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Internal Lu-Hf isotope systematics of the plutonic angrites NWA 4801 and NWA 4590

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The long-lived radioactive decay of ^{176}Lu to ^{176}Hf potentially provides a precise and disturbance-resistant chronometer for dating early Solar System processes. However, some meteorites show excess ^{176}Hf [1-3], resulting in Lu-Hf dates significantly older than the Solar System. One possible explanation for this is that irradiation in the early Solar System [4-5] produced the short-lived isomer ^{176m}Lu ($t_{1/2} = 3.7$ hr) and thus accelerated the ^{176}Lu -decay. We report internal Lu-Hf isochrons for the plutonic angrites NWA 4801 and NWA 4590 which yield dates of 4639 ± 16 Ma and 4631 ± 13 Ma, and initial $^{176}\text{Hf}/^{177}\text{Hf}$ values of 0.279792 (13) and 0.279777 (12), respectively. Contrary to the results of [6-7], our data do not rule out the irradiation hypothesis for the angrite parent body.

[1] Blichert-Toft, J. et al. (2002) *EPSL* 202, 167-181. [2] Bizzarro, M. et al. (2012) *G³* 13, 10.1029/2011GC004003. [3] Bast, R. et al. (2012) *LPSC*, abstract 2542. [4] Thrane, K. et al. (2010) *Astrophys J* 717, 861-867. [5] Albarède, F. et al. (2006) *GCA* 70, 1261-1270. [6] Sanborn, M.E. et al. (2012) *LPSC* abstract 2039. [7] Amelin, Y. et al. (2011) Workshop on the Formation of the First Solids in the Solar System, Hawai'i, abstract 9014.

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