Longming Li, Shoufa Lin, Guangfu Xing, Fan Xiao, and Wenjiao Xiao, 2021, Identification of ca. 520 Ma mid-ocean-ridge-type ophiolite suite in the inner Cathaysia block, South China: Evidence from shearing-type oceanic plagiogranite: GSA Bulletin, <https://doi.org/10.1130/B36088.1>.

Supplemental Material

Table S1. Zircon SIMS U-Pb data and $\delta^{18}\text{O}$ values for the meta-felsic rocks from Shitun area, Cathaysia Block, South China.

Table S2. LA-ICPMS analysis of trace elements in zircon of the meta-felsic rocks from Shitun area, Cathaysia Block, South China.

Table S3. Zircon Hf isotope compositions of the meta-felsic rocks from Shitun area, Cathaysia Block, South China.

Table S4. Major and trace element compositions of the serpentinites, meta-ultramafic rocks and meta-felsic rocks from Shitun area, Cathaysia Block, South China.

Table S5. Whole rock Re-Os isotope compositions of the serpentinites from Shitun area, Cathaysia Block, South China.

Table S6. Sr-Nd isotope compositions of the meta-ultramafic and meta-felsic rocks from Shitun area, Cathaysia Block, South China.

Table S1. Zircon SIMS U-Pb data and $\delta^{18}\text{O}$ values for the meta-felsic rocks from Shitun area, Cathaysia Block, South China.

Grain	U	Th/U	$\delta^{18}\text{O}$	$\pm 2\sigma$	Ratios (common-Pb corrected)					Ages (common- Pb corrected, Ma)						
					$^{207}\text{Pb}/^{235}\text{U}$	$\pm 1\sigma$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 1\sigma$	Err*	$^{207}\text{Pb}/^{206}\text{Pb}$	$\pm 1\sigma$	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 1\sigma$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 1\sigma$	%Disc
17FJ-1-1																
1	11.7	0.25	5.00	0.21	0.69007	3.10	0.08506	1.50	0.48452	561	58.0	533	12.9	526	7.59	-6.45
2			5.09	0.25												
3	15.0	0.27	4.74	0.26	0.64803	4.05	0.08370	1.52	0.37489	458	81.2	507	16.3	518	7.57	13.5
4	12.1	0.23	5.06	0.22	0.69320	3.61	0.08401	1.66	0.46067	598	67.9	535	15.1	520	8.32	-13.6
5	11.6	0.29	4.97	0.30	0.70774	5.44	0.08551	1.52	0.27976	604	109	543	23.1	529	7.73	-13.0
6	9.0	0.25	5.20	0.17	0.72199	4.44	0.08616	1.68	0.37731	631	86.2	552	19.1	533	8.57	-16.3
7	13.3	0.30	4.64	0.23	0.72535	3.22	0.08772	1.52	0.47175	602	60.2	554	13.8	542	7.90	-10.5
8	13.0	0.31	5.03	0.29	0.69313	2.86	0.08345	1.53	0.53477	612	51.5	535	12.0	517	7.61	-16.2
9(core)	72.1	0.37			0.66989	1.90	0.08369	1.51	0.79278	532	25.2	521	7.77	518	7.50	-2.68
10(core)	52.8	0.35			0.67649	1.99	0.08361	1.51	0.75720	555	28.1	525	8.18	518	7.49	-7.07
11	18.1	0.43			0.67614	3.90	0.08839	1.75	0.44843	432	75.8	524	16.1	546	9.16	27.7
12(core)	75.0	0.44			0.67652	2.14	0.08382	1.51	0.70325	550	32.9	525	8.82	519	7.52	-5.85
13	16.6	0.25	5.40	0.18	0.61040	6.11	0.08089	1.52	0.24922	401	127	484	23.8	501	7.35	25.9
14(core)	288	0.67	4.79	0.17	0.68225	1.67	0.08535	1.51	0.90298	529	15.7	528	6.90	528	7.65	-0.17
15			4.90	0.10												
16	21.9	0.30	4.73	0.18	0.65664	6.18	0.08088	1.71	0.27711	563	124	513	25.2	501	8.27	-11.4
17	22.0	0.33	5.07	0.20	0.67677	4.41	0.08105	1.52	0.34466	624	86.8	525	18.2	502	7.34	-20.2
18(core)	71.6	0.41	4.02	0.21	0.65333	2.70	0.08306	1.51	0.55685	493	48.7	511	10.9	514	7.45	4.43
19	12.6	0.34	5.28	0.20	0.70090	5.68	0.08641	1.51	0.26580	561	115	539	24.1	534	7.75	-4.94
20	13.2	0.29	4.87	0.18	0.62419	6.32	0.08327	1.71	0.27005	386	131	492	25.0	516	8.46	34.9
21(core)			4.92	0.17												
22	20.4	0.31	4.94	0.15	0.61339	5.40	0.08051	1.53	0.28289	423	112	486	21.1	499	7.34	18.8
23(core)	95.2	0.47	4.41	0.13	0.59066	6.14	0.08223	1.52	0.24716	290	130	471	23.4	509	7.43	78.9
24(core)	87.4	0.38	5.00	0.14	0.67572	2.11	0.08469	1.56	0.73838	525	30.9	524	8.68	524	7.85	-0.14
25			4.89	0.18												

26(core)	229	0.82	4.51	0.19	0.70114	1.76	0.08673	1.56	0.88447	554	17.9	539	7.41	536	8.03	-3.28
27(core)	60.5	0.41	4.68	0.22	0.68557	2.72	0.08453	1.51	0.55385	560	48.6	530	11.3	523	7.57	-6.93
28	17.3	0.30	4.50	0.25	0.70949	3.61	0.08506	1.52	0.42107	621	69.0	544	15.3	526	7.68	-16.0
29	21.1	0.30	4.94	0.19	0.59302	6.92	0.07981	1.53	0.22057	366	145	473	26.5	495	7.28	36.4
30(core)	65.1	0.47	4.63	0.26	0.67302	2.93	0.08221	1.74	0.59296	581	50.4	523	12.0	509	8.51	-12.8
31(core)	295	0.60	4.96	0.33	0.68133	1.67	0.08475	1.50	0.89754	541	16.0	528	6.90	524	7.56	-3.25
32(core)	95.8	0.36	4.93	0.15	0.64988	2.79	0.08371	1.51	0.53977	464	51.2	508	11.2	518	7.50	12.0
33(core)	87.7	0.34	4.65	0.18	0.67449	2.15	0.08503	1.50	0.69887	512	33.4	523	8.82	526	7.58	2.88
34(core)	122	0.45	4.55	0.23	0.68038	2.45	0.08435	1.53	0.62351	549	41.4	527	10.1	522	7.68	-5.06
35(core)	77.5	0.35	4.74	0.19	0.67987	2.26	0.08595	1.50	0.66361	506	36.8	527	9.33	532	7.66	5.34
36(core)	127	0.42	4.35	0.19	0.69095	1.81	0.08709	1.51	0.83543	512	21.7	533	7.54	538	7.82	5.30
37(core)	98.7	0.44	4.52	0.24	0.68150	1.88	0.08545	1.50	0.79811	524	24.7	528	7.77	529	7.62	0.94
38(core)	112	0.52	4.46	0.22	0.67959	2.04	0.08525	1.50	0.73389	523	30.2	527	8.44	527	7.60	0.90
39(core)	98.9	0.47	4.43	0.23	0.66721	2.14	0.08451	1.50	0.70019	502	33.3	519	8.74	523	7.54	4.46
40	18.8	0.28	4.53	0.24	0.77718	3.34	0.08220	1.50	0.44927	886	60.5	584	14.9	509	7.35	-44.2
17FJ-12-1																
1	39.5	0.27	5.34	0.09	0.67821	2.25	0.08475	1.50	0.66732	531	36.3	526	9.3	524	7.56	-1.36
2	39.4	0.29	4.98	0.21	0.66430	2.42	0.08217	1.51	0.62189	554	40.8	517	9.9	509	7.37	-8.36
3	43.6	0.26	5.11	0.15	0.67020	2.30	0.08424	1.51	0.65551	518	37.6	521	9.4	521	7.54	0.62
4	35.2	0.28	5.10	0.16	0.66641	2.56	0.08368	1.51	0.58949	521	44.7	519	10.4	518	7.50	-0.50
5	20.1	0.32	4.87	0.16	0.65738	2.95	0.08301	1.51	0.51115	508	54.9	513	12.0	514	7.47	1.19
6	37.5	0.27	4.99	0.16	0.66445	2.27	0.08307	1.50	0.66183	530	36.8	517	9.2	514	7.42	-3.09
7	46.5	0.26	4.81	0.11	0.65950	2.79	0.08277	1.50	0.53799	522	50.7	514	11.3	513	7.40	-1.84
8	54.3	0.29	4.85	0.17	0.66812	2.07	0.08405	1.51	0.73042	517	30.7	520	8.4	520	7.56	0.75
9	32.8	0.30	5.25	0.13	0.64747	2.68	0.08244	1.50	0.56036	490	48.2	507	10.7	511	7.37	4.36
10	43.6	0.29	5.06	0.17	0.67698	2.22	0.08476	1.51	0.68192	527	35.2	525	9.1	524	7.63	-0.48
11	37.9	0.26	4.98	0.22	0.65109	2.77	0.08233	1.53	0.55304	505	50.0	509	11.2	510	7.52	1.01
12	46.3	0.37	4.92	0.17	0.66604	2.30	0.08392	1.52	0.66370	513	37.3	518	9.4	519	7.61	1.29
13			4.93	0.13												

