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TIMS single-zircon U-Pb isotope data from porphyry intrusions bracketing Cu-Au ore formation at Bajo de la Alumbrera (Argentina) and Bingham Canyon (Utah, USA). Data repository for GEOLOGY paper by Quadt, Erni, Martinek, Moll, Peytcheva and Heinrich (2011) - page 1

	Weight	С	oncentratio	ns		Th				Isotope Ratios	5				corr.			Ages (Ma)	,		
Sample	_	U	Pb	Pb*	Pbc	U	206 Pb*	208 Pb	206 Pb	±	207 Pb	±	207 Pb	±	coef.	206 Pb	±	207 Pb	±	207 Pb	±
Grain No	(mg)	(ppm)	(ppm)	(pg)	(pg)		204 Pb	206 Pb	238 U	2σ	235 U	2σ	206 Pb	2σ		238 U	2σ	235 U	2σ	206 Pb	2σ
(a)	(b)	(c)	(c)	(d)	(d)	(e)	(f)	(g)	(g)	(h)	(g)	(h)	(g)	(h)		(i)		(i)		(i)	

BINGHAM CANYON, UTAH

5091-400: Q	uartz Monzo	onite Porph	yry with la	rge potas	sium feldsj	pars and sm	aller amphi	bole and bio	tite phenocry	sts in a fine-gr	ained matrix	, mostly consi	sting of quart	z and plagioc	lase; potassi	ic alteration,	, 5 to 10%	6 veins			
5091-2	0.0049	740	4.76	22.0	1.33	0.463	1039	0.1489	0.005907	0.000013	0.03810	0.00021	0.04678	0.00021	0.618	37.97	0.08	37.97	0.20	37.89	10.6
5091-7	0.0091	271	2.58	16.2	7.33	0.772	144.6	0.2482	0.005901	0.000013	0.03806	0.00091	0.04677	0.00103	0.869	37.93	0.08	37.93	0.88	37.52	52.6
5091-8	0.0065	2828	17.3	110	3.01	0.474	2186	0.1527	0.005851	0.000031	0.03783	0.00027	0.04690	0.00021	0.775	37.61	0.20	37.70	0.26	44.02	10.8
5091-8F	0.0065	2814	17.7	112	3.11	0.476	2235	0.1531	0.005929	0.000065	0.03827	0.00052	0.04681	0.00058	0.446	38.11	0.26	38.13	0.52	39.49	29.4
5091-10	0.0066	790	5.72	34.9	2.87	0.511	745.0	0.1859	0.006293	0.000016	0.04608	0.00034	0.05311	0.00034	0.521	40.44	0.10	45.74	0.33	333.3	14.7
5091-14	0.0220	383	2.95	56.0	8.86	0.819	375.9	0.2635	0.005902	0.000011	0.03811	0.00092	0.04683	0.00105	0.965	37.93	0.07	37.98	0.89	40.56	53.8
5091-15#	0.0280	213	7.49	193	17.0	0.201	656.9	0.1652	0.028534	0.000045	0.58213	0.00124	0.14796	0.00018	0.826	181.4	0.28	466	0.79	2323	2.08
5091-16#	0.0440	128	463	696	19669	0.147	20.28	0.1625	0.089708	0.003944	5.48318	0.17085	0.44330	0.02176	0.126	553.8	23.3	1898	26.7	4063	73.1

KM2: Quartz Monzonite Porphyry with potassium feldspars, small biotite and former amphibole phenocrysts in fine-grained matrix, potassic alteration (biotite) with feldspars partly overprinted by clay or sericite; 5-10% quartz veins (mine coordinates -190/-1450) KM2-2 # 12.2 0.0018 739 11.7 8.96 0.726 59.31 0.2839 0.005849 0.000039 0.04605 0.00263 0.05710 0.00306 0.572 37.59 0.25 45.71 2.55 495.6 118 62.3 KM2-3 0.0022 603 8.62 1.71 0.762 305.9 0.005858 0.000017 0.03779 0.00105 0.600 37.66 1.03 38.23 4.70 0.2448 0.04678 0.00122 37.65 0.11 KM2-4 0.0039 28.7 2.16 772.3 0.005941 0.07 38.17 0.24 37.36 13.4 1106 7.91 0.800 0.2571 0.000012 0.03831 0.00024 0.04677 0.00026 0.512 38.18 KM2-5 0.0020 170 4.18 2.13 6.24 0.553 39.35 0.1780 0.005967 0.000046 0.03853 0.00266 0.04683 0.00317 0.367 38.35 0.31 38.38 2.61 40.51 161 0.0054 0.680 42.52 159 KM2-6 # 280 10.5 23.0 45.04 0.2294 0.006305 0.000022 0.04276 0.00292 0.04919 0.00334 0.113 40.51 0.14 2.84 156.9 6.20 KM2-7 # 0.0069 1276 0.06 361 19.1 0.092 1233 0.0533 0.041217 0.000105 0.59748 0.00194 0.10514 0.00020 0.816 260.4 0.65 475.6 1.23 1717 3.45

