Wei Fang, Li-Qun Dai, Yong-Fei Zheng, Zi-Fu Zhao, Qi Chen, and Yao Zhou, 2020, Syn-exhumation magmatism in an active continental margin above a continental subduction zone: evidence from Late Triassic mafic igneous rocks in the southeastern North China Block: GSA Bulletin, <https://doi.org/10.1130/B35656.1>.

Supplemental Material

Table S1. Major and trace element compositions of mafic igneous rocks from the southeastern North China Block.

Table S2. Whole-rock Rb-Sr, Sm-Nd and Lu-Hf isotope compositions of mafic igneous rocks from the southeastern North China Block.

Table S3. LA-ICPMS zircon U-Pb isotope compositions of mafic igneous rocks from the southeastern North China Block.

Table S4. Zircon LA-MC-ICPMS Lu-Hf and SIMS O isotopic compositions of mafic igneous rocks from the southeastern North China Block.

Table S1. Major and trace element compositions of mafic igneous rocks from the southeastern North China Block

Sample type	Sub-alkaline series								Alkaline series				
Sample NO.	16DL07	16DL08	16DL10	16DL11	16DL13	16DL14	03JH024 ^a	03JH027 ^a	16DL06	16DL15	16DL16	03JH025 ^a	03JH026 ^a
<i>Major elements (wt. %)</i>													
SiO ₂	55.7	57.0	54.0	54.2	54.2	57.1	55.6	55.3	49.4	53.8	48.0	49.6	51.9
Al ₂ O ₃	14.1	14.0	15.4	14.0	14.6	13.6	13.7	14.8	15.2	18.2	17.5	14.8	15.0
Fe ₂ O ₃	7.49	7.57	8.50	7.46	7.60	8.26	7.90	7.63	8.50	7.21	9.48	9.54	8.38
MnO	0.12	0.11	0.12	0.12	0.11	0.12	0.11	0.11	0.16	0.12	0.15	0.16	0.13
MgO	7.51	7.71	7.02	8.56	7.85	6.67	8.87	7.38	5.85	2.95	4.95	6.47	5.82
CaO	6.26	6.32	8.14	7.81	7.09	6.55	6.07	6.60	8.21	4.60	7.91	7.92	7.60
Na ₂ O	4.11	4.19	3.65	3.43	3.32	3.58	3.18	3.19	3.35	4.53	3.39	2.85	3.48
K ₂ O	1.00	0.61	0.75	1.29	1.69	0.75	1.48	2.14	3.90	4.93	3.49	4.23	4.10
TiO ₂	0.75	0.74	0.87	0.63	0.69	0.85	0.66	0.69	1.32	1.02	1.75	1.49	1.31
P ₂ O ₅	0.16	0.15	0.14	0.16	0.19	0.19	0.15	0.19	1.23	0.97	1.13	1.34	1.14
Cr ₂ O ₃	0.06	0.06	0.04	0.07	0.06	0.06	-	-	0.02	-	0.01	-	-
BaO	0.09	0.08	0.07	0.07	0.09	0.03	-	-	0.51	0.44	0.48	-	-
SrO	0.07	0.07	0.07	0.07	0.07	0.07	-	-	0.29	0.31	0.26	-	-
LOI	2.34	1.85	1.90	2.31	2.16	1.72	1.94	1.82	1.66	1.60	1.62	1.22	0.82
Total	99.7	100.4	100.7	100.2	99.8	99.5	99.6	99.8	99.7	100.6	100.1	99.6	99.6
Mg#	66.5	66.8	62.0	69.4	67.2	61.5	69.0	65.7	57.7	44.8	50.8	57.3	57.9
CaO/Al ₂ O ₃	0.45	0.45	0.53	0.56	0.48	0.48	0.44	0.45	0.54	0.25	0.45	0.54	0.51
<i>Trace elements (ppm)</i>													
Li	10.4	8.9	9.0	10.4	9.0	9.0	17.0	13.0	22.6	19.9	20.8	31.0	24.0
Be	1.04	1.06	0.94	0.99	1.09	1.00	1.00	1.00	1.29	2.10	1.78	1.20	1.40
Sc	19.3	19.5	24.6	23.6	24.3	21.8	27.0	26.0	18.1	7.9	18.3	21.0	19.0