14	42.5	0.26	4.88	0.17	0.70084	2.31	0.08589	1.50	0.65192	574	37.6	539	9.7	531	7.68	-7.70
15	33.0	0.28	5.09	0.17	0.65603	3.24	0.08338	1.52	0.47073	494	61.7	512	13.1	516	7.56	4.68
16	37.3	0.25	5.01	0.18	0.65676	3.00	0.08362	1.51	0.50218	490	56.2	513	12.1	518	7.49	5.84
17	38.7	0.30	5.09	0.24	0.69100	2.58	0.08517	1.50	0.58332	561	45.0	533	10.8	527	7.62	-6.39
18	41.8	0.28	4.97	0.24	0.66137	2.31	0.08423	1.52	0.66004	490	37.8	515	9.4	521	7.64	6.76
19	38.6	0.48	4.94	0.18	0.65771	3.41	0.08350	1.52	0.44472	496	65.9	513	13.8	517	7.53	4.33
20	35.1	0.29	4.84	0.13	0.67276	3.25	0.08447	1.51	0.46368	521	61.9	522	13.4	523	7.57	0.40
21	64.6	0.30	4.77	0.21	0.70324	2.48	0.08516	1.61	0.64904	600	40.3	541	10.4	527	8.15	-12.7
22	13.3	0.25	4.81	0.19	0.71882	3.34	0.08634	1.52	0.45532	617	62.9	550	14.3	534	7.80	-14.1
17FJ-15-3																
1	47.6	0.29	5.21	0.22	0.67391	2.19	0.08588	1.51	0.68727	488	34.8	523	9.00	531	7.69	9.17
2	49.4	0.26	5.21	0.12	0.67737	2.44	0.08311	1.51	0.61787	571	41.2	525	10.0	515	7.46	-10.3
3	42.4	0.30	5.28	0.21	0.67173	2.40	0.08258	1.51	0.62805	567	40.1	522	9.83	512	7.41	-10.1
4	14.8	0.24	5.07	0.22	0.68400	5.16	0.08376	1.53	0.29681	575	104	529	21.5	519	7.63	-10.3
5	39.5	0.41	5.10	0.17	0.67192	2.43	0.08373	1.52	0.62634	537	40.8	522	9.95	518	7.57	-3.69
6	29.6	0.28	4.91	0.19	0.67689	3.07	0.08334	1.50	0.48883	564	57.3	525	12.7	516	7.45	-8.79
7	46.1	0.29	5.24	0.13	0.66711	2.24	0.08386	1.53	0.68249	518	35.5	519	9.14	519	7.62	0.19
8	57.1	0.42	5.14	0.20	0.66002	2.38	0.08358	1.54	0.64717	502	39.5	515	9.67	517	7.67	3.16
9	19.5	0.29	5.09	0.13	0.68486	3.28	0.08564	1.52	0.46313	530	62.4	530	13.6	530	7.73	-0.02
10	28.1	0.24	5.28	0.20	0.67125	2.78	0.08431	1.51	0.54329	520	50.3	521	11.4	522	7.56	0.38
11	33.3	0.31	5.01	0.20	0.68053	2.47	0.08697	1.57	0.63548	482	41.7	527	10.2	538	8.11	12.0
12	19.2	0.28	5.34	0.19	0.65195	4.34	0.08384	1.60	0.36892	468	86.8	510	17.5	519	7.98	11.4
13	31.1	0.32	4.87	0.22	0.65960	4.19	0.08377	1.51	0.35981	496	83.9	514	17.0	519	7.51	4.78
14	58.6	0.25	4.95	0.23	0.67803	2.33	0.08496	1.50	0.64607	525	38.5	526	9.59	526	7.59	0.09
15	30.9	0.31	4.83	0.15	0.66894	3.03	0.08486	1.51	0.49750	498	56.8	520	12.4	525	7.60	5.61
16	45.2	0.31	4.92	0.16	0.69763	2.71	0.08535	1.50	0.55547	577	48.2	537	11.4	528	7.63	-8.91
17	37.4	0.30	4.95	0.26	0.67523	2.99	0.08416	1.56	0.52289	537	54.7	524	12.3	521	7.82	-3.09
18			4.90	0.21												
19	33.3	0.30	4.96	0.16	0.68602	2.64	0.08518	1.51	0.57061	545	46.7	530	11.0	527	7.63	-3.48

20	31.6	0.35	5.05	0.18	0.67895	3.83	0.08429	1.50	0.39290	546	75.2	526	15.8	522	7.55	-4.55
21	55.1	0.46	4.80	0.30	0.66201	2.40	0.08351	1.50	0.62561	511	40.6	516	9.75	517	7.46	1.33
22	36.7	0.24	4.62	0.15	0.68297	2.64	0.08434	1.50	0.56823	557	46.7	529	10.9	522	7.53	-6.56
17FJ-15-2B																
2(core)	121	0.52			0.68121	1.76	0.08503	1.52	0.86231	534	19.4	528	7.27	526	7.67	-1.50
3	13.9	0.31			0.68453	2.64	0.08395	1.52	0.57441	572	46.4	530	11.0	520	7.58	-9.57
4(core)	107	0.54			0.64618	2.15	0.08407	1.50	0.69681	442	34.0	506	8.62	520	7.50	18.3
5	32.6	0.46			0.67762	2.62	0.08373	1.51	0.57566	556	46.1	525	10.8	518	7.53	-7.03
6(core)	98.1	0.49			0.68374	1.95	0.08473	1.50	0.76950	550	27.0	529	8.09	524	7.58	-4.81
7	33.9	0.40			0.66261	2.64	0.08297	1.52	0.57540	527	46.7	516	10.7	514	7.51	-2.56
8(core)	51.8	0.50			0.66925	3.33	0.08221	2.94	0.88263	569	33.7	520	13.7	509	14.4	-10.9
9(core)	148	0.60			0.66497	1.69	0.08414	1.50	0.88592	504	17.2	518	6.89	521	7.51	3.53
10(core)	127	0.50			0.66734	1.77	0.08367	1.54	0.87171	524	18.9	519	7.22	518	7.68	-1.16
11(core)	84.5	0.42			0.68288	1.75	0.08442	1.50	0.86002	555	19.3	529	7.23	522	7.55	-6.08
12(core)	125	0.51			0.66035	1.95	0.08211	1.74	0.89302	542	19.0	515	7.89	509	8.51	-6.44
14	24.9	0.39			0.67119	2.25	0.08369	1.51	0.67426	536	35.9	521	9.20	518	7.54	-3.50
15(core)	115	0.49			0.65144	2.24	0.08326	1.96	0.87359	482	23.9	509	9.02	516	9.71	7.29
16(core)	126	0.46			0.67105	1.90	0.08400	1.58	0.82843	528	23.2	521	7.78	520	7.87	-1.50
17	24.8	0.27			0.67223	3.98	0.08392	1.50	0.37741	533	78.6	522	16.4	519	7.49	-2.70
18(core)	91.4	0.33			0.66175	2.03	0.08403	1.56	0.76961	496	28.3	516	8.22	520	7.80	5.07
19	39.4	0.21			0.65828	2.70	0.08325	1.51	0.55777	505	48.5	514	10.9	516	7.46	2.19
20(core)	159	0.50			0.67900	1.71	0.08458	1.52	0.88964	538	16.9	526	7.03	523	7.63	-2.89
21	28.2	0.26			0.66236	2.96	0.08404	1.50	0.50693	498	55.3	516	12.1	520	7.51	4.67
22	20.3	0.28			0.65276	4.87	0.08435	1.51	0.30975	457	99.5	510	19.7	522	7.57	14.7
23	28.9	0.38			0.68815	2.31	0.08358	1.50	0.64835	593	37.7	532	9.62	517	7.46	-13.3
24(core)	68.2	0.35			0.65624	2.39	0.08266	1.69	0.70872	514	36.6	512	9.65	512	8.34	-0.35
25	24.5	0.28			0.70609	2.31	0.08491	1.52	0.65974	615	37.1	542	9.75	525	7.69	-15.1
26	33.5	0.37			0.66911	2.42	0.08323	1.52	0.62651	541	40.7	520	9.90	515	7.52	-5.00
27(core)	155	0.42			0.66568	1.77	0.08446	1.52	0.85590	498	20.1	518	7.21	523	7.62	5.20

