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Erratum to Gibson (2017) On the nature and origin of garnet in highly-refractory Archean lithospheric mantle: constraints from garnet exsolved in Kaapvaal craton orthopyroxenes (*Mineralogical Magazine*, **81**, 781–809).

In Gibson (2017) a number of reconstructed analyses have been mis-calculated affecting Table 4, Fig. 7 and some mentions in the text.

Page 781 – There is also a mistake in the Abstract. In the final sentence the word "stability" should be replaced by "instability". The correct version is: "Such a process would considerably increase the density and instability of the continental lithosphere."

Page 792 – A corrected Fig. 7 is now:

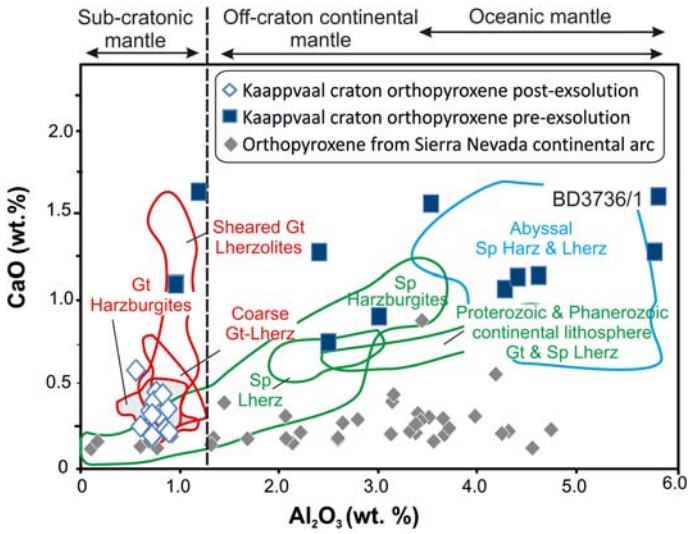

FIG. 7.

Page 797 – Table 4 with the last six columns corrected is shown overleaf.

Page 793 – under the heading "Reconstructed primary orthopyroxene compositions" the text "Mg# (82 to 93), Al_2O_3 (1.0 to 5.8 wt.%) and CaO contents (0.9 to 1.7 wt.%)" should be replaced with "Mg# (82 to 93), Al_2O_3 (1.0 to 5.8 wt.%) and CaO contents (0.9 to 1.7 wt.%)" and "Table 1" with "Table 2" to give: "The

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TABLE 4. Calculated composition of orthopyroxene megacryst prior to exsolution.

Garnet and clinopyroxene microstructures	BD1940 Inclined lamellae	BD1942 Inclined lamellae	BD1945 Necklace	BD1946 Lamellae/ necklace	BD1951 Inclined lamellae	BD1954 Necklace	BD1959 Blebs	BD2015/2a Inclined lamellae	BD2015/4 Lamellae/ necklace	BD2015/5 Necklace	BD3736/1 Lamellae/ necklace
SiO_2	55.45	54.69	56.98	55.48	55.35	56.98	57.40	55.50	54.75	56.45	54.39
TiO_2	0.03	0.01	0.01	0.05	0.01	0.03	0.08	0.14	0.05	0.02	0.01
Al_2O_3	4.27	5.78	2.49	4.61	4.40	0.97	1.21	2.41	3.55	3.02	5.82
FeO	4.48	4.38	4.65	4.73	4.77	5.55	5.50	9.48	11.07	4.77	5.30
MnO	0.12	0.12	0.11	0.12	0.13	0.13	0.16	0.16	0.17	0.09	0.13
MgO	33.47	32.84	34.39	33.24	32.95	33.95	33.42	30.42	29.29	33.75	31.83
CaO	1.08	1.30	0.76	1.16	1.15	1.09	1.65	1.29	1.58	0.91	1.63
Na_2O	0.09	0.12	0.08	0.11	0.12	0.18	0.25	0.12	0.10	0.08	0.09
Total	98.99	99.24	99.47	99.50	98.88	98.88	99.67	99.52	100.56	99.09	99.20
Mg#	93.01	93.04	92.95	92.61	92.49	91.80	91.55	85.11	82.50	92.65	91.45
T_F(°C)	870	875	880	940	904	980	942	1112	797	741	713
P_F (kbar)	35.55	31.94	37.44	34.39	36.69	39.75	38.65	52.82	30.85	27.49	26.58
$T_{solidus}$ at P_F	1529	1493	1547	1517	1540	1568	1558	1680	1482	1447	1438
ΔT (°C)	659	618	667	577	636	588	616	568	685	706	725

T_F(°C) is the final equilibration temperature and, for internal consistency, was calculated using the TCa-in-opx thermometer of Nimis and Grutter (2009).
P_F (kbar) is the final equilibration pressure.
$T_{\text{Anhydrous peridotite solidus}} = -1.092(P-10)^2 + 32.39(P-10) + 1935$, where P is in GPa and T in °C (Hirschmann *et al*., 2000).
ΔT (°C) is the temperature difference between the solidus and P_F.

pre-exsolution megacryst compositions all have the correct stoichiometry for orthopyroxene but they are highly variable in terms of Mg# (82 to 93), Al_2O_3 (1.0 to 5.8 wt.%) and CaO contents (0.9 to 1.7 wt.%). It is noteworthy that the Mg# of both the reconstructed pre-exsolution orthopyroxene (Table 4) and post-exsolution orthopyroxene megacrysts (Table 2) are similar and do not appear to have changed during exsolution. This is consistent with the findings of von Seckendorff and O'Neill (1993) which showed that the Fe/Mg ratio in orthopyroxene is controlled by bulk-rock composition and relatively insensitive to changes in temperature and pressure. In contrast to Mg#, the contents of both CaO and Al_2O_3 are noticeably greater (Fig. 7) and the SiO_2 content is lower in the pre-exsolution orthopyroxene."

Page 801 – the text "they are similar" should be replaced by "some are similar" and "Mg# (91–94) with Mg# (91–93)" to give: "Exceptions are the recalculated, pre-exsolution compositions of orthopyroxene megacrysts from Frank Smith mine which have high CaO for a given Al_2O_3 content; in this respect some are similar to orthopyroxenes found in metasomatized and sheared, high-temperature garnet peridotites (lherzolites, Fig. 7). The high Mg# (91–93) estimated for the preexsolution …."

Page 802 – the text "Mg# = 92.6" should be replaced by "Mg# = 92.4" to give: "The higher Mg# of the Kaapvaal orthopyroxenes (mean Mg# = 92.4, excl. Frank Smith mine) …."

The above does not alter any of the other findings presented in the paper, apologies for any inconvenience this error has caused.

Sally Gibson