**ERRATUM**

# Erratum to: Crystal growth during dike injection of MOR basaltic melts: evidence from preservation of local Sr disequilibria in plagioclase

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In the original paper, repeat analyses of gem labradorite AMNH 95557 provided the basis for assessment of relative uncertainties for individual elements and these were cited as 1.5% for $X_{An}$, 1.2% for Sr and 2.6% for Ba ($1\sigma$, $n = 16$). Unfortunately, the beam conditions used during the ablation of this standard were not identical to those used during sample analysis. We have recently reassessed the analytical uncertainties, employing the same analytical conditions as for our sample runs and using a homogeneous growth zone of one of the crystal samples as a working standard. We found that the relative uncertainties were in fact 0.5% for $X_{An}$, 1.9% for Sr and 15% for Ba ($1\sigma$, $n = 30$). Thus, analytical uncertainties stated in the original paper were overestimated for $X_{An}$, underestimated for Sr and significantly underestimated for Ba.

As a result, the precision on Ba is in fact often too low to resolve potential local Ba disequilibria. Many crystals are within error of complete chemical equilibrium for Ba. The conclusions of our study, however, were based on the observed local Sr disequilibria. Using the revised uncertainties in our calculations, we find that two of the 23 crystals studied (JdF-2794-2R-4 and Gakkel D27-16-O) are in fact within error of complete chemical equilibrium for Sr. Further, three other crystals (JdF-2794-2R-1, JdF-2794-2R-7 and Gorda W9604-C3-3) have growth zones of slightly more than 200 μm in width that are within error of local Sr equilibrium, but do preserve local Sr disequilibria. In the other crystals, the width of zones within local Sr equilibrium rarely exceeds 100 μm, as stated in our original contribution.

Below, we provide the corrected version of Table 2, which summarizes our results. The great majority of crystals preserves local Sr disequilibria and displays only narrow zones in local Sr equilibrium. Equilibration times remain of the order of months to a few years, and minimum crystal growth rates remain of the order of $10^{-9}$–$10^{-11}$ cm s$^{-1}$. The original conclusions of our paper with regard to crystal residence times, growth rates and processes, and the typical size of melt lenses within the gabbroic rocks in oceanic layer 3, thus remain valid.

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**Table 2** Determining minimum growth rates for all studied crystals

| Crystal | $X_{An}$ range | Min. $T$ (°C)[a] | $Đ_{Sr}$ (cf. Fig. 6) ($10^{-17}$ m$^2$ s$^{-1}$) | Zone width $2b$ (µm) | Equil. time $b^2/Đ_{Sr}$ (years)[b] | Distance to rim (µm) | Minimum growth rate ($10^{-10}$ cm s$^{-1}$)[c] |
|---|---|---|---|---|---|---|---|
| JdF 2792-4R-1 | 0.64–0.72 | 1,080 | ∼1 | 17 | 0.2 | 117 | 16.2 |
| JdF 2792-4R-2 | 0.67–0.79 | 1,080 | ∼1 | 94 | 7.0 | 79 | 0.4 |
| JdF 2792-4R-4 | 0.62–0.72 | 1,080 | ∼1 | 132 | 14 | 91 | 0.2 |
| JdF 2792-4R-5 | 0.67–0.79 | 1,080 | ∼1 | 27 | 0.6 | 85 | 4.7 |
| JdF 2792-4R-6 | 0.68–0.77 | 1,080 | ∼1 | 26 | 0.5 | 94 | 5.6 |
| JdF 2792-4R-7 | 0.69–0.74 | 1,080 | ∼1 | 28 | 0.6 | 68 | 3.5 |
| JdF 2794-2R-1 | 0.65–0.71 | 1,100 | ∼1 | 44 | 1.5 | 106 | 2.2 |
| JdF 2794-2R-2 | 0.66–0.68 | 1,100 | ∼1 | 29 | 0.7 | 78 | 3.7 |
| JdF 2794-2R-3 | 0.67–0.72 | 1,100 | ∼1 | 25 | 0.5 | 102 | 6.5 |
| JdF 2794-2R-4 | 0.67–0.69 | 1,100 | ∼1 | Within error of equilibrium, no information retained | | | |
| JdF 2794-2R-5 | 0.67–0.72 | 1,100 | ∼1 | 30 | 0.7 | 43 | 1.9 |
| JdF 2794-2R-6 | 0.67–0.70 | 1,100 | ∼1 | 55 | 2.4 | 87 | 1.2 |
| JdF 2794-2R-7 | 0.67–0.71 | 1,100 | ∼1 | 47 | 1.7 | 110 | 2.0 |
| Gorda W9604-C3-1 | 0.79–0.82 | 1,130 | ∼1 | 69 | 3.8 | 61 | 0.5 |
| Gorda W9604-C3-2 | 0.75–0.80 | 1,130 | ∼1 | 56 | 2.5 | 90 | 1.1 |
| Gorda W9604-C3-3 | 0.73–0.76 | 1,130 | ∼1 | 24 | 0.5 | 12 | 0.8 |
| Gorda W9604-C3-4 | 0.70–0.83 | 1,130 | ∼1 | 49 | 1.9 | 126 | 2.1 |
| Gorda W9604-C3-5 | 0.70–0.72 | 1,130 | ∼1 | 26 | 0.5 | 61 | 3.6 |
| Gorda W9604-C3-6 | 0.71–0.81 | 1,130 | ∼1 | 34 | 0.9 | 107 | 3.7 |
| Gorda W9604-C3-7 | 0.76–0.84 | 1,130 | ∼1 | 32 | 0.8 | 147 | 5.7 |
| Gakkel D27-16-E | 0.81–0.84 | 1,145 | ∼1 | 105 | 8.7 | 683 | 2.5 |
| Gakkel D27-16-H | 0.79–0.84 | 1,145 | ∼1 | 87 | 6.0 | 832 | 4.4 |
| Gakkel D27-16-O | 0.81–0.84 | 1,145 | ∼1 | Within error of equilibrium, no information retained | | | |

[a] Based on lowest anorthite content of all crystals in each rock sample and assuming 0.5 wt% $H_2O$ in the primitive magma

[b] Actual crystal residence times are likely at least one order of magnitude lower, see text for discussion

[c] These are effective minimum growth rates that do not account for limited intermittent dissolution. Actual growth rates are likely at least one order of magnitude greater, see text for discussion