28	30.0	0.26	0.65732	3.07	0.08365	1.51	0.49036	491	58.0	513	12.5	518	7.51	5.66
29	53.8	0.27	0.66494	2.19	0.08465	1.51	0.68857	490	34.7	518	8.93	524	7.60	7.08
30	19.9	0.26	0.66715	3.45	0.08321	1.55	0.44948	535	66.1	519	14.1	515	7.69	-3.93
31	23.6	0.26	0.67634	2.77	0.08316	1.71	0.61659	567	46.8	525	11.4	515	8.47	-9.49
32	40.9	0.36	0.65009	2.42	0.08226	1.51	0.62223	504	41.2	509	9.74	510	7.39	1.19
33(core)	152	0.44	0.69341	1.67	0.08639	1.51	0.90262	538	15.6	535	6.96	534	7.72	-0.71
34	25.9	0.25	0.69034	2.66	0.08350	1.59	0.59840	602	45.4	533	11.1	517	7.91	-14.7
35	41.3	0.25	0.65796	2.26	0.08320	1.51	0.66884	505	36.5	513	9.13	515	7.47	2.04
36	42.7	0.45	0.66179	2.52	0.08414	1.50	0.59520	493	44.0	516	10.2	521	7.51	5.84
37	28.6	0.22	0.70742	2.20	0.08703	1.51	0.68608	565	34.5	543	9.30	538	7.79	-5.06
38	42.5	0.35	0.67047	2.87	0.08497	1.50	0.52395	500	53.0	521	11.8	526	7.60	5.26
39	17.1	0.29	0.69813	2.95	0.08598	1.51	0.51097	563	54.4	538	12.4	532	7.71	-5.77
40	33.8	0.41	0.68373	2.13	0.08470	1.51	0.70894	550	32.4	529	8.81	524	7.60	-4.95

Table S2. LA-ICPMS analysis of trace elements in zircon of the meta-felsic rocks from Shitun area, Cathaysia Block, South China.

Grain	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	ΣREE
17FJ-1-1															
1	0.01	1.96	0.00	0.07	0.78	0.26	7.29	2.92	37.4	14.3	64.3	13.5	134	25.0	302
2	0.01	1.56	0.00	0.06	0.61	0.23	5.37	2.08	28.2	10.7	50.6	10.5	107	20.5	238
4	0.01	1.96	0.01	0.29	0.83	0.14	6.61	2.40	31.9	12.7	57.4	11.8	119	23.2	268
5	0.01	2.05	0.01	0.26	0.55	0.22	6.28	2.23	29.8	12.1	54.6	11.4	114	22.1	255
6	0.01	1.13	0.00	0.25	0.59	0.20	3.51	1.51	20.4	8.4	39.7	8.3	85.5	16.9	186
7	0.02	10.7	0.05	1.27	4.08	0.63	34.2	12.3	149	53.8	226	43.0	396	71.4	1002
8	0.02	2.07	0.01	0.29	0.74	0.21	5.33	2.07	26.4	10.6	50.6	10.6	107	21.5	237
9(core)	0.01	1.63	0.00	0.17	0.49	0.11	4.79	2.03	31.3	15.2	79.5	18.6	194	40.2	388
11	0.01	2.16	0.01	0.07	0.82	0.19	7.56	2.74	36.1	13.9	63.4	13.2	131	25.0	297
12(core)	4.99	66.3	3.42	28.1	28.4	2.54	140	45.3	522	190.2	795	152.5	1396	247	3623
13	0.00	1.53	0.00	0.19	0.58	0.17	5.30	2.13	27.4	10.8	50.1	10.5	105	20.2	234
15	0.01	1.41	0.00	0.25	0.59	0.22	4.33	1.83	24.8	10.0	46.3	9.7	100	19.5	219
16	0.00	1.37	0.01	0.16	0.64	0.14	4.14	1.60	20.8	8.5	39.5	8.3	85.5	16.9	188
17	0.00	1.24	0.02	0.18	0.45	0.19	3.93	1.61	21.8	8.8	39.7	9.0	87.6	17.5	192
19	0.01	1.06	0.00	0.08	0.39	0.09	3.42	1.09	15.9	6.6	30.2	6.6	65.6	13.5	145
20	0.00	0.71	0.01	0.13	0.56	0.16	4.05	1.46	19.5	8.0	36.8	8.2	82.4	16.4	178
21(core)	0.00	9.50	0.05	1.33	4.97	0.66	36.5	13.1	164.5	61.8	267	53.1	494	90.1	1197
22	0.02	1.91	0.02	0.33	0.77	0.32	6.69	2.28	32	12.5	56	11.8	119	22.9	267
23(core)	0.13	14.6	0.08	1.72	5.22	1.15	44.7	17.1	209	76.8	327	62.0	570.9	105	1435
24(core)	0.00	5.50	0.08	1.13	4.82	1.11	34.7	11.9	148	53.5	226	43.0	402	72.9	1004
25	0.00	1.57	0.00	0.18	0.58	0.20	4.86	1.88	25.1	9.9	47.0	10.2	101	20.3	223
26(core)	0.27	7.32	0.18	1.66	2.44	0.62	17.4	6.56	93.6	41.9	217.2	48.5	506	104	1048
27(core)	0.04	5.33	0.09	1.89	4.63	0.92	35.8	12.6	154	56.6	242.8	47.7	442	81.2	1086

