

Chemical data to accompany the article:

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Table DD-1: LA-ICP-MS analyses of Co-spinel from northern Pakistan.

Sample no. (point)	Li	Be	Ti	V	Cr	Mn	Fe	Co	Ni	Zn	Ga	Sn	Pb	Bi
01 (a)	451	16.6	5.94	248	982	41.7	20140	359	333	2810	103	<0.64	<0.084	<0.024
01 (b)	509	16.4	10.6	191	668	42.4	20550	339	309	2770	104	<0.64	<0.084	<0.014
01 (c)	526	23.6	137	174	672	43.2	21290	324	291	2830	105	3.23	<0.082	<0.040
02 (a)	311	37.0	30.3	70.7	283	44.1	13960	307	220	2210	86.9	<0.77	<0.11	<0.055
02 (b)	219	43.4	69.8	69.2	333	44.4	14560	310	246	2220	84.4	<0.86	3.32	0.027
02 (c)	234	72.7	139	70.4	255	48.8	14560	322	242	2100	88.8	0.97	0.13	<0.040
03 (a)	561	20.7	3.87	195	391	40.6	14200	290	288	1810	75.4	<0.70	0.086	<0.017
03 (b)	519	15.1	18.5	213	415	42.5	14780	309	292	1880	77.1	1.13	<0.120	<0.064
03 (c)	497	19.4	6.06	201	428	40.8	14750	297	284	1770	73.2	<0.66	<0.082	<0.033
04 (a)	282	71.8	228	124	223	47.0	14450	308	270	1970	81.0	1.39	<0.17	<0.050
04 (b)	257	50.6	246	124	212	46.8	14400	300	259	1970	81.4	<1.31	0.17	<0.088
04 (c)	82.3	35.8	12.6	124	117	50.3	15280	286	226	1860	81.8	<0.86	<0.13	<0.032
05 (a)	317	52.1	81.3	74.3	282	39.3	10110	272	269	1860	118	<0.67	0.50	<0.058
05 (b)	348	52.6	203	66.5	241	34.9	11120	334	310	2600	156	<0.93	0.16	<0.080
05 (c)	203	57.3	67.5	69.8	226	38.0	10500	303	280	2260	134	<0.87	<0.11	<0.063
06 (a)	417	27.2	31.9	117	2570	72.7	13510	253	128	1980	98.7	5.07	1.70	<0.052
06 (b)	379	25.8	1100	116	2510	73.8	13480	252	102	2050	114	18.85	13.04	<0.047
06 (c)	373	32.8	82.3	120	2060	76.4	14510	269	82.7	2240	118	<2.04	<0.24	<0.059
07 (a)	232	34.2	29.8	83	838	73.7	15690	151	149	1950	79.9	<0.84	<0.14	<0.063
07 (b)	237	36.6	107	89.0	814	73.8	15710	152	154	1920	81.0	<0.84	<0.12	<0.040
07 (c)	202	49.2	35.6	58.2	1060	74.4	16130	158	167	2020	89.8	<1.22	<0.21	<0.051
08 (a)	373	26.7	286	137	1840	69.9	14280	257	68.4	2010	93.9	2.08	<0.17	<0.040
08 (b)	408	22.6	16.1	211	2100	77.0	15580	270	120	2110	92.5	<1.07	<0.13	<0.055
08 (c)	336	25.7	16.4	92	1810	74.8	14950	278	79.6	2060	104	2.73	0.25	<0.042
09 (a)	314	31.5	60.5	183	1840	68.0	13780	249	77.3	2100	103	<0.76	<0.12	<0.032

