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Reconstruction of Gebel Kamil's irradiation history.

Merchel*, S., Akhmadaliev, S., Fimiani, L., Haubold, R., Herrmann, S., Korschinek, G., Ott, U., Pavetich, S., Rugel, G., *HZDR, D-01328 Dresden, s.merchel@hzdr.de.

Data of the lighter cosmogenic radionuclides ^{10}Be , ^{26}Al , ^{36}Cl , and ^{41}Ca are now easily attainable at the accelerator mass spectrometry facility DREAMS [1]. Accompanied by the heavier radionuclides ^{53}Mn and ^{60}Fe , which are measured at the 14 MV tandem at Munich, and stable noble gas nuclides from MPI Mainz, complete and unique exposure histories of extraterrestrial material can be reconstructed.

One of the first meteorites investigated by this team is Gebel Kamil, an ungrouped Ni-rich ataxite that produced an impact crater (\varnothing : 45 m) in southern Egypt. Two neighbored shrapnel (S) samples and two from the only individual (I) fragment (~83 kg) have been analysed. Comparison with Monte-Carlo calculations of production rates indicate that Gebel Kamil was exposed as a meteoroid body of ≥ 120 cm radius. Samples I originate from a moderate shielding of 18-25 cm, whereas samples S are from a deeper position of 53-65 cm. Most reliable ^{36}Cl - ^{36}Ar ages of I and S are ~450 Ma calculated after [3].

Ackn.: L. Folco (meteorite) & accelerator crews (support AMS). Ref.: [1] Akhmadaliev et al. (2012) NIMB, in print. [2] Folco et al., Science 329 (2010) 804. [3] Ammon et al., MAPS 44 (2009) 485.

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