28	0.01	1.57	0.02	0.13	0.44	0.16	4.28	1.76	23.5	9.26	42.5	8.92	89.3	17.1	199
29	0.23	2.26	0.08	0.72	0.85	0.19	6.75	2.25	29.4	11.7	54.1	11.2	112	21.4	253
30(core)	0.01	6.73	0.04	1.99	5.70	1.20	42.6	14.8	180	66.0	285	55.4	509	93.0	1262
31(core)	0.08	28.9	0.12	2.80	8.74	1.23	73.9	26.5	321	118	499	97.2	898	158	2234
32(core)	0.32	6.74	0.19	2.21	3.58	0.70	22.8	8.04	107	41.8	189	39.4	382	72.8	876
33(core)	0.00	6.33	0.05	1.50	3.80	0.71	30.8	11.2	141	54.2	237	47.9	460	84.9	1079
34(core)	0.03	11.1	0.04	1.19	4.20	0.69	34.3	12.8	154	57.4	247	48.7	455	82.7	1109
35(core)	0.10	14	0.06	1.49	5.04	0.90	44.8	15.8	195	73.0	308	60.5	568	103	1390
36(core)	0.00	4.21	0.04	1.46	4.52	0.65	32.0	11.2	136	51.1	221	43.7	413	75.7	994
37(core)	7.28	28.8	3.19	19.42	8.44	1.58	38.0	12.5	150	56.0	240	47.3	444	81.0	1137
38(core)	0.00	5.49	0.06	1.76	4.39	0.90	34.1	12.5	153	58.0	249	50.0	465	85.6	1120
39(core)	1.58	16.8	3.59	38.7	14.4	2.40	44.5	13.0	148	53.4	223	43.0	399	71.0	1073
40	0.02	2.51	0.02	0.28	1.27	0.28	10.8	3.96	49.9	18.7	84.5	16.8	164	31.2	384
17FJ-12-1															
1	0.20	2.48	0.08	0.47	0.96	0.43	5.78	1.99	27.4	10.9	55.7	13.2	149	33.3	302
2	0.05	2.32	0.04	0.31	0.87	0.48	7.38	2.80	37.1	15.1	76.4	17.6	199	42.0	401
3	0.00	2.88	0.02	0.60	1.53	0.76	10.2	3.55	47.0	19.6	97.8	22.1	248	53.1	507
4	0.02	2.50	0.02	0.53	1.04	0.46	8.38	2.68	37.0	15.2	78.0	18.3	211	46.2	421
5	0.02	2.90	0.05	0.88	1.67	0.78	11.0	3.53	47.5	20.2	97.9	22.7	252	53.5	514
6	0.54	2.37	0.02	0.46	1.22	0.55	7.64	2.68	34.9	14.4	72.1	16.5	184	40.6	378
8	bdl	2.90	0.03	0.54	1.35	0.66	9.32	3.33	42.7	18.7	97.3	22.5	249	54.8	504
9	0.02	3.07	0.05	0.89	1.87	0.98	13.3	4.60	56.9	23.2	113	24.9	270	57.2	569
10	0.00	2.28	0.04	0.61	1.65	0.88	9.74	3.46	41.6	16.5	76.3	16.7	178	37.7	385
11	bdl	3.35	0.03	0.40	1.51	0.76	10.2	3.56	48.8	21.1	107	25.2	278	60.2	560
12	0.53	2.87	0.12	0.62	1.27	0.58	7.24	2.51	31.1	12.9	62.9	14.3	159	35.0	331
13	0.00	3.79	0.05	1.14	2.18	1.00	12.8	4.66	57.7	23.4	113	25.3	271	57.1	573

14	0.00	3.07	0.06	1.11	2.08	0.98	12.4	4.67	58	23.3	114	25.1	280	56.9	581
16	2.30	7.34	0.56	2.96	2.28	0.81	11.7	3.8	50.2	20.9	107	24.1	276	57.2	567
17	0.00	2.57	0.01	0.26	1.06	0.52	7.69	2.84	37.5	16.0	82.2	18.5	212	44.7	426
18	0.01	2.79	0.02	0.61	1.34	0.6	8.47	3.19	40.8	17.6	91.4	21.4	248	52.3	488
19	0.00	1.85	0.02	0.41	1.05	0.46	6.61	2.56	30.3	12.1	60	13.6	153	31.8	314
20	0.06	2.42	0.01	0.29	1.28	0.49	7.58	2.83	37.9	15.8	80.4	18.6	214	44.9	427
21	0.00	3.71	0.03	0.57	1.37	0.78	10.5	3.91	55.9	24	123	28.4	323	66.8	643

17FJ-15-3

1	0.01	1.43	0.02	0.40	0.55	0.39	4.91	1.70	22.2	9.35	47.7	12.1	141	32.4	274
2	0.01	3.52	0.10	2.43	5.11	0.89	33.4	11.5	139	50.6	210	39.9	360	63.6	921
3	0.01	2.78	0.01	0.32	1.29	0.27	10.3	3.78	49.0	18.4	81.4	16.7	163	30.4	378
4	0.02	2.47	0.00	0.20	1.17	0.33	8.03	3.07	40.7	15.5	69.6	14.7	140	27.3	323
6	0.02	1.26	0.01	0.17	0.48	0.21	3.32	1.20	16.5	7.12	37.2	9.2	106	24.6	207
7	bdl	3.25	0.05	1.21	3.08	0.68	20.5	7.50	89.3	33.9	152	31.5	309	59.2	711
8	0.02	3.38	0.02	0.65	2.10	0.46	15.4	6.05	70.8	26.3	112	22.6	212	39.1	511
9	0.01	1.69	0.02	0.32	1.19	0.39	8.57	3.34	42.8	17.0	77.2	16.4	168	32.7	370
10	0.01	2.43	0.01	0.38	0.99	0.21	8.70	3.45	44.7	17.4	77.6	15.9	151	28.3	351
11	bdl	2.66	0.03	0.70	2.30	0.45	16.8	5.80	69.6	25.8	113	22.8	220	41.3	521
12	0.00	2.49	bdl	0.31	0.83	0.25	7.96	2.99	38.3	15.1	67.8	13.6	132	24.8	306
13	bdl	2.56	0.01	0.57	1.35	0.37	11.6	4.16	53.2	20.1	87.7	17.4	161	30.0	390
16	bdl	2.86	0.03	0.62	1.80	0.42	13.9	4.87	61.8	23.5	104	21.3	210	39.2	484
17	0.01	1.62	0.03	0.19	0.98	0.45	6.21	2.18	28.3	11.3	54.2	12.2	133	29.4	280
19	0.00	3.35	0.04	0.80	2.19	0.46	16.6	6.20	75.8	28.3	124	25.0	234	43.3	560
20	bdl	2.97	0.01	0.34	1.35	0.25	9.33	3.57	46.3	17.9	79.0	16.3	158	28.5	363

Note: "bdl"denotes contents below the detection limit.

Table S3. Zircon Hf isotope compositions of the meta-felsic rocks from Shitun area, Cathaysia Block, South China.

Analysis	Age(Ma)	$^{176}\text{Lu}/^{177}\text{Hf}$	$^{176}\text{Hf}/^{177}\text{Hf}$	$\pm 2\sigma$	$^{176}\text{Hf}/^{177}\text{Hf}$ initial	$\varepsilon_{\text{Hf}(t)}$	$T_{\text{DM1}}(\text{Ma})$	$T_{\text{DM2}}(\text{Ma})$
17FJ-1-1								
1	518	0.000759	0.282769	0.000018	0.282762	11.1	680	778
2	518	0.000960	0.282768	0.000017	0.282758	10.9	686	786
3	518	0.000417	0.282740	0.000017	0.282736	10.1	715	837
4	518	0.000296	0.282763	0.000018	0.282760	11.0	681	782
5	518	0.000330	0.282760	0.000017	0.282757	10.9	685	789
6	518	0.000378	0.282768	0.000018	0.282764	11.1	675	773
7	518	0.000670	0.282769	0.000015	0.282763	11.1	678	776
8	518	0.000305	0.282740	0.000021	0.282737	10.2	712	833
9(core)	523	0.000813	0.282769	0.000018	0.282761	11.1	681	777
10(core)	523	0.001059	0.282810	0.000017	0.282800	12.5	627	689
11	518	0.000387	0.282736	0.000018	0.282733	10.0	719	844
12(core)	523	0.001317	0.282821	0.000018	0.282808	12.8	616	671
13	518	0.000375	0.282745	0.000016	0.282741	10.3	707	824
14(core)	523	0.003132	0.282903	0.000019	0.282873	15.1	524	524
15	518	0.000360	0.282763	0.000015	0.282760	11.0	681	783
16	518	0.000510	0.282759	0.000017	0.282754	10.8	689	795
17	518	0.000840	0.282779	0.000019	0.282770	11.4	668	759
18(core)	523	0.000616	0.282784	0.000016	0.282778	11.7	656	738
19	518	0.000305	0.282748	0.000015	0.282745	10.5	702	817
20	518	0.000510	0.282747	0.000017	0.282742	10.4	706	823
17FJ-12-1								
1	520	0.000988	0.282791	0.000019	0.282782	11.8	653	732
2	520	0.001141	0.282760	0.000020	0.282749	10.7	700	806
3	520	0.001062	0.282776	0.000019	0.282765	11.2	676	769
4	520	0.000960	0.282770	0.000020	0.282761	11.1	682	780
5	520	0.000576	0.282757	0.000016	0.282751	10.7	694	801
6	520	0.001052	0.282790	0.000020	0.282780	11.8	655	736
7	520	0.001047	0.282788	0.000021	0.282778	11.7	658	741
8	520	0.001147	0.282793	0.000021	0.282782	11.8	653	732
9	520	0.001196	0.282819	0.000019	0.282807	12.7	618	675
10	520	0.001104	0.282756	0.000019	0.282746	10.5	704	813