Sample no. (point)	Li	Be	Ti	V	Cr	Mn	Fe	Co	Ni	Zn	Ga	Sn	Pb	Bi
09 (b)	341	26.8	13.2	155	1920	64.3	14110	257	61.2	2250	101	1.04	<0.11	<0.049
09 (c)	369	28.7	16.1	187	1980	63.8	13970	258	85.1	2290	98.7	1.18	2.17	0.034
10 (a)	306	17.2	30.9	172	3450	87.1	14820	207	74.6	1900	111	10.12	4.17	<0.045
10 (b)	390	26.5	264	122	3100	75.6	15000	210	49.3	1940	105	1.88	<0.12	<0.032
10 (c)	402	30.8	297	135	2150	70.0	14250	205	53.7	1900	96.4	<1.55	5.20	0.025
13 (a)	543	17.4	5.45	202	436	42.6	12810	327	336	2340	85.6	<0.80	<0.10	<0.028
13 (b)	554	16.4	3.46	214	515	43.9	13550	338	335	2400	86.9	<0.89	<0.11	<0.049
13 (c)	554	14.8	3.01	202	448	41.6	12960	322	325	2230	85.3	<0.85	<0.096	0.026
14 (a)	392	28.0	30.5	124	483	36.8	13300	336	313	3280	130	1.06	0.20	<0.040
14 (b)	394	34.5	14.9	129	992	40.2	13880	328	318	2610	124	<0.86	0.17	<0.057
14 (c)	412	27.1	50.8	131	545	40.2	13850	304	310	2520	117	<0.75	<0.15	<0.046
15 (a)	122	34.6	31.6	82.1	300	51.6	13450	251	237	2130	124	0.83	<0.12	<0.055
15 (b)	108	78.0	185	84.8	365	51.1	13770	249	241	2180	124	0.98	<0.15	<0.031
15 (c)	67.3	46.6	26.7	87.9	577	52.0	13880	252	233	2230	125	<0.90	<0.13	<0.070
16 (a)	115	51.5	36.5	106	119	164	36690	76.0	70.5	3570	206	<0.85	0.086	0.033
16 (b)	130	62.7	37.0	106	122	168	36860	73.8	78.4	3340	199	<0.77	<0.088	<0.026
16 (c)	138	74.2	76.6	105	126	174	37260	83.6	89.7	3410	203	<0.71	<0.085	<0.018
17 (a)	8.93	30.7	274	917	569	127	19560	105	21.9	6380	171	4.80	1.10	0.033
17 (b)	7.90	32.1	393	918	368	135	22170	113	19.6	6220	189	<0.75	0.15	<0.055
17 (c)	8.23	36.0	182	184	108	157	22360	106	22.3	5940	258	0.92	0.22	0.057
18 (a)	189	27.6	30.3	149	304	129	31490	70.6	31.4	3140	198	<0.71	<0.082	<0.060
18 (b)	120	39.7	39.8	133	157	143	30510	68.8	46.3	3240	211	0.82	<0.11	<0.034
18 (c)	179	30.5	29.7	145	313	133	30720	68.8	44.3	3240	207	<0.95	<0.14	<0.045
19 (a)	185	21.1	238	328	1370	97.8	16870	194	173	6420	229	<0.80	0.19	<0.050
19 (b)	182	21.5	48.9	337	1510	94.2	17000	192	177	6460	228	<0.85	<0.11	<0.056
19 (c)	244	14.0	23.2	306	1200	97.1	17010	194	181	6380	212	<0.81	<0.11	<0.040
20 (a)	320	17.3	31.5	271	3620	48.3	14780	420	134	4200	125	1.03	0.15	<0.058
20 (b)	399	27.9	23.6	237	4950	51.2	14680	371	149	3360	97.4	0.98	0.095	<0.027
21 (a)	371	27.7	666	203	2240	64.5	16220	360	210	2990	95.8	1.83	0.17	<0.040
21 (b)	282	31.2	36.8	231	1930	68.7	16360	367	123	3150	99.9	<0.69	<0.10	<0.042
21 (c)	231	24.2	72.8	232	1710	71.2	17150	375	99.3	3180	102	<0.87	0.18	<0.032
22 (a)	150	16.5	35.8	293	1390	95.1	15830	180	218	5540	219	<0.75	<0.094	<0.028

