



Corrigendum to "Contribution of carbonatite and recycled oceanic crust to petit-spot lavas on the western Pacific Plate" published in Solid Earth, 15, 167–196, 2024

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In the paper "Contribution of carbonatite and recycled oceanic crust to petit-spot lavas on the western Pacific Plate" by Mikuni et al. (2024), an error occurred in the abstract, in the second paragraph of Sect. 6.3, and in the Conclusion in terms of the mass-balance-based melting model description. The mistake was inserted during the writing of the paper before it was submitted for publication. The description of "... 10% carbonatite flux (influx) to a given mass of the source ..." is thus corrected to "... 10% carbonatite flux (influx) relative to the mass of the partial melt produced after the system has opened to fluxing ...".

Accordingly, the following errors in Figs. 11 and S9 have now been corrected as follows: the description of "10 mass%/source" is corrected to "10 mass%/partial melt", "100 mass%/source" is corrected to "100 mass%/partial melt", and "3 mass%/source" is corrected to "3 mass%/partial melt" in the inset in each panel.



Figure 11. Geochemical modeling for the PM-normalized trace element pattern. The calculated hypothetical melts are a production of carbonatite influx melting of garnet lherzolite with or without 5% crustal component. Detailed information of the parameters is described in Sect. 6.3 and Table S6. *F* is the degree of melting (%). The trace element composition of the western Pacific petit-spot basalts from the 6K#1522 dive is shown as black lines for comparison. The PM composition of lherzolite and the N-MORB composition of the recycled crust were based on a study by Sun and McDonough (1989). The influx carbonatite is the average carbonatite from a study by Bizimis et al. (2003). The parameters used in the open-system melting models were as follows: a_c is a critical melt fraction, a_f is a final trapped melt fraction, β is a melt influx rate, and γ is a melt separation rate. Model results are compared by varying each parameter, i.e., garnet modal ratio and presence of crustal material (**a-d**), melt separation rate (**d**, **e**), carbonatite influx rate (**d**, **f**), and critical melt fraction (**d**, **g**). Each figure is expressed based on the difference from the condition in panel (**d**).

In addition to the correction above, further corrections were made in March 2025.

Errors occurred in terms of values of U (uranium) concentration in Table 3. The incorrect U concentrations ($\mu g g^{-1}$) for 1466R7-003 whole rock, 1522R01 whole rock, 1542R03 whole rock, and 1544R04 whole rock were presented in Table 3 as 7.70, 6.40, 2.80, and $3.00 \mu g g^{-1}$, respectively. These U concentrations are corrected to $1.40 \mu g g^{-1}$ for 1466R7-003 whole rock, $1.40 \mu g g^{-1}$ for 1522R01 whole rock, 0.60 $\mu g g^{-1}$ for 1542R03 whole rock, and 0.70 $\mu g g^{-1}$ for 1544R04 whole rock. Table 3 below and the Supplement .xls file have now been corrected.