11	520	0.000895	0.282773	0.000021	0.282764	11.2	677	772
12	520	0.000946	0.282781	0.000017	0.282772	11.4	667	755
13	520	0.001032	0.282769	0.000019	0.282759	11.0	685	783
14	520	0.000978	0.282759	0.000019	0.282749	10.7	698	805
15	520	0.001303	0.282788	0.000020	0.282776	11.6	663	746
16	520	0.001279	0.282786	0.000020	0.282774	11.5	665	750
17	520	0.001063	0.282759	0.000018	0.282748	10.6	700	807
18	520	0.001126	0.282787	0.000020	0.282776	11.6	662	745
19	520	0.000907	0.282743	0.000021	0.282734	10.1	719	839
20	520	0.000804	0.282802	0.000019	0.282794	12.2	635	704
17FJ-15-3								
1	522	0.000550	0.282776	0.000015	0.282770	11.5	667	756
2	522	0.000792	0.282749	0.000017	0.282741	10.4	709	822
3	522	0.000805	0.282798	0.000015	0.282790	12.1	641	713
4	522	0.000517	0.282770	0.000017	0.282764	11.2	675	770
5	522	0.000610	0.282749	0.000015	0.282743	10.5	705	818
6	522	0.000501	0.282761	0.000016	0.282757	11.0	686	787
7	522	0.000736	0.282782	0.000017	0.282775	11.6	662	746
8	522	0.000806	0.282761	0.000017	0.282753	10.8	693	796
9	522	0.000510	0.282762	0.000019	0.282757	11.0	686	787
10	522	0.000421	0.282754	0.000016	0.282750	10.7	695	803
11	522	0.000711	0.282762	0.000017	0.282755	10.9	689	791
12	522	0.000931	0.282794	0.000020	0.282785	12.0	647	723
13	522	0.000578	0.282765	0.000017	0.282759	11.1	683	782
14	522	0.001197	0.282799	0.000016	0.282787	12.1	645	718
15	522	0.000579	0.282773	0.000016	0.282767	11.3	672	764
16	522	0.000706	0.282760	0.000018	0.282753	10.8	692	795
17	522	0.000390	0.282739	0.000015	0.282735	10.2	715	835
18	522	0.000701	0.282754	0.000019	0.282747	10.6	700	808
19	522	0.000541	0.282757	0.000019	0.282752	10.8	693	799
20	522	0.000630	0.282771	0.000015	0.282765	11.3	675	769
17FJ-15-2B								
1	520	0.000811	0.282762	0.000013	0.282754	10.8	691	794
2(core)	521	0.001699	0.282782	0.000015	0.282765	11.3	679	768
3	520	0.000948	0.282735	0.000015	0.282725	9.8	732	859
4(core)	521	0.001945	0.282826	0.000016	0.282807	12.7	620	675

5	520	0.000662	0.282727	0.000015	0.282721	9.7	737	869
6(core)	521	0.001901	0.282772	0.000016	0.282754	10.8	697	795
7	520	0.000556	0.282755	0.000017	0.282750	10.7	696	805
8(core)	521	0.001552	0.282766	0.000017	0.282751	10.7	699	801
9(core)	521	0.001114	0.282748	0.000018	0.282737	10.2	717	832
10(core)	521	0.002087	0.282744	0.000016	0.282723	9.8	742	863
11(core)	521	0.001686	0.282775	0.000015	0.282759	11.0	688	784
12(core)	521	0.001577	0.282761	0.000017	0.282745	10.5	707	813
13	520	0.000539	0.282795	0.000018	0.282790	12.1	640	714
14	520	0.000810	0.282786	0.000016	0.282778	11.7	658	741
15(core)	521	0.001305	0.282798	0.000015	0.282785	12.0	649	724
16(core)	521	0.001729	0.282750	0.000013	0.282733	10.1	725	840
17	520	0.000578	0.282721	0.000015	0.282715	9.5	744	882
18(core)	521	0.001899	0.282768	0.000014	0.282750	10.7	702	803
19	520	0.000679	0.282730	0.000018	0.282724	9.8	733	863
20(core)	521	0.001909	0.282832	0.000017	0.282813	12.9	611	661

Table S4. Major and trace element compositions of the serpentinites, meta-ultramafic rocks and meta-felsic rocks from Shitun area, Cathaysia Block, South China.

Sample	14WY-7-1	14WY-7-2	14WY-7-3	14WY-7-4	14WY-7-5	14WY-7-6	14WY-7-7	14WY-7-8	14WY-19-1	14WY-19-2	14WY-19-3	14WY-19-4	14WY-19-5
	Serpentinites (thirteen samples)												
SiO ₂	39.55	39.76	39.36	39.47	39.83	40.02	39.67	39.39	37.74	33.69	38.09	37.55	36.30
TiO ₂	<0.001	<0.001	0.00	0.01	<0.001	<0.001	<0.001	<0.001	0.02	0.01	<0.001	0.20	0.00
Al ₂ O ₃	0.27	0.24	0.20	0.30	0.19	0.23	0.25	0.23	0.88	0.61	0.67	1.61	0.32
Fe ₂ O ₃ ^T	7.26	7.29	8.28	8.86	7.28	7.49	7.64	7.03	10.02	10.44	6.56	8.53	8.13
MnO	0.09	0.08	0.08	0.10	0.08	0.04	0.06	0.06	0.09	0.15	0.11	0.13	0.12
MgO	39.6	40.0	39.6	39.1	40.3	39.8	40.0	40.2	38.7	38.9	40.2	36.8	40.6
CaO	0.05	0.03	0.04	0.09	0.03	0.03	0.05	0.28	0.04	0.12	0.06	1.06	0.06
Na ₂ O	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
K ₂ O	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.04	<0.01
P ₂ O ₅	<0.001	<0.001	<0.001	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.01	<0.001
LOI	13.06	12.87	12.62	12.17	12.52	12.77	12.67	13.05	12.68	16.14	14.20	13.95	15.09
Total	99.61	99.83	99.64	99.60	99.80	100.1	99.99	99.75	99.68	99.73	99.39	99.65	100.0
Sc	5.52	5.36	6.34	4.173	5.02	5.34	5.31	4.866	10.0	6.39	7.26	9.41	6.04
V	20.71	19.66	17.03	21.22	16.23	16.53	16.91	18.05	37.21	43.22	23.67	54.43	21.64
Cr	2955	2754	2473	3710	2334	2571	2437	2329	3622	5790	2326	2360	1875
Co	115.3	102.2	121.6	110.8	100.9	104.5	100.2	105.4	94.04	104	74.25	93.93	111.3
Ni	2318	2155	2207	2316	2145	2204	2126	2246	1847	1906	1429	1905	2194
Ga	0.558	0.624	0.393	0.707	0.511	0.359	0.29	0.433	1.04	0.776	0.703	2.601	0.436
Rb	0.253	0.187	0.174	0.252	0.146	0.246	0.19	0.178	0.234	0.245	0.151	0.976	0.142
Sr	1.119	1.014	2.002	4.572	1.089	1.059	1.091	3.442	0.635	0.758	0.635	9.368	0.82
Y	0.16	0.196	0.231	0.459	0.049	0.774	0.05	0.114	0.727	0.183	0.093	3.073	0.103
Zr	0.559	0.314	0.311	1.434	0.214	0.302	0.192	0.277	1.317	0.637	0.368	11.79	0.281
Nb	0.326	0.311	0.186	0.479	0.087	0.354	0.076	0.143	0.214	0.078	0.063	0.684	0.046
Cs	0.03	0.037	0.076	0.628	0.018	0.183	0.213	0.088	0.073	0.056	0.083	0.104	0.051
Ba	11.33	11.67	24.23	20.58	3.537	8.421	8.382	8.367	1.496	1.528	1.235	7.736	1.65
La	0.438	0.181	0.135	10.99	0.081	1.187	0.05	0.065	0.164	0.108	0.076	0.862	0.034
Ce	0.552	0.357	0.268	16.53	0.125	2.051	0.099	0.126	0.362	0.224	0.129	2.164	0.059