KM10: Quai	rtz Monzonit	e Porphyr	y dike with	i potassiur	n feldspar	, biotite and	former am	phibole pher	ocrysts in fin	e-grained mat	rix, potassic a	alteration (bio	otite, minor su	lfides); feldø	phDS/apacithys	(minprinted)	ibya telsa y 60	105 e410 Ne	;		
KM10-1	0.0043	697	9.83	20.2	22.1	0.760	71.05	0.2445	0.006072	0.000033	0.03922	0.00144	0.04685	0.00163	0.435	39.02	0.21	39.07	1.41	41.64	82.9
KM10-2 #	0.0030	418	53.9	11.7	150	0.853	22.97	0.2812	0.008141	0.000184	0.05432	0.01329	0.04839	0.01145	0.395	52.27	1.17	53.71	12.8	118.4	558
KM10-3 #	0.0026	453	58.0	10.6	140	0.778	22.95	0.2544	0.008048	0.000172	0.05323	0.01159	0.04798	0.01018	0.307	51.67	1.10	52.66	11.2	98.05	502

I							_				_										
KM5: Latite	Porphyry, d	lark matrix	k-rich dike	with smal	l quartz, l	biotite and fo	ormer amph	nibole pheno	crysts, biotite	alteration with	1 ore-grade s	ulfides, overp	rinted by mir	ior epidote an	d chlorite;	5% veins (mi	ne coorc	linates 70	0/-250)		
KM5-1	0.0027	304	2.79	5.37	2.15	0.762	161.4	0.2449	0.005902	0.000014	0.03807	0.00145	0.04679	0.00167	0.885	37.94	0.16	37.94	1.42	38.56	85.2
KM5-2	0.0063	785	5.82	32.1	4.60	0.697	424.7	0.2235	0.005948	0.000014	0.03826	0.00037	0.04665	0.00041	0.476	38.23	0.09	38.12	0.36	31.24	20.9
KM5-4	0.0041	422	3.76	11.3	4.15	0.735	175.1	0.2364	0.005902	0.000016	0.03808	0.00081	0.04679	0.00093	0.540	37.94	0.10	37.95	0.79	38.77	47.3
KM5-5 #	0.0020	636	76.5	11.0	142	0.764	23.04	0.2554	0.007712	0.000170	0.05207	0.01184	0.04897	0.01079	0.356	49.52	1.08	51.54	11.4	146.4	517
KM5-6	0.0043	537	4.02	15.4	1.88	0.785	484.9	0.2515	0.005987	0.000016	0.03850	0.00051	0.04664	0.00057	0.468	38.48	0.10	38.36	0.50	30.62	29.1

D310: Quartz Latite Porphyry with characteristic quartz and chloritised amphibole phenocrysts, in a fine-grained matrix consisting mostly of quartz and plagioclase; 3% veins

D310-6	0.0076	609	4.35	28.6	4.48	0.515	408.3	0.1656	0.005934	0.000013	0.03831	0.00030	0.04682	0.00033	0.446	38.14	0.08	38.17	0.29	40.02	17.0
D310-7	0.0108	493	3.15	32.3	1.76	0.461	1154	0.1496	0.005913	0.000019	0.03849	0.00055	0.04721	0.00042	0.172	38.01	0.12	38.35	0.54	60.02	21.4
D310-9	0.0024	861	9.28	13.1	9.21	0.580	103.9	0.1865	0.005977	0.000030	0.03856	0.00106	0.04679	0.00121	0.394	38.41	0.19	38.41	1.04	38.45	61.9
D310-10	0.0044	604	4.44	17.1	2.44	0.667	429.6	0.2143	0.005944	0.000013	0.03835	0.00037	0.04679	0.00041	0.440	38.20	0.08	38.21	0.36	38.60	21.0

D310-17	0.0092	157	1.42	9.08	3.96	0.579	156.1	0.1883	0.005936	0.000015	0.03877	0.00145	0.04737	0.00167	0.912	38.15	0.09	38.63	1.42	67.97	83.9
D310-18	0.0088	284	2.07	15.7	2.50	0.600	393.5	0.1935	0.005907	0.000009	0.03823	0.00063	0.04693	0.00072	0.688	37.97	0.11	38.09	0.58	45.88	36.8
D310-19	0.0083	130	1.01	7.54	0.81	0.627	525.7	0.2843	0.006037	0.000017	0.05541	0.00157	0.06657	0.00172	0.887	38.80	0.11	54.76	1.51	824.3	54.0