V	150	151	171	161	169	183	164	171	132	80	196	161	142
Cr	371	399	246	475	371	407	756	397	134	3.55	26	152	161
Co	32.2	31.2	32.3	37.3	32.9	28.0	36.0	31.0	27.8	17.1	28.3	31.0	25.0
Ni	137	135	82.1	172	123	135	171	110	66.3	11.7	33.0	74.0	65.0
Cu	45.8	47.4	40.1	47.3	59.6	42.0	-	-	35.4	15.2	36.7	-	-
Zn	74.2	73.7	79.7	67.5	66.2	90.7	-	-	85.0	87.0	84.0	-	-
Ga	18.0	17.4	19.1	17.5	17.7	18.9	17.2	18.8	19.0	22.7	20.5	19.9	20.4
Rb	19.9	14.9	20.4	29.0	39.7	16.0	39.5	55.2	87.2	90.4	66.4	120	125
Sr	564	611	577	621	616	642	488	767	2565	2665	2209	2405	2341
Y	15.8	15.5	17.3	14.4	15.3	19.6	17.3	17.1	27.2	22.8	28.0	33.4	33.6
Zr	101	98.3	87.6	87.8	93.7	126	103	108	84.8	170	166	199	302
Nb	5.04	5.03	4.70	4.71	5.57	7.28	5.60	6.00	21.3	28.4	26.4	26.1	30.8
Sn	0.89	0.85	0.97	0.81	0.87	0.93	-	-	1.17	0.86	1.48	-	-
Cs	0.30	0.22	0.22	0.30	0.38	0.21	0.50	0.60	1.19	1.18	1.18	1.40	1.70
Ba	779	611	573	572	771	230	777	996	4550	3865	4243	5027	4223
La	17.0	17.0	13.9	16.5	19.7	21.3	16.7	21.2	131	148	99.1	128	144
Ce	34.7	34.1	29.4	34.0	40.3	43.8	31.7	42.8	259	286	206	273	292
Pr	4.13	4.10	3.62	4.10	4.92	5.30	4.05	5.16	28.6	30.3	23.5	30.4	30.7
Nd	16.8	15.7	14.6	16.0	19.5	21.5	16.7	21.1	106	108	90.8	115	110
Sm	3.48	3.51	3.40	3.36	3.83	4.63	3.41	4.06	14.8	14.6	13.5	16.0	15.0
Eu	1.11	1.03	1.06	1.02	1.15	1.23	1.04	1.28	3.71	3.66	3.73	4.22	3.98
Gd	3.15	3.10	3.35	3.02	3.28	4.17	3.27	3.75	9.20	8.43	8.85	13.8	13.3
Tb	0.46	0.47	0.52	0.43	0.48	0.62	0.51	0.54	1.08	0.95	1.09	1.50	1.43
Dy	2.80	2.78	3.00	2.66	2.80	3.63	2.89	2.98	5.62	4.68	5.59	6.78	6.66
Ho	0.58	0.55	0.61	0.51	0.54	0.70	0.57	0.57	0.98	0.79	1.02	1.05	1.07
Er	1.60	1.55	1.74	1.46	1.54	1.93	1.44	1.44	2.55	2.10	2.62	2.68	2.74
Tm	0.22	0.23	0.24	0.20	0.21	0.27	0.22	0.21	0.33	0.28	0.36	0.32	0.36
Yb	1.45	1.38	1.51	1.34	1.39	1.77	1.46	1.48	2.03	1.65	2.23	2.16	2.32
Lu	0.22	0.21	0.23	0.20	0.21	0.26	0.24	0.24	0.29	0.25	0.32	0.35	0.36
Hf	2.78	2.68	2.45	2.36	2.56	3.47	2.50	2.80	2.18	3.56	3.94	3.50	5.20
Ta	0.30	0.30	0.28	0.26	0.28	0.41	0.30	0.30	0.82	1.23	1.34	0.90	1.20
Tl	0.15	0.10	0.12	0.20	0.24	0.09	-	-	0.68	0.59	0.49	-	-
Pb	8.40	10.5	11.9	11.7	12.9	12.4	8.0	14.0	14.8	23.6	21.6	16.0	20.0
Th	3.52	3.34	2.91	2.97	3.03	4.57	3.10	3.00	3.01	6.10	6.64	3.10	4.90
U	0.97	0.90	0.80	0.85	0.84	1.02	0.80	0.80	0.67	1.35	1.38	0.70	1.20
Fe/Mn	56.2	61.9	63.8	56.0	62.2	62.0	64.6	62.4	47.8	54.1	56.9	53.7	58.0
Zn/Fe*10 ⁴	14.2	13.9	13.4	12.9	12.4	15.7	-	-	14.3	17.2	12.7	-	-

Notes: LOI: loss on ignition; Mg#=atomic $[\text{Mg}^{2+}/(\text{Mg}^{2+}+\text{Fe}^{2+})]\times 100$; Superscript ^a represent data from Yang et al. (2007a).

