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**Timing of formation of reduction rims in ureilite olivine.**

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Ureilite olivine crystals have reduction rims, ranging from 10 to 100  $\mu\text{m}$  in width, containing exsolved fine Fe-metal blebs, which are probably associated to secondary reduction process during an impact event [1]. In order to determine the time span needed for the formation of reduction rims we have conducted a series of high temperature time-dependent experiments in a vertical gas mixing furnace, at  $f\text{O}_2$  approaching IW-4 and using San Carlos olivines as starting material. The experiments have been analysed by EMP and SEM. Here we report on the first quantitative estimates on the duration of the formation of ureilite olivine reduction rims. The experimental results show that reduction rims with a width of  $\sim 1$  to 79  $\mu\text{m}$  can be produced between 18 and 204 hours at the temperature of 1250°C. The rim progression rate of about 0.36  $\mu\text{m}/\text{h}$ , resulting from the slope of the best fit line suggests that the heating duration required for a reduction rim of 100  $\mu\text{m}$  is about 277 hours at a constant temperature of 1250°C and at  $f\text{O}_2$  of about IW-4.

+ [1] Goodrich, C. A. et al. (1987) GCA 51, 903–915.

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