

Supplementary Information 1

Table S1.1

Stochastic modelling of deep magmatic controls on porphyry copper deposit endowment

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Table S1.1: Data relative to porphyry copper deposits available from the literature (average Sr/Y of the magmatic rocks associated with the deposits, duration of the mineralising event, duration of the magmatic cycle). Uncertainties (1σ) for Sr/Y are the standard deviations for the population of Sr/Y values available. Durations of the mineralising event and magmatic cycle are the differences between the oldest and youngest ages pertinent to these geological processes with their propagated uncertainties where uncertainties on the above ages are available.

Deposit	Acronym	Province	Sr/Y average	1σ	N. of Sr/Y values	Cu (Mt)	Overall duration of ore period (Ma)	1σ (Ma)	Magma cycle minimum duration (Ma)	1σ (Ma)	Ref. Sr/Y	Ref. Cu Mt	Ref. duration of ore period	ref. magma cycle duration
Craigmont	Cg	Canada (BC)	41.7	1.0	2	0.6					1	5		
El Abra	EA	Chile (Central)	95.0	17.8	5	8.8	0.16	0.26	4.65	0.38	1	6	21	21
El Teniente	ET	Chile (Central)	99.9	50.6	11	94.4	1.88	0.036	4.48		1	7	22,23	35
Rio Blanco	RB	Chile (Central)	100.4	17.3	2	56.7	1.44	0.036	3.48		1	7	24	24
Los Pelambres	LP	Chile (Central)	136.8	9.4	15	36.0	1.79	0.059	3.68	0.1	1	7	25	36,37
Potrerillos	Po	Chile (North.)	130.5	-	1	10.1					1	6		
Escondida	Es	Chile (North.)	95.1	19.8	3	32.5	0.9	0.3	4.2	1	1	7	26	38,37
Chuquicamata	Chu	Chile (North.)	107.7	10.1	6	66.4	1.3	0.36	3.5	0.4	1	7	27	39,37
El Salvador	ES	Chile (North.)	108.9	8.7	6	11.3	0.6		3		1	7	28	40
Radomiro Tomic	RT	Chile (North.)	122.3	20.4	8	19.9					1	7		
Chaucha	Cha	Ecuador				0.6	0.38	0.064	5.21		2	8	29	2,41
Junin	Ju	Ecuador	82.8	10.9	3	8.7	0.5	0.036	4.000		2	9	29	2,41
Batu Hijau	BH	Indonesia	62.8	-	1	7.2	0.09	-			1	7	30	
Sungun	Su	Iran	41.6	-	1	3.8					1	10		
Sar Cheshmeh	SC	Iran	76.9	28.0	15	14.4					3	7		
Cananea	Cn	Mexico	34.5	-	1	30.0					1	7		
Kharmagtal	Kh	Mongolia	59.4	-	1	0.8					1	6		
Cro Colorado	CC	Panama	79.2	-	1	20.3					1	7		
Yandera	Ya	P. N. Guinea	120.8	2.6	2	2.4					1	11		
Corocohuayco	Co	Peru (South.)	89.7	16.0	19	3.0	0.1	-	2.4		4	12	31	42
Antapaccay	Ay	Peru (South.)	111.6	-	1	3.2			5.2	0.7	1	12		43,37
Cro Verde	CV	Peru (South.)	77.2	0.7	2	15.7					1	13		
Atlas	At	Philippines	45.8	4.7	2	6.9					1	7		
Bayugo	By	Philippines	-	-	-	0.82	0.22					14	32	
Boyongan	Bn	Philippines	67.4	-	1	1.4	0.22	-			1	14	32	
Tampakan	Tk	Philippines	85.0	-	1	7.7			4.09	0.14	1	7		44
Santo Nino	SN	Philippines	135.0	-	1	0.6					1	6		
Aksug	Ak	Russia (Siberia)	153.5	5.1	2	4.2					1	15		

Table S1.1, continued

Deposit	Acronym	Province	Sr/Y average	1 σ	N. of Sr/Y values	Cu (Mt)	Overall duration of ore period (Ma)	1 σ (Ma)	Magma cycle minimum duration (Ma)	1 σ (Ma)	Ref. Sr/Y	Ref. Cu Mt	Ref. ore duration	ref. magma cycle duration
Zlatno	Zt	Slovakia	36.8	2.0	3	0.2					1	6		
Yulong	Yu	Tibet (China)	71.0	3.9	4	6.2					1	16		
Mangzong	Mz	Tibet (China)	81.6	-	1	0.2					1	16		
Silver Bell	SB	US (Arizona)	41.0	0.0	2	1.8					1	17		
Cu Creek	CCK	US (Arizona)	55.6	3.3	2	0.6					1	6		
Bagdad	Bg	US (Arizona)	59.8	31.4	3	6.4					1	18		
Ray	Ry	US (Arizona)	80.0	13.3	4	10.8					1	7		
Cu Basin	CBs	US (Nevada)	87.4	0.9	2	0.2					1	6		
Yerington	Ye	US (Nevada)	100.7	3.5	2	3.5					1	19		
Chino/Sta Rita	SR	US (N. Mexico)	35.9	8.1	2	8.7					1	20		
Bingham	Bh	US (Utah)	-	-	-	28.5	0.32	-	2			7	33	33
Butte	Bt	US (Montana)	-	-	-	35.1	1.5	-				7	34	
Bajo de la Alumbra	BjA	Argentina	-	-	-	2.87	0.021	0.028				7	45	
Reko Diq	RD	Pakistan	56.8	12.3	52	24.2	0.7	0.064			46	47	47	

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