Table S2. Whole-rock Rb-Sr, Sm-Nd and Lu-Hf isotope compositions of mafic igneous rocks from the southeastern North China Block

Sample types	Sample No.	Rb	Sr	$^{87}\text{Rb}/^{86}\text{Sr}$	$^{87}\text{Sr}/^{86}\text{Sr}(\pm 2\sigma)$	$(^{87}\text{Sr}/^{86}\text{Sr})_i$	Sm	Nd	$^{147}\text{Sm}/^{144}\text{Nd}$	$^{143}\text{Nd}/^{144}\text{Nd}(\pm 2\sigma)$	$\varepsilon_{\text{Nd}}(t)$	$T_{\text{DM2}}(\text{Ma})$	Lu	Hf	$^{176}\text{Lu}/^{177}\text{Hf}$	$^{176}\text{Hf}/^{177}\text{Hf}(\pm 2\sigma)$	$\varepsilon_{\text{Hf}}(t)$	$T_{\text{DM2}}(\text{Ma})$
Sub-alkaline series	16DL07	19.9	564	0.1023	0.707337 $\pm$ 10	0.707024	3.48	16.8	0.1248	0.512081 $\pm$ 6	-8.9	1991	0.22	2.78	0.011195	0.282541 $\pm$ 6	-5.1	1666
	16DL08	14.9	611	0.0706	0.707190 $\pm$ 9	0.706974	3.51	15.7	0.1356	0.512086 $\pm$ 6	-9.1	2028	0.21	2.68	0.011335	0.282544 $\pm$ 6	-5.0	1661
	16DL10	20.4	577	0.1021	0.708182 $\pm$ 16	0.707870	3.40	14.6	0.1401	0.512051 $\pm$ 5	-9.9	2103	0.23	2.45	0.013171	0.282508 $\pm$ 7	-6.5	1771
	16DL11	29.0	621	0.1352	0.706879 $\pm$ 20	0.706466	3.36	16.0	0.1270	0.512114 $\pm$ 8	-8.3	1948	0.20	2.36	0.012252	0.282536 $\pm$ 8	-5.4	1694
	16DL13	39.7	616	0.1862	0.706920 $\pm$ 10	0.706351	3.83	19.5	0.1184	0.512028 $\pm$ 5	-9.8	2047	0.21	2.56	0.011577	0.282520 $\pm$ 8	-5.8	1717
	16DL14	16.0	642	0.0723	0.707189 $\pm$ 16	0.706968	4.63	21.5	0.1302	0.512161 $\pm$ 6	-7.5	1888	0.26	3.47	0.010748	0.282550 $\pm$ 5	-4.7	1638
	03JH024 ^a	39.5	488	0.2198	0.707462 $\pm$ 15	0.706790	3.41	16.7	0.1237	0.512173 $\pm$ 12	-7.1	1840	0.24	2.50	0.013600	0.282409 $\pm$ 4	-10.1	1998
	03JH027 ^a	55.2	767	0.1942	0.706879 $\pm$ 13	0.706285	4.06	21.1	0.1151	0.512038 $\pm$ 13	-9.5	2016	0.24	2.80	0.012440	0.282522 $\pm$ 15	-5.9	1728
Alkaline series	16DL06	87.2	2565	0.0984	0.706450 $\pm$ 15	0.706149	14.8	106	0.0845	0.511771 $\pm$ 6	-13.8	2306	0.29	2.18	0.018682	0.282399 $\pm$ 8	-11.1	2104
	16DL15	90.4	2665	0.0982	0.706440 $\pm$ 12	0.706140	14.6	108	0.0818	0.511751 $\pm$ 6	-14.2	2325	0.25	3.56	0.009953	0.282411 $\pm$ 6	-9.5	1931
	16DL16	66.4	2209	0.0869	0.706012 $\pm$ 10	0.705746	13.5	90.8	0.0897	0.511824 $\pm$ 4	-12.9	2244	0.32	3.94	0.011530	0.282538 $\pm$ 8	-5.2	1677
	03JH025 ^a	120	2405	0.1247	0.706625 $\pm$ 14	0.706244	16.0	115	0.0847	0.511796 $\pm$ 12	-13.4	2267	0.35	3.50	0.013900	0.282386 $\pm$ 6	-10.9	2054
	03JH026 ^a	125	2341	0.1357	0.706544 $\pm$ 11	0.706129	15.0	110	0.0840	0.511804 $\pm$ 11	-13.2	2251	0.36	5.20	0.009740	0.282355 $\pm$ 4	-11.4	2052