D310-25	0.0055	1394	12.6	48.1	21.0	0.570	156.5	0.1831	0.005948	0.000022	0.03838	0.00108	0.04680	0.00124	0.503	38.23	0.14	38.24	1.05	38.79	63.1
KM1a: Quar	tz Latite Po	rphyry dik	e with big o	quartz ph	enocrysts,	biotite-alter	ed amphibo	le and acces	sory apatite;	minor calcite,	chlorite and o	ore minerals i	n altered mat	rix, 1-2 % ve	ins (mine co	oordinates -2	00E/-150	0N)			
KM1A-2 #	0.0080	609	7.26	47.8	10.25	0.281	308.8	0.1254	0.009589	0.000030	0.08807	0.00083	0.06661	0.00055	0.539	61.52	0.19	85.71	0.78	825.7	17.12

Footnotes see second part of Table

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	Weight	С	oncentration	ns		<u>Th</u>				Isotope Ratios	8				corr.			Ages (Ma)			
Sample	-	U	Pb	Pb*	Pbc	U	206 Pb*	208 Pb	206 Pb	±	207 Pb	±	207 Pb	±	coef.	206 Pb	±	207 Pb	±	207 Pb	±
Grain No	(mg)	(ppm)	(ppm)	(pg)	(pg)		204 Pb	206 Pb	238 U	2σ	235 U	2σ	206 Pb	2σ		238 U	2σ	235 U	2σ	206 Pb	2σ
(a)	(b)	(c)	(c)	(d)	(d)	(e)	(f)	(g)	(g)	(h)	(g)	(h)	(g)	(h)		(i)		(i)		(i)	

BAJO DE LA ALUMBRERA, ARGENTINA

BLA-P2: Int	ensely quartz	z - magneti	ite veined,	quartz-ma	gnetite (-b	oiotite - pota	ssium feldsj	par) altered	dacite porphy	ry with barely	discernable	quartz or ma	fic phenocrys	ts, plagioclase	e phenocrysts	s largely re	placed by	potassiu	m feldsp	ar	
P2-1	0.0259	285	1.15	8.92	21.0	0.581	44.18	0.1895	0.001149	0.000005	0.00734	0.00043	0.04633	0.00261	0.561	7.400	0.035	7.42	0.44	15.0	135
P2-2	0.0161	322	1.90	6.26	24.3	0.603	34.00	0.1978	0.001142	0.000010	0.00734	0.00074	0.04662	0.00448	0.501	7.357	0.062	7.43	0.74	30.0	229
P2-3	0.0238	484	1.92	13.3	32.4	0.410	44.59	0.1335	0.001157	0.000007	0.00738	0.00064	0.04626	0.00382	0.736	7.453	0.044	7.46	0.65	11.1	198
P2-4	0.0165	586	1.34	10.9	11.2	0.421	79.52	0.1373	0.001123	0.000004	0.00716	0.00034	0.04624	0.00210	0.740	7.235	0.025	7.24	0.35	9.95	108
P2-5	0.0112	451	1.72	6.44	12.8	0.694	47.78	0.2275	0.001175	0.000005	0.00755	0.00035	0.04659	0.00207	0.547	7.570	0.029	7.64	0.35	28.2	106
P2-6#	0.0199	184	0.74	7.86	6.95	0.229	93.25	0.0746	0.002242	0.000017	0.01443	0.00157	0.04668	0.00480	0.810	14.44	0.109	14.5	1.57	32.7	246
P2-7#	0.0202	250	2.44	33.14	16.2	0.203	150.0	0.0903	0.006606	0.000020	0.05967	0.00095	0.06551	0.00096	0.531	42.44	0.125	58.8	0.91	791	30.7
P2-9	0.0121	304	2.26	4.57	22.8	0.497	30.91	0.1645	0.001206	0.000021	0.00783	0.00231	0.04704	0.01321	0.861	7.772	0.135	7.91	2.33	51.5	667
P2-10	0.0079	315	1.12	3.44	4.10	0.562	69.57	0.1652	0.001135	0.000005	0.00723	0.00044	0.04622	0.00267	0.794	7.310	0.029	7.32	0.44	9.03	138
P2-11	0.0107	302	0.50	3.77	1.60	0.559	158.4	0.1819	0.001120	0.000003	0.00713	0.00018	0.04619	0.00113	0.610	7.216	0.018	7.22	0.19	7.80	58.4
P2-12	0.0079	372	0.95	3.06	5.80	0.507	50.22	0.1857	0.001172	0.000006	0.00759	0.00054	0.04697	0.00320	0.718	7.550	0.038	7.68	0.55	47.8	162
P2-13	0.0081	286	0.62	2.73	2.26	0.590	90.31	0.1921	0.001119	0.000004	0.00713	0.00099	0.04619	0.00638	0.257	7.212	0.027	7.21	1.00	7.50	331
