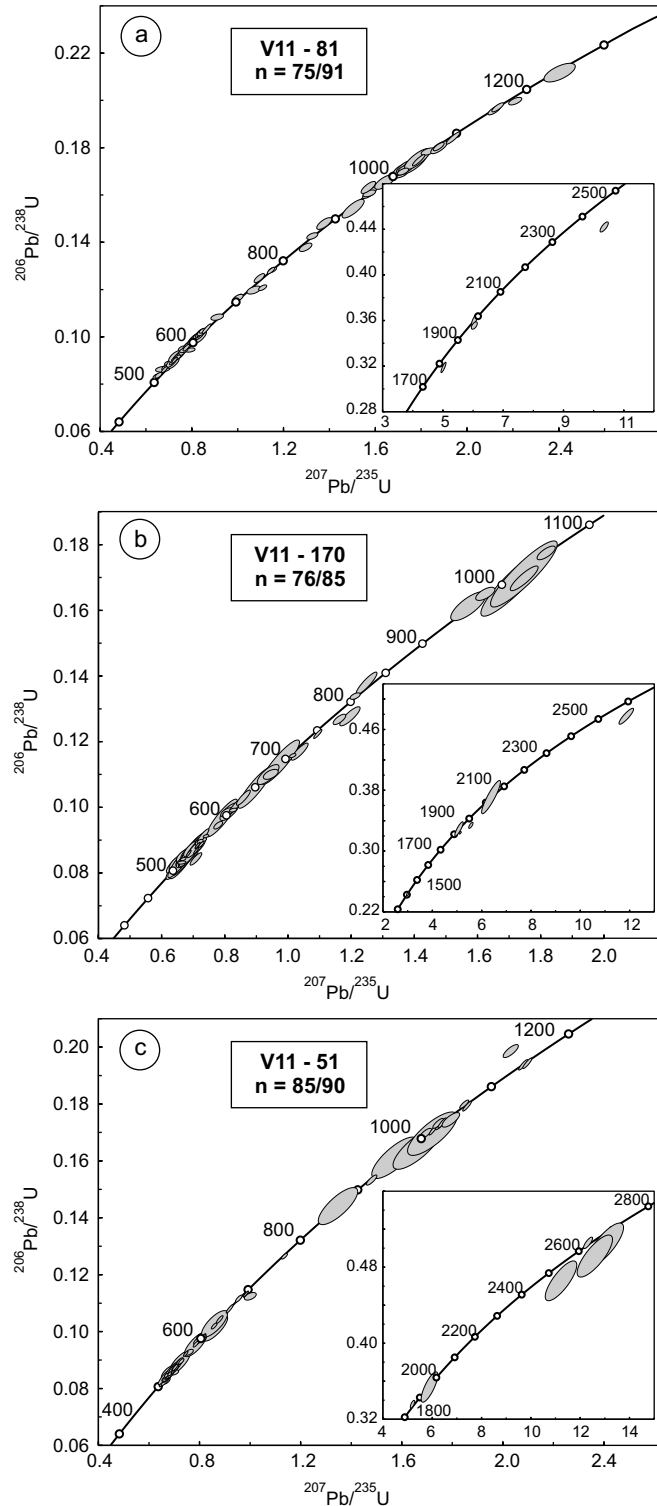


FIGURE A.4. U-Pb concordia diagrams of LA-MC-ICPMS U-Pb detrital-zircon data. U-Pb data are represented in two Concordia diagrams showing ages younger than 1300 Ma and older, for better observation. Grey ellipses are given at 1σ confidence level. (a), (b) and (c) correspond to the samples V11-81, V11-170 and V11-51, respectively. n = number of filtered individual grains (grains with $< 6\%$ of ^{206}Pb of common origin / total analyzed grains).

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