Pr	0.041	0.042	0.031	1.531	0.012	0.205	0.012	0.015	0.045	0.025	0.012	0.322	0.006
Nd	0.165	0.165	0.113	4.048	0.037	0.774	0.039	0.055	0.209	0.095	0.045	1.543	0.021
Sm	0.036	0.037	0.023	0.4	0.007	0.125	0.009	0.012	0.066	0.02	0.009	0.448	0.005
Eu	0.016	0.014	0.013	0.163	0.005	0.072	0.009	0.01	0.016	0.005	0.005	0.159	0.002
Gd	0.029	0.032	0.024	0.344	0.005	0.11	0.006	0.014	0.085	0.022	0.01	0.501	0.004
Tb	0.005	0.005	0.004	0.025	<0.001	0.014	<0.001	0.003	0.018	0.004	<0.001	0.09	<0.001
Dy	0.029	0.032	0.031	0.104	0.005	0.082	0.007	0.019	0.123	0.027	0.011	0.571	0.009
Ho	0.006	0.006	0.008	0.016	<0.001	0.017	<0.001	0.003	0.03	0.007	0.002	0.12	0.002
Er	0.014	0.017	0.024	0.037	0.003	0.043	0.004	0.01	0.094	0.022	0.007	0.335	0.01
Tm	0.002	0.003	0.004	0.005	<0.001	0.006	<0.001	0.002	0.014	0.004	<0.001	0.048	0.002
Yb	0.016	0.02	0.03	0.036	0.003	0.041	0.005	0.014	0.108	0.031	0.015	0.305	0.022
Lu	0.003	0.003	0.005	0.006	<0.001	0.006	<0.001	0.003	0.018	0.006	0.003	0.048	0.005
Hf	0.016	0.009	0.009	0.028	0.006	0.009	0.005	0.007	0.055	0.019	0.011	0.339	0.008
Ta	0.022	0.018	0.007	0.026	0.005	0.02	0.005	0.019	0.012	0.007	0.005	0.05	0.003
Pb	1.912	0.898	0.893	1.502	0.888	2.016	1.093	2.318	1.168	1.52	1.048	2.549	2.172
Th	0.032	0.055	0.019	0.176	0.01	0.043	0.007	0.014	0.066	0.029	0.015	0.145	0.004
U	0.07	0.07	0.04	0.068	0.25	0.21	0.07	0.067	0.01	0.01	0.006	0.03	0.00
Mg#	91.6	91.7	90.5	89.8	91.7	91.4	91.3	92.0	88.5	88.2	92.5	89.6	90.9
(La/Yb) _{CN}	18.1	5.97	2.97	201	17.8	19.1	6.60	3.06	1.00	2.30	3.34	1.87	1.02
&Eu	1.53	1.26	1.71	1.36	2.61	1.90	3.78	2.38	0.66	0.74	1.63	1.04	1.38
ΣREE	1.35	0.91	0.71	34.2	0.28	4.73	0.24	0.35	1.35	0.60	0.32	7.52	0.18

Sample	18FJ-4-1	18FJ-4-2	18FJ-4-3	18FJ-4-5	18FJ-4-6	18FJ-5-2	18FJ-9-1	18FJ-9-3	18FJ-9-4	18FJ-9-6	18FJ-11-1
	Hornblende schists (eleven samples)										
SiO ₂	45.2	53.7	34.5	43.6	44.5	45.4	39.3	43.2	42.6	42.6	42.9
TiO ₂	0.49	0.05	0.88	0.51	0.52	0.51	1.45	1.19	1.17	1.29	1.47
Al ₂ O ₃	9.3	2.4	13.6	9.7	10.0	12.1	13.9	13.4	14.1	12.7	13.4
Fe ₂ O ₃ ^T	10.9	9.6	16.8	11.1	10.9	11.8	14.2	13.8	13.6	13.7	14.4
MnO	0.18	0.17	0.25	0.17	0.19	0.21	0.24	0.21	0.20	0.22	0.20
MgO	20.3	26.9	22.0	20.6	19.6	14.0	16.0	11.5	11.7	14.1	11.7
CaO	7.45	0.04	2.89	8.08	9.08	11.6	8.91	11.9	11.8	11.3	10.8
Na ₂ O	0.64	0.01	0.26	0.89	0.79	1.72	1.54	1.82	2.01	1.88	1.46
K ₂ O	0.05	0.02	0.03	0.08	0.06	0.17	0.16	0.48	0.64	0.18	0.38
P ₂ O ₅	0.01	0.01	0.05	0.03	0.03	0.02	0.08	0.13	0.13	0.01	0.04
LOI	5.43	5.67	8.62	5.01	4.36	1.80	3.87	1.73	1.83	1.88	2.99
Total	99.99	98.63	99.83	99.74	99.97	99.24	99.57	99.43	99.71	99.84	99.69
Sc	26.7	6.97	58.7	27.0	28.4	34.2	60.8	48.2	48.7	53.8	51.2
V	183	94	325	191	189	225	387	373	397	392	422
Cr	2198	3747	1834	2842	2001	874	743	562	608	698	385
Co	83.17	110.99	105.50	77.21	78.95	69.58	75.69	64.29	64.53	78.19	64.24
Ni	1037	2355	814	901	837	373	350	240	247	296	127
Ga	9.59	3.54	6.70	9.46	9.46	10.8	14.0	16.8	16.3	13.8	15.9
Rb	0.19	0.08	0.16	0.43	0.28	3.31	0.81	13.1	15.6	0.75	10.01
Sr	19.32	0.80	4.87	53.5	42.5	158	80.2	474	469	105	118
Y	13.0	2.84	32.2	12.3	13.5	14.5	29.5	25.6	24.2	24.5	24.0
Zr	25.3	2.67	39.2	31.0	27.8	30.2	50.4	52.1	50.1	46.2	28.2
Nb	1.26	0.21	2.48	3.95	0.80	0.73	3.35	2.63	2.58	2.77	1.30
Cs	0.07	0.08	0.07	0.13	0.04	0.13	0.11	0.74	0.57	0.07	0.26
Ba	2.47	10.7	12.2	9.44	5.72	30.3	20.9	201	474	24.0	44.0
La	1.13	0.82	2.33	2.70	0.92	1.03	3.17	2.68	2.50	2.33	0.76
Ce	2.31	1.16	4.78	5.00	2.53	2.17	10.1	8.12	7.75	7.74	3.97
Pr	0.48	0.23	0.87	0.67	0.47	0.39	1.82	1.48	1.40	1.44	0.99
Nd	2.62	1.16	4.58	3.18	2.75	2.24	10.2	8.24	7.82	8.09	6.72