BLA-EP3: D	acite porphy	ry with pla	agioclase, b	oiotitised a	mphibole,	blocky biot	ite and few	quartz phen	ocrysts, in con	ntact with Sam	ple BLA-P2	and truncatin	g early quart	z-magnetite v	eins. Later c	ut by secon	d generat	tion of qu	artz vein	is and late	e chalcopyrite joints
BLA-EP3: D EP3-1	acite porphy	ry with pla 322	a gioclase, b 0.70	biotitised a 6.55	mphibole, 5.91	blocky biot	ite and few (85.92	quartz phen 0.1699	ocrysts, in con 0.001111	ntact with Sam	ple BLA-P2 : 0.00713	and truncatin 0.00028	g early quart 0.04654	z-magnetite v 0.00174	eins. Later c 0.767	ut by secon 7.160	d generat	tion of qu	artz vein 0.28	and late	e chalcopyrite joints 89.4
BLA-EP3: D EP3-1 EP3-2	0.0177 0.0098	ry with pla 322 412	agioclase, b 0.70 1.26	6.55 4.74	mphibole, 5.91 7.62	blocky biot 0.518 0.546	ite and few (85.92 56.19	quartz phen 0.1699 0.1790	ocrysts, in con 0.001111 0.001128	0.000003 0.000031	0.00713 0.00724	and truncatin 0.00028 0.00234	g early quart 0.04654 0.04655	z-magnetite v 0.00174 0.01443	eins. Later c 0.767 0.466	ut by secon 7.160 7.269	d generat 0.020 0.201	tion of qu 7.22 7.33	0.28 2.35	25.7 26.4	e chalcopyrite joints 89.4 741
BLA-EP3: D EP3-1 EP3-2 EP3-3	0.0177 0.0098 0.0112	ry with pla 322 412 406	agioclase, b 0.70 1.26 2.21	6.55 4.74 5.56	mphibole, 5.91 7.62 19.2	0.518 0.546 0.627	85.92 56.19 35.83	quartz phen 0.1699 0.1790 0.2057	ocrysts, in con 0.001111 0.001128 0.001147	0.000003 0.000031 0.000038	ple BLA-P2 0.00713 0.00724 0.00737	and truncatin 0.00028 0.00234 0.00424	g early quart 0.04654 0.04655 0.04662	z-magnetite v 0.00174 0.01443 0.02591	eins. Later c 0.767 0.466 0.650	ut by secon 7.160 7.269 7.390	d generat 0.020 0.201 0.241	tion of qu 7.22 7.33 7.46	0.28 2.35 4.29	25.7 26.4 29.7	e chalcopyrite joints 89.4 741 1324
BLA-EP3: D EP3-1 EP3-2 EP3-3 EP3-4	0.0177 0.0098 0.0112 0.0074	ry with pla 322 412 406 197	0.70 1.26 2.21 2.95	6.55 4.74 5.56 2.18	mphibole, 5.91 7.62 19.2 19.7	blocky biot 0.518 0.546 0.627 0.945	85.92 56.19 35.83 24.63	quartz phen 0.1699 0.1790 0.2057 0.3242	ocrysts, in con 0.001111 0.001128 0.001147 0.001274	0.000003 0.000031 0.000038 0.000034	ple BLA-P2 = 0.00713 0.00724 0.00737 0.00858	0.00028 0.00234 0.00424 0.00561	g early quart 0.04654 0.04655 0.04662 0.04886	z-magnetite v 0.00174 0.01443 0.02591 0.03095	eins. Later c 0.767 0.466 0.650 0.749	ut by secon 7.160 7.269 7.390 8.209	d generat 0.020 0.201 0.241 0.221	7.22 7.33 7.46 8.68	0.28 2.35 4.29 5.65	25.7 26.4 29.7 141	89.4 741 1324 1480
BLA-EP3: D EP3-1 EP3-2 EP3-3 EP3-4 EP3-5#	0.0177 0.0098 0.0112 0.0074 0.0161	ry with pla 322 412 406 197 190	agioclase, b 0.70 1.26 2.21 2.95 5.92	6.55 4.74 5.56 2.18 45.2	mphibole, 5.91 7.62 19.2 19.7 50.0	blocky biot 0.518 0.546 0.627 0.945 0.155	85.92 56.19 35.83 24.63 78.82	Quartz phen 0.1699 0.1790 0.2057 0.3242 0.0595	0.001111 0.001128 0.001147 0.001274 0.015417	0.000003 0.000031 0.000038 0.000034 0.000022	0.00713 0.00724 0.00737 0.00858 0.12348	0.00028 0.00234 0.00424 0.00561 0.00214	g early quart 0.04654 0.04655 0.04662 0.04886 0.05809	z-magnetite v 0.00174 0.01443 0.02591 0.03095 0.00094	eins. Later c 0.767 0.466 0.650 0.749 0.593	ut by secon 7.160 7.269 7.390 8.209 98.63	d generat 0.020 0.201 0.241 0.221 0.140	7.22 7.33 7.46 8.68 118.2	0.28 2.35 4.29 5.65 1.93	25.7 26.4 29.7 141 533	89.4 741 1324 1480 35.4
