Constraining the timing of chemical fractionation of rhenium and osmium in primitive chondrites

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The timing of chemical fractionation of the highly siderophile elements (HSE) in primitive chondrites is still poorly understood. Therefore, ^{187}Re-^{187}Os nuclear geo- and cosmochronometry, a new dating method constrained by a ^{187}Re-^{232}Th-^{238}U systematics combining principles of geochronology and nuclear astrophysics [1], is used to shed light on this problem. Surprisingly, it turns out for the first time that Re-Os fractionation occurred during a time interval of 800 million years and long before the formation of the Solar System. New nucleocosmochronometric results constraining the timing of Re-Os fractionation as revealed in chondrules and CAI's from primitive chondrites are presented and discussed within a cosmological framework.

[1] Roller (2016), *Goldschmidt Conference Abstr.* **26**, 2642.