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Improved timescales for metal segregation in iron meteorite parent bodies: Combining W isotopes and cosmic-ray exposure ages

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A long standing problem in Hf-W chronology is the influence of cosmic-ray induced spallogenic neutrons on the $^{182}\mathrm{W}$ budget in iron meteorites. In order to accurately assess the exact timing of metal segregation events the measured ¹⁸²W needs to be corrected for cosmic ray exposure. Recent approaches to overcome this problem were mainly based on complex theoretical calculations of neutron production rates within iron meteorites [1] or on correlations between ¹⁸²W values and other neutron fluence monitors such as Pt isotopes [2]. Here we present a simple but straightforward method of calculating zero-exposure values for a variety of iron meteorite groups which is based on a comparison of cosmic-ray exposure ages with a voluminous body of available literature ¹⁸²W values for iron meteorites. Our improved age constraints for metal segregation events on the IAB,IIE,IIAB and IIIAB asteroids will be presented at the conference. [1] Qin et al. (2008) EPSL 273, 94-104

+ [2] Kruijer et al. (2012) 43^{rd} LPSC, 1529

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