BLA-EP3: D EP3-1 EP3-2 EP3-3 EP3-4 EP3-5# EP3-6	0.0177 0.0098 0.0112 0.0074 0.0161 0.0169	ry with pla 322 412 406 197 190 201	agioclase, h 0.70 1.26 2.21 2.95 5.92 0.91	6.55 4.74 5.56 2.18 45.2 4.05	mphibole, 5.91 7.62 19.2 19.7 50.0 11.4	blocky biot 0.518 0.546 0.627 0.945 0.155 0.514	85.92 56.19 35.83 24.63 78.82 40.24	Quartz phen 0.1699 0.1790 0.2057 0.3242 0.0595 0.1702	0.001111 0.001128 0.001147 0.001274 0.015417 0.001151	ntact with Sam 0.000003 0.000031 0.000038 0.000034 0.000022 0.000010	ple BLA-P2 : 0.00713 0.00724 0.00737 0.00858 0.12348 0.00746	and truncatin 0.00028 0.00234 0.00424 0.00561 0.00214 0.00116	g early quart 0.04654 0.04655 0.04662 0.04886 0.05809 0.04703	z-magnetite v 0.00174 0.01443 0.02591 0.03095 0.00094 0.00699	eins. Later c 0.767 0.466 0.650 0.749 0.593 0.751	ut by secon 7.160 7.269 7.390 8.209 98.63 7.417	d generat 0.020 0.201 0.241 0.221 0.140 0.066	7.22 7.33 7.46 8.68 118.2 7.55	0.28 2.35 4.29 5.65 1.93 1.17	25.7 26.4 29.7 141 533 50.5	e chalcopyrite joints 89.4 741 1324 1480 35.4 353
BLA-EP3: D EP3-1 EP3-2 EP3-3 EP3-4 EP3-5# EP3-6 EP3-7	0.0177 0.0098 0.0112 0.0074 0.0161 0.0169 0.0112	ry with pla 322 412 406 197 190 201 164	agioclase, b 0.70 1.26 2.21 2.95 5.92 0.91 1.20	6.55 4.74 5.56 2.18 45.2 4.05 2.36	mphibole, 5.91 7.62 19.2 19.7 50.0 11.4 11.1	blocky biot 0.518 0.546 0.627 0.945 0.155 0.514 0.566	85.92 56.19 35.83 24.63 78.82 40.24 30.88	Quartz phen 0.1699 0.1790 0.2057 0.3242 0.0595 0.1702 0.2309	0.001111 0.001128 0.001147 0.001274 0.001274 0.015417 0.001151 0.001173	0.000003 0.000031 0.000038 0.000034 0.000022 0.000010 0.000012	ple BLA-P2 : 0.00713 0.00724 0.00737 0.00858 0.12348 0.00746 0.00938	and truncatin 0.00028 0.00234 0.00424 0.00561 0.00214 0.00116 0.00199	g early quart 0.04654 0.04655 0.04662 0.04886 0.05809 0.04703 0.05799	z-magnetite v 0.00174 0.01443 0.02591 0.03095 0.00094 0.00699 0.01191	eins. Later c 0.767 0.466 0.650 0.749 0.593 0.751 0.706	ut by secon 7.160 7.269 7.390 8.209 98.63 7.417 7.558	d generat 0.020 0.201 0.241 0.221 0.140 0.066 0.070	7.22 7.33 7.46 8.68 118.2 7.55 9.48	0.28 2.35 4.29 5.65 1.93 1.17 2.01	25.7 26.4 29.7 141 533 50.5 530	89.4 741 1324 1480 35.4 353 448
BLA-EP3: D EP3-1 EP3-2 EP3-3 EP3-4 EP3-5# EP3-6 EP3-7 EP3-11	0.0177 0.0098 0.0112 0.0074 0.0161 0.0169 0.0112 0.0079	ry with pla 322 412 406 197 190 201 164 441	agioclase, b 0.70 1.26 2.21 2.95 5.92 0.91 1.20 1.25	6.55 4.74 5.56 2.18 45.2 4.05 2.36 4.15	mphibole, 5.91 7.62 19.2 19.7 50.0 11.4 11.1 5.75	blocky biot 0.518 0.546 0.627 0.945 0.155 0.514 0.566 0.613	85.92 56.19 35.83 24.63 78.82 40.24 30.88 61.39	Quartz phen 0.1699 0.1790 0.2057 0.3242 0.0595 0.1702 0.2309 0.1993	0.001111 0.001128 0.001147 0.001274 0.015417 0.001151 0.001173 0.001125	0.000003 0.000031 0.000038 0.000034 0.000022 0.000010 0.000012 0.000004	ple BLA-P2 : 0.00713 0.00724 0.00737 