Notes: The initial isotopic ratios are calculated at $t = 218$ Ma based on whole-rock Rb, Sr, Sm, Nd, Lu and Hf contents measured by ICP-MS; The Chondrite uniform reservoir values(CHUR): $^{147}\text{Sm}/^{144}\text{Nd} = 0.1967$, $^{143}\text{Nd}/^{144}\text{Nd} = 0.512638$, $^{176}\text{Lu}/^{177}\text{Hf} = 0.0332$, $^{176}\text{Hf}/^{177}\text{Hf} = 0.282772$; Superscript ^a represent data from Yang et al. (2007a).

Table S3. LA-ICPMS zircon U-Pb isotope compositions of mafic igneous rocks from the southeastern North China Block

Spot	Content (ppm)			Atomic ratios						Apparent ages (Ma)				Concordance	
	U	Th	Pb	Th/U	²⁰⁷ Pb/ ²⁰⁶ Pb	1σ	²⁰⁷ Pb/ ²³⁵ U	1σ	²⁰⁶ Pb/ ²³⁸ U	1σ	²⁰⁷ Pb/ ²³⁵ U	1σ	²⁰⁶ Pb/ ²³⁸ U	1σ	
<i>16DL07 (Sub-alkaline series)</i>															
1	231	215	11.0	0.93	0.0516	0.0040	0.2457	0.0175	0.0342	0.0011	223	14	217	7	97%
2	221	126	9.81	0.57	0.0537	0.0058	0.2502	0.0244	0.0344	0.0013	227	20	218	8	96%
3	365	286	16.6	0.78	0.0594	0.0041	0.2832	0.0197	0.0341	0.0011	253	16	216	7	84%
4	116	53.8	5.09	0.47	0.0500	0.0052	0.2496	0.0213	0.0352	0.0013	226	17	223	8	98%
5	309	313	15.0	1.01	0.0622	0.0050	0.2852	0.0212	0.0336	0.0011	255	17	213	7	82%
6	388	429	19.4	1.11	0.0642	0.0068	0.2929	0.0279	0.0340	0.0012	261	22	215	8	80%
7	967	1310	51.5	1.36	0.0614	0.0040	0.2899	0.0176	0.0343	0.0010	258	14	217	6	82%
8	167	32.4	6.29	0.19	0.0529	0.0050	0.2330	0.0200	0.0327	0.0011	213	16	208	7	97%
9	303	229	13.9	0.76	0.0578	0.0041	0.2809	0.0203	0.0350	0.0011	251	16	222	7	87%
10	899	456	39.2	0.51	0.0517	0.0027	0.2539	0.0133	0.0355	0.0010	230	11	225	6	97%
11	328	222	15.1	0.68	0.0544	0.0045	0.2639	0.0210	0.0357	0.0012	238	17	226	7	95%
12	63.0	40.0	2.74	0.63	0.0595	0.0088	0.2465	0.0309	0.0344	0.0016	224	25	218	10	97%
13	71.7	49.0	3.07	0.68	0.0589	0.0081	0.2480	0.0257	0.0333	0.0015	225	21	211	9	93%
14	105	88.1	4.80	0.84	0.0516	0.0067	0.2452	0.0266	0.0348	0.0016	223	22	220	10	98%
15	55.5	26.8	2.39	0.48	0.0563	0.0103	0.2532	0.0358	0.0352	0.0025	229	29	223	15	97%
16	157	104	7.13	0.66	0.0501	0.0052	0.2387	0.0218	0.0349	0.0012	217	18	221	7	98%
17	710	509	31.8	0.72	0.0508	0.0029	0.2412	0.0141	0.0342	0.0010	219	12	217	6	98%
18	258	224	12.0	0.87	0.0524	0.0041	0.2411	0.0164	0.0346	0.0012	219	13	219	8	99%
19	271	224	12.7	0.83	0.0505	0.0041	0.2444	0.0183	0.0351	0.0012	222	15	223	7	99%
20	333	249	14.6	0.75	0.0606	0.0038	0.2837	0.0181	0.0336	0.0011	254	14	213	7	82%