Sm	1.08	0.44	2.11	1.24	1.21	1.13	3.67	2.94	2.85	2.96	2.91
Eu	0.45	0.23	0.61	0.55	0.45	0.57	1.26	1.23	1.43	1.28	1.15
Gd	1.69	0.58	3.67	1.80	1.83	1.86	4.69	3.81	3.73	3.84	3.83
Tb	0.32	0.11	0.72	0.34	0.35	0.37	0.83	0.67	0.65	0.68	0.69
Dy	2.18	0.71	5.19	2.28	2.37	2.52	5.45	4.53	4.33	4.43	4.53
Ho	0.49	0.15	1.17	0.48	0.52	0.56	1.15	0.96	0.91	0.93	0.93
Er	1.36	0.39	3.34	1.32	1.43	1.55	3.13	2.62	2.48	2.52	2.49
Tm	0.20	0.06	0.51	0.20	0.22	0.24	0.45	0.38	0.36	0.37	0.36
Yb	1.26	0.36	3.22	1.24	1.36	1.53	2.79	2.38	2.23	2.22	2.16
Lu	0.19	0.05	0.48	0.19	0.20	0.24	0.41	0.35	0.33	0.32	0.31
Hf	0.78	0.09	1.25	0.94	0.87	0.96	1.78	1.74	1.69	1.63	1.16
Ta	0.08	0.07	0.10	0.25	0.05	0.05	0.19	0.14	0.15	0.14	0.06
Pb	0.30	0.87	0.20	0.28	0.08	0.27	0.54	1.37	1.15	0.65	0.52
Th	0.11	0.03	0.19	0.39	0.13	0.11	0.03	0.01	0.01	0.01	0.00
U	0.03	0.04	0.08	0.09	0.04	0.04	0.02	0.01	0.01	0.01	0.00
Mg#	78.9	84.8	72.4	78.8	78.2	70.3	69.2	62.6	63.1	67.3	61.9
(La/Sm) _{CN}	0.68	1.19	0.71	1.40	0.49	0.59	0.56	0.59	0.57	0.51	0.17
(La/Yb) _{CN}	0.64	1.62	0.52	1.56	0.48	0.49	0.82	0.81	0.80	0.75	0.25
(Gd/Yb) _{CN}	1.11	1.34	0.94	1.20	1.11	1.01	1.39	1.32	1.38	1.43	1.47
&Eu	1.02	1.41	0.68	1.14	0.94	1.22	0.94	1.14	1.36	1.18	1.06
Th/Yb	0.09	0.08	0.06	0.32	0.09	0.07	0.01	0.00	0.00	0.01	0.00
Nb/Yb	1.00	0.58	0.77	3.19	0.59	0.48	1.20	1.10	1.16	1.25	0.60
Ti/V	16.9	3.42	17.8	16.8	17.4	13.9	23.5	19.5	18.1	20.1	21.5
TiO ₂ /Yb	0.41	0.15	0.30	0.43	0.40	0.34	0.54	0.51	0.54	0.59	0.70
Ce/Y	0.18	0.41	0.15	0.41	0.19	0.15	0.34	0.32	0.32	0.32	0.17
Zr/Nb	20.1	12.7	15.8	7.85	34.7	41.2	15.1	19.8	19.4	16.7	21.7
DF1	-1.47	-1.87	-1.58	-0.79	-2.72	-2.88	3.19	4.69	4.22	4.03	5.64
DF2	2.5	1.28	3.1	1.75	1.85	2.12	5.27	6.61	6.17	5.95	8.17

Note: $DF1 = 0.3518 \times \log_e (La/Th) + 0.6013 \times \log_e (Sm/Th) - 1.3450 \times \log_e (Yb/Th) + 2.1056 \times \log_e (Nb/Th) - 5.4763$;

$DF2 = -0.3050 \times \log_e (La/Th) - 1.1801 \times \log_e (Sm/Th) + 1.6189 \times \log_e (Yb/Th) + 1.2260 \times \log_e (Nb/Th) - 0.9944$

Sample	17FJ-1-1	17FJ-1-2	17FJ-11-1	17FJ-12-1	17FJ-12-2	17FJ-12-3	17FJ-12-5	17FJ-12-6	17FJ-13-1	17FJ-13-2	17FJ-13-3	17FJ-13-4	17FJ-13-5	17FJ-15-3
Hornblende plagioclase quartz schist (fourteen samples)														
SiO ₂	76.4	65.0	69.3	71.6	69.4	70.0	67.1	70.1	66.3	69.4	67.0	67.8	65.2	66.3
TiO ₂	0.44	0.98	0.76	0.72	0.86	0.84	0.89	0.75	1.02	0.77	0.82	0.87	0.92	0.96
Al ₂ O ₃	10.7	14.5	13.4	12.7	13.1	12.9	14.7	13.1	14.4	13.3	14.2	14.1	15.0	14.3
Fe ₂ O ₃ ^T	3.60	7.20	6.57	5.27	6.63	6.54	6.34	5.58	6.99	6.18	6.19	6.10	6.94	7.12
MnO	0.03	0.17	0.13	0.12	0.16	0.15	0.15	0.13	0.18	0.14	0.14	0.16	0.16	0.15
MgO	0.59	1.45	0.95	1.14	1.45	1.48	1.47	1.16	1.63	1.33	1.21	1.43	1.29	1.64
CaO	1.10	6.04	2.69	4.06	2.73	3.11	5.22	5.38	4.83	3.62	5.67	3.70	6.43	2.80
Na ₂ O	4.61	3.64	4.33	3.68	4.33	4.05	4.18	3.36	4.33	4.25	3.83	4.63	3.50	4.59
K ₂ O	0.16	0.14	0.12	0.09	0.09	0.11	0.12	0.09	0.11	0.18	0.13	0.21	0.16	0.11
P ₂ O ₅	0.09	0.19	0.13	0.14	0.16	0.16	0.18	0.15	0.20	0.15	0.16	0.17	0.18	0.19
LOI	1.52	0.87	1.63	0.75	1.02	0.75	0.56	0.50	0.49	0.73	0.55	0.77	0.67	1.33
Total	99.20	100.1	100.0	100.3	99.89	100.1	100.9	100.3	100.5	100.1	99.88	100.0	100.4	99.46
Sc	4.2	19.8	17.6	10.2	13.0	13.7	15.5	16.2	17.9	11.6	16.0	13.4	17.8	15.1
V	53	131	60.5	92.1	116	117	111	96.6	125	119	121	107	130	121
Cr	3.81	1.26	5.17	6.29	0.79	0.21	0.68	0.83	0.87	0.88	0.22	0.55	0.52	0.76
Co	3.39	9.80	7.75	7.61	8.50	8.76	9.78	8.14	10.14	7.85	8.34	8.63	8.99	9.10
Ni	4.74	1.43	11.3	5.09	1.11	0.85	1.00	0.97	1.15	1.04	0.77	0.96	1.06	0.91
Ga	6.82	16.5	11.5	12.5	10.8	10.8	12.7	13.3	13.0	11.3	15.5	12.1	16.4	11.0
Rb	7.00	2.88	3.87	2.50	3.14	2.91	2.00	1.52	1.45	5.70	2.77	7.31	3.99	3.30
Sr	132	257	110	223	124	102	187	257	168	188	223	197	214	158
Y	3.58	11.0	5.73	8.64	11.5	8.30	14.0	12.0	12.1	8.30	15.6	9.20	13.8	9.58
Zr	73.3	50.4	98.1	32.3	41.9	29.3	43.3	37.2	37.8	39.4	42.1	43.0	39.2	43.1
Nb	3.59	7.15	5.54	5.65	6.30	5.80	6.51	5.74	7.13	5.99	6.30	6.62	6.95	6.86
Cs	0.36	0.20	0.20	0.22	0.20	0.27	0.15	0.13	0.09	0.41	0.22	0.39	0.29	0.24
Ba	17.3	26.3	33.0	30.4	30.5	31.1	32.9	27.2	36.0	32.4	28.6	34.2	30.0	35.2
La	1.36	3.90	2.23	3.34	3.63	2.90	3.97	3.78	4.47	3.85	4.23	4.31	4.03	4.37
Ce	3.69	11.5	6.25	10.6	10.8	8.80	12.8	11.7	12.5	10.5	12.6	11.6	12.2	11.6
Pr	0.54	1.45	0.89	1.25	1.44	1.12	1.72	1.54	1.68	1.35	1.71	1.55	1.63	1.54