Sample no. (point)	Li	Be	Ti	V	Cr	Mn	Fe	Co	Ni	Zn	Ga	Sn	Pb	Bi
22 (b)	150	20.0	27.6	288	1730	98.3	16650	185	213	5470	219	<0.64	<0.081	<0.040
22 (c)	130	11.8	63.1	329	1300	90.3	15670	182	202	5570	225	<0.92	<0.11	<0.039
23 (a)	125	44.2	38.3	104	1030	161	44380	69.5	65.7	3050	213	0.90	<0.085	0.036
23 (b)	248	33.6	28.5	91.9	1070	152	45370	70.8	61.4	3100	213	<0.74	<0.095	<0.016
23 (c)	187	33.2	28.3	113	1170	156	47170	69.2	64.6	3140	220	<0.79	<0.10	<0.030
24 (a)	383	21.5	317	210	1080	73.8	21010	296	170	2400	97.2	3.98	<0.12	<0.030
24 (b)	376	21.7	18.1	293	1200	78.9	22760	325	167	2820	113	<1.26	<0.15	<0.054
24 (c)	355	23.7	240	256	782	71.7	21470	296	182	2500	100.0	4.22	0.10	<0.030
25 (a)	116	55.7	49.2	114	921	159	38760	69.9	58.9	2890	206	<0.86	<0.11	<0.025
25 (b)	96.6	44.2	30.3	114	776	150	37100	68.4	48.8	2930	205	<0.74	<0.082	<0.032
25 (c)	119	54.6	198	112	890	164	40480	76.0	58.4	3160	221	<0.90	<0.14	<0.038
26 (a)	193	59.2	43.2	115	127	173	43200	79.2	70.6	3130	228	<0.79	<0.098	0.046
26 (b)	147	40.8	17.6	121	138	191	42030	79.7	71.6	3230	224	<0.95	0.18	<0.045
26 (c)	140	38.6	17.6	119	135	193	44160	80.2	77.9	3380	234	<0.90	<0.16	<0.038
27 (a)	89.6	52.8	26.9	178	564	153	33690	72.5	47.0	3210	202	<0.70	<0.092	<0.021
27 (b)	137	54.1	112	178	455	152	34230	70.0	45.3	3050	201	<0.65	<0.11	<0.034
27 (c)	124	41.9	47.5	129	879	155	34130	70.0	42.7	3160	188	0.85	<0.10	<0.029
28 (b)	348	23.7	21.6	150	2260	77.4	18490	309	186	2550	118	<1.47	2.54	<0.059
28 (c)	401	26.6	573	224	2100	75.4	19110	309	129	2450	111	2.47	0.25	<0.041
29 (a)	448	23.6	772	309	2020	71.3	17110	248	140	2020	90.0	27.3	41.11	0.094
29 (b)	400	27.0	21.9	312	1960	74.4	17420	252	131	2020	92.8	83.9	172.9	0.21
29 (c)	479	22.8	143	158	2250	74.0	17710	250	149	1970	85.5	7.68	5.41	<0.033
30 (a)	417	25.3	105	154	2870	73.2	15550	176	44.1	1870	90.4	722	17.8	0.071
30 (b)	459	24.9	163	169	2580	72.6	15690	178	46.2	1970	89.1	<0.93	0.32	<0.056
30 (c)	462	24.9	62.3	171	2730	72.9	15830	172	45.9	1960	86.1	<0.81	0.15	<0.028
31 (a)	525	23.4	26.4	169	2031	79.4	16730	259	112	2010	85.7	<0.65	<0.073	<0.026
31 (b)	403	24.1	14.9	114	2030	75.3	16380	263	119	2090	91.6	1.93	3.54	0.035
31 (c)	344	29.4	50.6	102	2240	74.4	16590	263	112	2080	89.4	<0.66	<0.083	<0.029
32 (a)	287	42.6	9.01	61.8	215	40.0	12330	259	222	1610	70.0	<0.77	<0.089	<0.049
32 (b)	228	48.9	21.3	49.6	201	40.3	12620	273	233	1780	78.0	<0.88	0.12	<0.049
32 (c)	223	58.1	19.0	49.7	143	41.9	12900	272	232	1660	74.2	0.97	0.15	<0.014
33 (a)	321	33.9	121	90.2	763	32.5	13170	330	301	3710	132	1.30	0.20	<0.058

Sample no. (point)	Li	Be	Ti	V	Cr	Mn	Fe	Co	Ni	Zn	Ga	Sn	Pb	Bi
33 (b)	315	45.9	17.9	87.0	776	35.2	13490	336	299	3650	131	<1.06	0.17	<0.044
33 (c)	294	40.5	38.9	86.3	805	34.1	13470	326	284	3370	125	<0.83	<0.10	<0.027
34 (a)	289	46.5	435	78.1	265	38.7	12770	278	247	1700	72.9	2.18	<0.091	<0.043
34 (b)	266	47.6	99.0	73.4	248	37.0	12470	257	223	1690	68.5	1.89	0.44	<0.064
34 (c)	266	43.8	222	72.8	290	37.3	12760	264	233	1740	68.8	1.71	<0.10	<0.040
35 (a)	29.8	29.9	399	368	1150	65.8	25640	244	120	2290	101	1.91	<0.07	<0.036
35 (b)	28.2	24.9	405	362	1200	63.9	24210	223	117	2180	94.2	1.28	<0.15	<0.028
35 (c)	31.0	22.0	129	360	1300	64.1	25730	241	133	2290	99.2	<0.77	0.19	0.027
36 (a)	51.0	16.6	123	704	2020	158	23240	268	165	7520	98.1	<0.98	<0.13	<0.036
36 (b)	50.3	19.4	189	721	2080	156	23330	263	159	7280	98.8	<1.05	<0.13	<0.044
36 (c)	54.7	18.2	165	717	2220	156	23290	259	150	6770	91.5	2.16	<0.096	<0.043
37 (a)	87.5	38.3	28.0	168	906	146	42770	62.4	45.5	2910	169	<0.75	<0.12	0.027
37 (b)	82.0	44.9	39.7	110	670	158	46370	66.4	53.9	3010	176	<0.69	0.25	0.025
37 (c)	102	37.2	93.7	85.4	524	152	45480	66.4	61.4	3310	184	<1.10	0.16	0.032