21	116	56.2	4.75	0.48	0.0611	0.0058	0.2845	0.0243	0.0343	0.0012	254	19	217	8	84%
22	171	113	7.40	0.66	0.0503	0.0042	0.2438	0.0197	0.0351	0.0011	222	16	222	7	99%
23	331	163	13.3	0.49	0.0566	0.0044	0.2679	0.0218	0.0344	0.0011	241	17	218	7	89%
24	747	360	30.6	0.48	0.0530	0.0028	0.2504	0.0126	0.0344	0.0010	227	10	218	6	96%
<i>16DL15 (Alkaline series)</i>															
1	68.0	32.9	2.76	0.48	0.0547	0.0070	0.2623	0.0279	0.0347	0.0013	237	22	220	8	92%
2	194	156	8.29	0.81	0.0570	0.0043	0.2614	0.0177	0.0339	0.0011	236	14	215	7	90%
3	137	92.7	5.73	0.68	0.0464	0.0037	0.2166	0.0162	0.0342	0.0011	199	14	217	7	91%
4	88.6	54.9	3.67	0.62	0.0515	0.0043	0.2396	0.0180	0.0341	0.0011	218	15	216	7	99%
5	154	115	6.86	0.75	0.0571	0.0051	0.2766	0.0230	0.0355	0.0012	248	18	225	7	90%
6	254	207	11.0	0.82	0.0528	0.0041	0.2513	0.0191	0.0349	0.0012	228	15	221	7	97%
7	587	1009	31.0	1.72	0.0645	0.0025	0.2959	0.0116	0.0332	0.0009	263	9	210	6	77%
8	301	249	13.5	0.83	0.0560	0.0033	0.2644	0.0160	0.0340	0.0009	238	13	215	6	89%
9	354	294	15.7	0.83	0.0589	0.0027	0.2737	0.0124	0.0337	0.0010	246	10	214	6	86%
10	209	168	9.70	0.80	0.0601	0.0036	0.2754	0.0158	0.0337	0.0010	247	13	214	6	85%
11	113	62.1	4.98	0.55	0.0575	0.0041	0.2719	0.0175	0.0349	0.0011	244	14	221	7	90%
12	147	108	6.60	0.74	0.0572	0.0041	0.2702	0.0177	0.0336	0.0010	243	14	213	6	86%
13	91.7	43.1	3.82	0.47	0.0559	0.0044	0.2617	0.0181	0.0344	0.0010	236	15	218	7	92%
14	328	226	14.2	0.69	0.0521	0.0034	0.2476	0.0156	0.0344	0.0010	225	13	218	6	96%
15	530	978	29.4	1.84	0.0666	0.0030	0.3084	0.0132	0.0334	0.0010	273	10	212	6	74%
16	521	368	22.5	0.71	0.0527	0.0024	0.2534	0.0117	0.0346	0.0010	229	9	219	6	95%
17	593	957	31.7	1.62	0.0594	0.0028	0.2822	0.0125	0.0343	0.0010	252	10	217	6	85%
18	251	175	11.3	0.70	0.0507	0.0027	0.2401	0.0129	0.0345	0.0010	218	11	218	6	99%
19	145	78.1	5.92	0.54	0.0576	0.0035	0.2655	0.0154	0.0338	0.0011	239	12	214	7	89%
20	124	123	6.11	0.99	0.0583	0.0045	0.2725	0.0197	0.0344	0.0010	245	16	218	6	88%
21	78.5	38.4	3.26	0.49	0.0526	0.0052	0.2470	0.0238	0.0343	0.0012	224	19	217	7	96%
22	66.5	33.2	2.88	0.50	0.0534	0.0059	0.2529	0.0253	0.0344	0.0011	229	21	218	7	95%
23	352	475	17.4	1.35	0.0614	0.0027	0.2790	0.0118	0.0332	0.0010	250	9	211	6	82%
24	279	206	12.5	0.74	0.0568	0.0032	0.2684	0.0145	0.0343	0.0010	241	12	218	6	89%
25	78.3	39.4	3.33	0.50	0.0554	0.0050	0.2588	0.0196	0.0348	0.0012	234	16	220	7	94%