U "-" not detected. * A1	다	Cruise Sample name Sample type Method	높 드 편 든 것 큰 료 유 수 白 정 트 킹 정 늄 양 트 륨 양 와 서 < 장 읍 양	(µgg ⁻¹) Li B Sc Cr	Cruise Sample name Sample type Method
1.57 Il.57	8.53 9.77 9.77 9.77 9.77 9.77 9.77 9.77 9.7	YK18-08 6K#1522R16 Glass LA-ICP-MS	297 475,2 976 21.8 56.4 613 613 614 106 613 106 613 106 412 56 412 56 412 56 412 106 613 7.08 7.08 7.08 7.08 7.08 0.19 1.43 0.19 0.19 5.33 3.54	7.60 2.92 14.9 159	YK 16-01 6K#1466R3-001 Glass LA-ICP-MS
1.58 pratories Ltd. (Actlabs).	8.42 2.05 2.05 2.05 2.05 2.05 2.05 2.05 2.0	YK 18-08 6K#1522R 17 Glass LA-ICP-MS	229 4717 262 262 262 262 262 262 265 265 265 265	7.3 3.1 15. 37	YK 16-0 6K#1466R3-00- Glas LA-ICP-MS
0.62	5 54 1.80 1.22 1.22 1.22 1.22 1.22 2.25 2.25 2.25	YK19-05S 6K#1542R03 Glass LA-ICP-MS			1 YK 16 4 6K#1466R7- 8 Whole r
0.60	24.0 22.2 330 490 14.0 14.0 2.12 2.13 2.13 2.14 2.14 2.14 2.14 2.14 2.14 2.14 2.14	YK19-05S 6K#1542R03 Whole rock *	- 180 -	200	-01 Y 001 6K#1466 * Wh
0.63	$\begin{array}{c} 5.52\\ 1.88\\ 1.88\\ 1.88\\ 2.52\\ 1.45\\ 2.54\\$	YK19-05S 6K#1542R05 Glass LA-ICP-MS	57.0 32.0 307 58.0 64.0 64.0 64.0 80.8 10.8 117.6 2.3.8 117.6 2.3.8 117.6 2.3.8 117.6 2.3.8 117.6 2.3.8 117.6 2.3.0 2.5.3 117.6 2.5.5 117.6 2.5.5 117.	25.0 324	01 rock 01 rock *
0.66	600 1189 22.7 22.7 22.5 17.4 17.4 17.4 25.1 13.4 25.1 13.4 25.1 13.4 25.1 13.4 25.1 13.4 25.1 25.2 25.2 25.2 25.2 25.3 25.4 25.4 25.4 25.4 25.4 25.4 25.4 25.4	YK19-05S 6K#1542R06 Glass LA-ICP-MS	32.8 34.1 1385 233.1 1385 233.1 1385 0.3 577 0.3 587 0.3 577 110 13.4 595 577 112 595 13.4 595 12.8 512 13.4 595 12.8 12.8 12.8 12.8 12.8 12.8 12.8 5.7 12.8 12.8 12.8 12.8 12.8 12.8 12.8 12.8	7.39 3.05 15.7 167	YK18-08 1521R04 Glass ICP-MS L
0.66	6.19 1.80 2037 1.40 1.40 1.40 1.40 2.51 2.23 1.40 2.51 2.23 3.17 7.42 7.42 7.42 7.42 7.42 7.42 7.42 7.4	YK19-05S 6K#1542R09 Glass LA-ICP-MS	31.2 33.4 1361 1361 1361 1362 2362 2756 2756 13.0 140.8 140.	7.00 3.48 15.4 157	YK18-08 (#1521R05 6 Glass A-ICP-MS
0.71	222 222 222 222 222 222 222 222 222 22	YK 19-055 6K#1544R0- Glass LA-ICP-MS	46.2 24.6 848 848 848 849 49.5 49.5 49.5 49.5 49.5 49.5 49.5 49	8.10 2.38 20.1 204 215	YK 18-08 1K#1522R01 Glass LA-ICP-MS
0.0	30 1-1	G YK19-05 GK#1544R0 Whole roo	490 280 827 827 163 250 163 52.0 52.0 52.0 52.0 52.0 52.0 52.0 52.0	21.0 234	YK18-08 6K#1522R01 Whole rock *
0		8S YK19-0 04 6K#1544F 8k Gi * LA-ICP-:	26,8 26,8 26,9 26,9 26,9 16,8 10,1 10,1 11,3 2,5 10,8 1,1,3 2,1,3 1,2,4 1,2,4 1,2,4 1,2,4 1,2,4 1,2,4 1,2,4 1,2,4 1,2,4 1,2,4 1,2,4 1,2,4 1,4,4,4 1,4,4,4 1,4,4,4,4	7.69 2.34 20.6 208 218	YK 18-08 6K#1522R02 Glass LA-ICP-MS
80.	220 228 228 228 228 228 227 228 227 228 227 227	15S YK19 05 6K#1544 ass C MS LA-ICP	46.1 26.8 943 177.6 177.	7.83 2.78 21.2 207 213	YK18-08 6K#1522R05 Glass LA-ICP-MS
0.65	6.16 2.14 2.14 1911 16.4 16.4 16.4 16.4 16.4 16.4 16.4 16	-05S IRO6 Ilass -MS	26,6 901 26,7 901 26,7 171 171 171 171 171 171 171 171 171 1	7.71 2.69 21.1 207 222	YK 18-08 6K#1522R12 Glass LA-ICP-MS
			443 280 930 1710 1710 1710 1857 1913 101 115 115 115 115 115 115 115 115 110 110	8.06 2.83 21.5 217	YK18-08 6K#1522R13 Glass LA-ICP-MS

Table 3. Trace element compositions of western Pacific petit-spot basalts.