0.00858 0.12348 0.00746 0.00938 0.00716	and truncatin 0.00028 0.00234 0.00424 0.00561 0.00214 0.00116 0.00199 0.00039	g early quart 0.04654 0.04655 0.04662 0.04886 0.05809 0.04703 0.05799 0.04618	z-magnetite v 0.00174 0.01443 0.02591 0.03095 0.00094 0.00699 0.01191 0.00240	eins. Later c 0.767 0.466 0.650 0.749 0.593 0.751 0.706 0.698	ut by secon 7.160 7.269 7.390 8.209 98.63 7.417 7.558 7.247	d generat 0.020 0.201 0.241 0.221 0.140 0.066 0.070 0.028	7.22 7.33 7.46 8.68 118.2 7.55 9.48 7.25	0.28 2.35 4.29 5.65 1.93 1.17 2.01 0.39	25.7 26.4 29.7 141 533 50.5 530 7.11	e chalcopyrite joints 89.4 741 1324 1480 35.4 353 448 124
BLA-EP3: D EP3-1 EP3-2 EP3-3 EP3-4 EP3-5# EP3-6 EP3-7 EP3-11 EP3-12#	0.0177 0.0098 0.0112 0.0074 0.0161 0.0169 0.0112 0.0079 0.0073 0.0073	ry with pla 322 412 406 197 190 201 164 441 478	agioclase, b 0.70 1.26 2.21 2.95 5.92 0.91 1.20 1.25 4.13	6.55 4.74 5.56 2.18 45.2 4.05 2.36 4.15 5.46	mphibole , 5.91 7.62 19.2 19.7 50.0 11.4 11.1 5.75 24.7	blocky biot 0.518 0.546 0.627 0.945 0.155 0.514 0.566 0.613 0.520	85.92 56.19 35.83 24.63 78.82 40.24 30.88 61.39 31.92	Quartz phen 0.1699 0.1790 0.2057 0.3242 0.0595 0.1702 0.2309 0.1993 0.1840 0.1840	0.001111 0.001128 0.001147 0.001274 0.015417 0.001151 0.001173 0.001125 0.001486	0.000003 0.000031 0.000038 0.000034 0.000022 0.000010 0.000012 0.000010 0.000010	ple BLA-P2 : 0.00713 0.00724 0.00737 0.00858 0.12348 0.00746 0.00938 0.00716 0.01034	and truncatin 0.00028 0.00234 0.00424 0.00561 0.00214 0.00116 0.00199 0.00039 0.00124	g early quart 0.04654 0.04655 0.04662 0.04886 0.05809 0.04703 0.05799 0.04618 0.05046	z-magnetite v 0.00174 0.01443 0.02591 0.03095 0.00094 0.00699 0.01191 0.00240 0.00602	eins. Later c 0.767 0.466 0.650 0.749 0.593 0.751 0.706 0.698 0.164	ut by secon 7.160 7.269 7.390 8.209 98.63 7.417 7.558 7.247 9.575	d generat 0.020 0.201 0.241 0.221 0.140 0.066 0.070 0.028 0.064 0.016	7.22 7.33 7.46 8.68 118.2 7.55 9.48 7.25 10.4	0.28 2.35 4.29 5.65 1.93 1.17 2.01 0.39 1.25	25.7 26.4 29.7 141 533 50.5 530 7.11 216	e chalcopyrite joints 89.4 741 1324 1480 35.4 353 448 124 275 23.1
BLA-EP3: D EP3-1 EP3-2 EP3-3 EP3-4 EP3-5# EP3-6 EP3-7 EP3-11 EP3-12# EP3-13 EP2-14	0.0177 0.0098 0.0112 0.0074 0.0161 0.0169 0.0112 0.0079 0.0073 0.0073 0.0102	ry with pla 322 412 406 197 190 201 164 441 478 315 200	agioclase, b 0.70 1.26 2.21 2.95 5.92 0.91 1.20 1.25 4.13 0.43 0.43	6.55 4.74 5.56 2.18 45.2 4.05 2.36 4.15 5.46 3.70	mphibole , 5.91 7.62 19.2 19.7 50.0 11.4 11.1 5.75 24.7 0.73 1.20	blocky biot 0.518 0.546 0.627 0.945 0.155 0.514 0.566 0.613 0.520 0.555 0.510	85.92 56.19 35.83 24.63 78.82 40.24 30.88 61.39 31.92 319.5 225.7	Quartz phen 0.1699 0.1790 0.2057 0.3242 0.0595 0.1702 0.2309 0.1993 0.1840 0.1793 0.1678	0.001111 0.001128 0.001147 0.001274 0.015417 0.001151 0.001151 0.001125 0.001486 0.001106	0.000003 0.000031 0.000038 0.000034 0.000022 0.000010 0.000012 0.000004 0.000003 0.000003	0.00713 0.00724 0.00737 0.00858 0.12348 0.00746 0.00938 0.00716 0.01034 0.00699 0.00702	and truncatin 0.00028 0.00234 