Nd	2.83	7.23	4.73	6.00	7.22	5.59	8.83	7.77	8.10	6.24	8.72	7.23	8.17	7.14
Sm	0.75	2.06	1.31	1.58	2.10	1.63	2.64	2.27	2.20	1.53	2.56	1.85	2.43	1.82
Eu	0.72	1.34	1.09	1.03	0.99	0.94	1.20	1.06	1.27	1.15	1.51	1.17	1.40	0.99
Gd	0.86	2.39	1.44	1.76	2.48	1.93	3.14	2.66	2.74	1.71	3.12	2.04	2.85	2.06
Tb	0.13	0.37	0.21	0.27	0.39	0.29	0.48	0.41	0.39	0.26	0.47	0.31	0.43	0.31
Dy	0.72	2.15	1.23	1.58	2.35	1.71	2.87	2.44	2.32	1.52	2.82	1.79	2.61	1.85
Ho	0.14	0.41	0.23	0.30	0.46	0.34	0.55	0.48	0.46	0.30	0.55	0.35	0.50	0.36
Er	0.37	1.08	0.62	0.83	1.17	0.84	1.40	1.21	1.15	0.79	1.42	0.90	1.27	0.92
Tm	0.05	0.15	0.09	0.12	0.16	0.12	0.20	0.17	0.16	0.11	0.19	0.13	0.18	0.13
Yb	0.30	0.90	0.52	0.74	0.95	0.70	1.18	1.00	0.95	0.70	1.13	0.77	1.02	0.78
Lu	0.05	0.14	0.08	0.11	0.14	0.11	0.18	0.15	0.15	0.11	0.17	0.12	0.15	0.12
Hf	1.51	1.28	1.99	0.92	1.14	0.79	1.20	1.04	1.01	1.04	1.17	1.14	1.03	1.12
Ta	0.15	0.37	0.25	0.30	0.32	0.30	0.32	0.28	0.36	0.32	0.31	0.35	0.34	0.36
Pb	0.55	0.83	0.52	0.63	0.46	0.42	0.70	0.76	0.56	0.47	0.73	0.49	0.74	0.66
Th	0.05	0.19	0.05	0.45	0.29	0.18	0.21	0.26	0.23	0.22	0.25	0.26	0.21	0.21
U	0.04	0.07	0.03	0.13	0.10	0.07	0.08	0.10	0.08	0.09	0.09	0.09	0.08	0.09
Mg#	24.8	28.7	22.4	30.3	30.4	31.2	31.7	29.4	31.8	30.1	28.1	31.9	27.1	31.5
K ₂ O/Al ₂ O ₃	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
(La/Yb) _{CN}	3.28	3.12	3.05	3.22	2.73	2.98	2.41	2.71	3.37	3.93	2.69	4.00	2.82	4.01
10000*Ga/Al	1.2	2.15	1.62	1.86	1.56	1.58	1.64	1.92	1.7	1.6	2.06	1.62	2.06	1.45
ΣREE	12.5	35.1	20.9	29.5	34.2	27.0	41.2	36.6	38.6	30.1	41.2	34.2	38.9	34.0
δEu	2.76	1.86	2.44	1.90	1.34	1.65	1.29	1.33	1.60	2.20	1.65	1.87	1.64	1.58
Rb/Sr	0.05	0.01	0.04	0.01	0.03	0.03	0.01	0.01	0.01	0.03	0.01	0.04	0.02	0.02

Table S5. Whole rock Re-Os isotope compositions of the serpentinites from Shitun area, Cathaysia Block, South China.

Sample	Re(ppt)	2 σ	Os(ppt)	2 σ	$^{187}\text{Re}/^{188}\text{Os}$	2 σ	$^{187}\text{Os}/^{188}\text{Os}$	2 σ
14WY- 7- 1	690	15.0	1273	16.1	0.034	0.03	0.11672	0.00039
14WY- 7- 8	691	16.8	1238	5.60	0.062	0.03	0.11927	0.00021
14WY-19-2	4.23	6.84	1634	60.5	0.129	0.02	0.12202	0.00041
14WY-19-4	38.1	11.0	1947	26.2	0.061	0.01	0.12093	0.00020
14WY-19-5	11.4	7.17	5560	309	0.031	0.00	0.11952	0.00029

Table S6. Sr-Nd isotope compositions of the meta-ultramafic and meta-felsic rocks from Shitun area, Cathaysia Block, South China.

Sample	Rb(ppm)	Sr(ppm)	⁸⁷ Rb/ ⁸⁶ Sr	⁸⁷ Sr/ ⁸⁶ Sr	1σ	(⁸⁷ Sr/ ⁸⁶ Sr) _i	Sm(ppm)	Nd (ppm)	¹⁴⁷ Sm/ ¹⁴⁴ Nd	¹⁴³ Nd/ ¹⁴⁴ Nd	1σ	ε _{Nd} (t)
18FJ-4-1	0.19	19.3	0.028945	0.705536	0.000007	0.705321	1.08	2.62	0.250867	0.513000	0.000004	3.5
18FJ-4-2	0.08	0.80	0.282121	0.711665	0.000008	0.709574	0.44	1.16	0.231657	0.512824	0.000003	1.3
18FJ-4-3	0.16	4.87	0.093575	0.708474	0.000008	0.707780	2.11	4.58	0.280099	0.512993	0.000002	1.4
18FJ-4-5	0.43	53.5	0.023506	0.704780	0.000008	0.704606	1.24	3.18	0.236728	0.512932	0.000002	3.1
18FJ-4-6	0.28	42.5	0.019384	0.705442	0.000006	0.705298	1.21	2.75	0.267099	0.512991	0.000003	2.2
18FJ-5-2	3.31	158	0.060661	0.705666	0.000002	0.705216	1.13	2.24	0.307032	0.513076	0.000005	1.2
18FJ-9-1	0.81	80.2	0.029245	0.705645	0.000003	0.705428	3.67	10.2	0.218987	0.512849	0.000004	2.6
18FJ-9-3	13.1	474	0.080026	0.706494	0.000003	0.705901	2.94	8.24	0.217157	0.512859	0.000003	3.0
18FJ-9-4	15.6	469	0.096314	0.706310	0.000003	0.705596	2.85	7.82	0.221815	0.512843	0.000004	2.3
18FJ-9-6	0.75	105	0.020683	0.705788	0.000004	0.705634	2.96	8.09	0.222688	0.512838	0.000002	2.2
18FJ-11-1	10.0	118	0.245635	0.707334	0.000003	0.705514	2.91	6.72	0.263559	0.513076	0.000002	4.1
17FJ-1-1	7.00	132	0.153554	0.711242	0.000003	0.710103	0.75	2.83	0.111815	0.512702	0.000003	3.6
17FJ-1-2	2.88	257	0.032449	0.705837	0.000003	0.705596	2.06	7.23	0.161298	0.512708	0.000002	2.9
17FJ-11-1	3.87	110	0.101872	0.708694	0.000003	0.707939	1.31	4.73	0.173413	0.512713	0.000005	3.3
17FJ-12-3	2.91	102	0.082610	0.706563	0.000004	0.705951	1.63	5.59	0.168564	0.512716	0.000003	2.8
17FJ-12-5	2.00	187	0.030969	0.705932	0.000003	0.705703	2.64	8.83	0.177472	0.512733	0.000005	2.8
17FJ-13-3	2.77	223	0.035968	0.706202	0.000002	0.705936	2.56	8.72	0.181969	0.512730	0.000004	3.0
17FJ-13-4	7.31	197	0.107446	0.708350	0.000002	0.707553	1.85	7.23	0.178680	0.512670	0.000004	3.4
17FJ-15-3	3.30	158	0.060478	0.706423	0.000002	0.705975	1.82	7.14	0.207689	0.512655	0.000003	3.1