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**Evolution of acapulcoites and lodranites: Joining major elements and textural constraints.**

Néri\*, A., Monnereau, M., Guignard, J., Toplis, M.J., Quitté, G., \*IRAP, Université de Toulouse, 14 Avenue Edouard Belin, 31400 Toulouse, (now at BGI, University of Bayreuth) [adrien.neri@uni-bayreuth.de](mailto:adrien.neri@uni-bayreuth.de)

Acapulcoites and lodranites represent partially differentiated meteorites, intermediate between the pristine chondrites and the fully differentiated iron meteorites. Although these groups exhibit different degrees of partial melting and thus picture a range of metal-silicate differentiation stages, their similarities in oxygen isotope compositions indicate a close relationship [1]. The processes involved in this partial and aborted differentiation remain, however, elusive. A detailed textural and chemical analysis of nine sections of acapulcoites and lodranites, using SEM-EDS, EBSD and EPMA techniques was conducted. Mineral compositions and thermodynamic equilibria were used to determine the cooling conditions, while the modal proportions and preferred orientations allowed us to highlight melt migrations. All samples evolved in similar oxygen fugacity conditions. The partial melts migration timescales were estimated from the grain sizes and provide strong insights into differentiation history of these samples and of a potential acapulcoite-lodranite parent body.

[1] Greenwood, R.C et al. (2017) *Chemie der Erde* 77, 1–43.

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