Table S4. Zircon LA-MC-ICPMS Lu-Hf and SIMS O isotopic compositions of mafic igneous rocks from the southeastern North China Block

Spot	$^{176}\text{Yb}/^{177}\text{Hf}$	$^{176}\text{Lu}/^{177}\text{Hf}$	$^{176}\text{Hf}/^{177}\text{Hf}$	1 σ	Age (Ma)	$\varepsilon_{\text{Hf}}(t)$	2 σ	T_{DM2} (Ma)	$\delta^{18}\text{O}(\text{‰})$	2 σ
<i>16DL07 (Sub-alkaline series)</i>										
1	0.014559	0.000613	0.282165	0.000009	217	-16.9	0.6	2311	6.2	0.2
2	0.019459	0.000722	0.282410	0.000009	218	-8.2	0.6	1766	6.5	0.2
3	0.023565	0.000888	0.282348	0.000010	216	-10.4	0.7	1906	6.5	0.2
4	0.020197	0.000766	0.282420	0.000010	223	-7.9	0.7	1745	6.7	0.2
5	0.032658	0.001266	0.282321	0.000010	213	-11.4	0.7	1969	6.2	0.2
6	0.026083	0.001027	0.282374	0.000010	215	-9.5	0.7	1849	6.2	0.3
7	0.010274	0.000432	0.282804	0.000010	217	5.8	0.7	879	6.1	0.2
8	0.024607	0.000932	0.282390	0.000010	208	-8.9	0.7	1813	6.2	0.1
9	0.031909	0.001206	0.282206	0.000011	222	-15.5	0.7	2223	6.1	0.3
10	0.033349	0.001274	0.282375	0.000013	225	-9.5	0.9	1849	6.2	0.2
11	0.023664	0.000923	0.282481	0.000010	226	-5.7	0.7	1608	6.4	0.3
12	0.013950	0.000601	0.282776	0.000012	218	4.8	0.9	943	7.2	0.2
13	0.009865	0.000405	0.282400	0.000011	211	-8.5	0.8	1784	6.2	0.3
14	0.036688	0.001368	0.282408	0.000012	220	-8.3	0.8	1775	7.2	0.2
15	0.050582	0.001882	0.282386	0.000014	223	-9.2	1.0	1829	6.5	0.2
16	0.043181	0.001556	0.282376	0.000009	221	-9.5	0.6	1848	7.0	0.3
17	0.013612	0.000558	0.282366	0.000007	217	-9.7	0.5	1863	6.4	0.2
18	0.005748	0.000242	0.282390	0.000008	219	-8.8	0.6	1806	6.1	0.2
19	0.024266	0.000967	0.282439	0.000011	223	-7.2	0.8	1703	6.5	0.2
20	0.027968	0.001057	0.282771	0.000011	213	4.5	0.8	959	6.3	0.3
21	0.006786	0.000280	0.282383	0.000009	217	-9.1	0.7	1823	6.1	0.3
22	0.031552	0.001181	0.282326	0.000011	222	-11.2	0.8	1957	6.2	0.2
23	0.008626	0.000370	0.282468	0.000012	218	-6.1	0.9	1634	6.4	0.2
24	0.016684	0.000629	0.282408	0.000007	218	-8.3	0.5	1770	6.5	0.2
<i>16DL15 (Alkaline series)</i>										
1	0.011629	0.000412	0.282406	0.000010	220	-8.3	0.7	1772	6.8	0.2
2	0.085345	0.002858	0.282308	0.000009	215	-12.1	0.6	2011	6.6	0.1
3	0.009167	0.000331	0.282406	0.000008	217	-8.3	0.6	1771	6.6	0.2
4	0.029818	0.001046	0.282374	0.000010	216	-9.5	0.7	1850	6.5	0.2
5	0.006547	0.000242	0.282404	0.000009	225	-8.3	0.6	1774	6.3	0.2
6	0.068412	0.002298	0.282309	0.000010	221	-12.0	0.7	2004	6.5	0.2
7	0.005414	0.000200	0.282407	0.000009	210	-8.2	0.6	1768	6.5	0.2
8	0.010308	0.000377	0.282423	0.000009	215	-7.7	0.6	1735	6.6	0.2
9	0.015025	0.000526	0.282398	0.000008	214	-8.6	0.6	1790	6.2	0.2
10	0.004658	0.000175	0.282427	0.000007	214	-7.5	0.5	1724	6.4	0.3
11	0.016234	0.000589	0.282379	0.000009	221	-9.3	0.6	1834	6.2	0.2
12	0.023350	0.000819	0.282356	0.000008	213	-10.1	0.6	1887	6.4	0.3
13	0.014719	0.000521	0.282373	0.000008	218	-9.5	0.5	1847	6.1	0.2
14	0.025843	0.000892	0.282379	0.000008	218	-9.3	0.5	1837	6.3	0.2
15	0.030182	0.001104	0.282383	0.000010	212	-9.2	0.7	1828	6.5	0.2
16	0.030490	0.000974	0.282374	0.000008	219	-9.5	0.6	1849	6.4	0.2
17	0.006533	0.000242	0.282409	0.000010	217	-8.1	0.7	1763	6.4	0.2
18	0.040848	0.001402	0.282376	0.000010	218	-9.5	0.7	1848	6.3	0.2
19	0.059992	0.001994	0.282388	0.000010	214	-9.2	0.7	1827	6.5	0.2
20	0.011664	0.000424	0.282419	0.000009	218	-7.8	0.6	1743	6.1	0.1
21	0.012497	0.000454	0.282387	0.000010	217	-9.0	0.7	1814	6.5	0.2
22	0.029208	0.000999	0.282395	0.000010	218	-8.8	0.7	1802	6.5	0.1
23	0.066439	0.002201	0.282363	0.000011	211	-10.1	0.8	1882	-	-
24	0.006180	0.000230	0.282379	0.000009	218	-9.2	0.6	1830	-	-
25	0.030390	0.001067	0.282350	0.000008	220	-10.4	0.6	1902	-	-