0.00424 0.00561 0.00214 0.00116 0.00199 0.00039 0.00124 0.00013 0.00017	g early quart 0.04654 0.04655 0.04662 0.04886 0.05809 0.04703 0.05799 0.04618 0.05046 0.04620	z-magnetite v 0.00174 0.01443 0.02591 0.03095 0.00094 0.00699 0.01191 0.00240 0.00602 0.00080	eins. Later c 0.767 0.466 0.650 0.749 0.593 0.751 0.706 0.698 0.164 0.518	ut by secon 7.160 7.269 7.390 8.209 98.63 7.417 7.558 7.247 9.575 7.126 7.126	d generat 0.020 0.201 0.241 0.221 0.140 0.066 0.070 0.028 0.064 0.016 0.057	7.22 7.33 7.46 8.68 118.2 7.55 9.48 7.25 10.4 7.13 7.13	0.28 2.35 4.29 5.65 1.93 1.17 2.01 0.39 1.25 0.13 0.17	25.7 26.4 29.7 141 533 50.5 530 7.11 216 7.89 7.07	89.4 741 1324 1480 35.4 353 448 124 275 23.1 28.2
BLA-EP3: D EP3-1 EP3-2 EP3-3 EP3-4 EP3-5# EP3-6 EP3-7 EP3-11 EP3-12# EP3-13 EP3-14 EP3-14	0.0177 0.0098 0.0112 0.0074 0.0161 0.0169 0.0112 0.0079 0.0073 0.0073 0.0102 0.0125	ry with pla 322 412 406 197 190 201 164 441 478 315 290 512	agioclase, b 0.70 1.26 2.21 2.95 5.92 0.91 1.20 1.25 4.13 0.43 0.43 0.43	6.55 4.74 5.56 2.18 45.2 4.05 2.36 4.15 5.46 3.70 4.15 2.12	mphibole, 5.91 7.62 19.2 19.7 50.0 11.4 11.1 5.75 24.7 0.73 1.20 2.58	blocky biot 0.518 0.546 0.627 0.945 0.155 0.514 0.566 0.613 0.520 0.555 0.519 0.187	85.92 56.19 35.83 24.63 78.82 40.24 30.88 61.39 31.92 319.5 225.7 410.8	Quartz phen 0.1699 0.1790 0.2057 0.3242 0.0595 0.1702 0.2309 0.1993 0.1840 0.1793 0.1678 0.0687	0.001111 0.001128 0.001147 0.001274 0.015417 0.001151 0.001151 0.001173 0.001125 0.001486 0.001106 0.001112	ntact with Sam 0.000003 0.000031 0.000038 0.000034 0.000010 0.000012 0.000004 0.000010 0.000010 0.000010	Die BLA-P2 : 0.00713 0.00724 0.00737 0.00858 0.12348 0.00746 0.00938 0.00716 0.01034 0.00699 0.00703 0.02806	and truncatin 0.00028 0.00234 0.00424 0.00561 0.00214 0.00116 0.00199 0.00039 0.00124 0.00013 0.00017 0.00015	g early quart 0.04654 0.04655 0.04662 0.04886 0.05809 0.04703 0.05799 0.04618 0.05046 0.04620 0.04621 0.05201	z-magnetite v 0.00174 0.01443 0.02591 0.03095 0.00094 0.00699 0.01191 0.00240 0.00602 0.00080 0.00098 0.00098	eins. Later c 0.767 0.466 0.650 0.749 0.593 0.751 0.706 0.698 0.164 0.518 0.468	ut by secon 7.160 7.269 7.390 8.209 98.63 7.417 7.558 7.247 9.575 7.126 7.164	d generat 0.020 0.201 0.241 0.221 0.140 0.066 0.070 0.028 0.064 0.016 0.057 0.022	tion of qu 7.22 7.33 7.46 8.68 118.2 7.55 9.48 7.25 10.4 7.13 7.17 28 1	0.28 2.35 4.29 5.65 1.93 1.17 2.01 0.39 1.25 0.13 0.17	25.7 26.4 29.7 141 533 50.5 530 7.11 216 7.89 7.97 220	e chalcopyrite joints 89.4 741 1324 1480 35.4 353 448 124 275 23.1 28.3 10.0
BLA-EP3: D EP3-1 EP3-2 EP3-3 EP3-4 EP3-5# EP3-6 EP3-7 EP3-11 EP3-12# EP3-13 EP3-14 EP3-21#	0.0177 0.0098 0.0112 0.0074 0.0161 0.0169 0.0112 0.0079 0.0073 0.0073 0.0102 0.0125 0.0113	ry with pla 322 412 406 197 190 201 164 441 478 315 290 512	agioclase, h 0.70 1.26 2.21 2.95 5.92 0.91 1.20 1.25 4.13 0.43 0.43 2.20	6.55 4.74 5.56 2.18 45.2 4.05 2.36 4.15 5.46 3.70 4.15 21.3	mphibole, 5.91 7.62 19.2 19.7 50.0 11.4 11.1 5.75 24.7 0.73 1.20 3.58	blocky biot 0.518 0.546 0.627 0.945 0.155 0.514 0.566 0.613 0.520 0.555 0.519 0.187	85.92 56.19 35.83 24.63 78.82 40.24 30.88 61.39 31.92 319.5 225.7 410.8	Quartz phen 0.1699 0.1790 0.2057 0.3242 0.0595 0.1702 0.2309 0.1993 0.1840 0.1793 0.1678 0.0687	0.001111 0.001128 0.001147 0.001274 0.015417 0.001151 0.001151 0.001125 0.001486 0.001106 0.001112 0.003839	ntact with Sam 0.000003 0.000031 0.000038 0.000034 0.000022 0.000010 0.000012 0.000004 0.000003 0.000003 0.000009 0.000004	ple BLA-P2 : 0.00713 0.00724 0.00737 0.00858 0.12348 0.00746 0.00938 0.00716 0.01034 0.00699 0.00703 0.02806	and truncatin 0.00028 0.00234 0.00424 0.00561 0.00214 0.00116 0.00199 0.00039 0.00124 0.00013 0.00017 0.00015	g early quart 0.04654 0.04655 0.04662 0.04886 0.05809 0.04703 0.05799 0.04618 0.05046 0.04620 0.04621 0.05301	z-magnetite v 0.00174 0.01443 0.02591 0.03095 0.00094 0.00699 0.01191 0.00240 0.00602 0.00080 0.00098 0.00025	eins. Later c 0.767 0.466 0.650 0.749 0.593 0.751 0.706 0.698 0.164 0.518 0.468 0.467	ut by secon 7.160 7.269 7.390 8.209 98.63 7.417 7.558 7.247 9.575 7.126 7.164 24.70	d generat 0.020 0.201 0.241 0.221 0.140 0.066 0.070 0.028 0.064 0.016 0.057 0.023	7.22 7.33 7.46 8.68 118.2 7.55 9.48 7.25 10.4 7.13 7.17 28.1	0.28 2.35 4.29 5.65 1.93 1.17 2.01 0.39 1.25 0.13 0.17 0.14	25.7 26.4 29.7 141 533 50.5 530 7.11 216 7.89 7.97 329	e chalcopyrite joints 89.4 741 1324 1480 35.4 353 448 124 275 23.1 28.3 10.9

- (a) Labels for fractions composed of single zircon grains or fragments; all zircons are annealed-leached ('chemical abrasion', after Mattinson, 2005).
- (b) Nominal fraction weights measured after annealing-leaching.
- (c) Nominal U and total Pb concentrations, subject to uncertainty in weighing zircons.
- (d) Pb* and Pbc represent radiogenic and common Pb, respectively.
- (e) Model Th/U ratio calculated from radiogenic ²⁰⁸Pb/²⁰⁶Pb ratio, assuming concordancy.
- (f) Measured ratio corrected for spike and fractionation only.
- (g) Corrected for fractionation, spike, and common Pb; the compositin of the procedure blank: ${}^{206}Pb/{}^{204}Pb = 18.08 \pm 0.22\%$; ${}^{207}Pb/{}^{204}Pb = 15.62 \pm 0.28\%$; ${}^{208}Pb/{}^{204}Pb = 38.05 \pm 0.59\%$.
 - The procedure blank was estimated at 1.0 ± 0.25 pb; common Pb correction according to Stacey and Kramers (1975) at 38 Ma and 8 Ma.
- ²⁰⁶Pb/²³⁸U and ²⁰⁷Pb/²⁰⁶Pb ratios corrected for initial disequilibrium in ²³⁰Th/²³⁸U using Th/U [magma] = 4.03 (unaltered P3 Porphyry and Campamiento Porphyry, Alumbrera; Ulrich, 1999) and 5.4 (Hybrid QMP rock, Bingham; Maughan et al., 2002).
- (h) Errors are 2-sigma, propagated using the algorithms of Schmitz and Schoene (2007) and Crowley et al. (2007).
- (i) Calculations are based on the decay constants of Jaffey et al. (1971). 206 Pb/ 238 U and 207 Pb/ 206 Pb ages corrected for initial disequilibrium in 230 Th/ 238 U using Th/U [magma] = 4.03 (Alumbrera) and 5.4 (Bingham).
- # Samples marked with # are not plotted on Figure 3 and 4 because they fall outside the diagrams and/or are highly discordant.