Notes: $\varepsilon_{\text{Hf}}(t)$ and T_{DM2} were calculated by the formula:

$$\varepsilon_{\text{Hf}}(t) = \{[(^{176}\text{Hf}/^{177}\text{Hf})_{\text{S}} - (^{176}\text{Lu}/^{177}\text{Hf})_{\text{S}} \times (e^{\lambda t} - 1)] / [(^{176}\text{Hf}/^{177}\text{Hf})_{\text{CHUR}} - (^{176}\text{Lu}/^{177}\text{Hf})_{\text{CHUR}} \times (e^{\lambda t} - 1)] - 1\} \times 10000,$$

$$T_{\text{DM1}} = 1/\lambda \times \{1 + [(^{176}\text{Hf}/^{177}\text{Hf})_{\text{S}} - (^{176}\text{Hf}/^{177}\text{Hf})_{\text{DM}}] / [(^{176}\text{Lu}/^{177}\text{Hf})_{\text{S}} - (^{176}\text{Lu}/^{177}\text{Hf})_{\text{DM}}]\},$$

$$T_{\text{DM2}} = T_{\text{DM1}} - (T_{\text{DM1}} - t)((f_{\text{CC}} - f_{\text{S}})/(f_{\text{CC}} - f_{\text{DM}})), f_{\text{Lu}/\text{Hf}} = (^{176}\text{Lu}/^{177}\text{Hf})_{\text{S}} / (^{176}\text{Lu}/^{177}\text{Hf})_{\text{CHUR}} - 1.$$

where $(^{176}\text{Lu}/^{177}\text{Hf})_{\text{CHUR}} = 0.0332$, $(^{176}\text{Hf}/^{177}\text{Hf})_{\text{CHUR}} = 0.282772$; $(^{176}\text{Lu}/^{177}\text{Hf})_{\text{DM}} = 0.0384$, $(^{176}\text{Hf}/^{177}\text{Hf})_{\text{DM}} = 0.28325$; $(^{176}\text{Lu}/^{177}\text{Hf})_{\text{CC}} = 0.015$; $\lambda = 1.865 \times 10^{-11} \text{ year}^{-1}$.

Abbreviations: S, sample; CHUR, chondritic reservoir; DM, depleted mantle; CC, average continental crust.