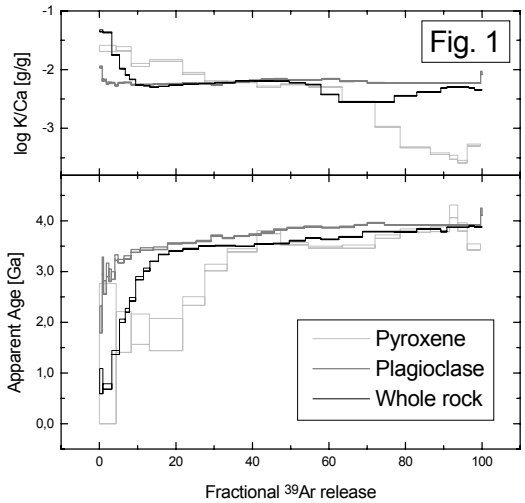
^{40}AR-^{39}AR AGES OF MINERAL SEPARATES OF EUCRITES DHO300 AND DHO007. E. V. Korotchantseva[1,2], A. I. Bouikine[1,2], M. A. Nazarov[1] and M. Trieloff[2], [1]Vernadsky Institute of Geochemistry and Analytical Chemistry, Moscow 119991, Russia, [2]Mineralogisches Institut, Universitat Heidelberg, D-69120 Heidelberg, Germany, trieloff@min.uni-heidelberg.de.

Introduction: We report new ^{40}Ar-^{39}Ar measurements on two brecciated eucrites recently discovered in the Oman desert: Dho007 and Dho300. Dho007 was classified as cumulate eucrite [1], though it has very high bulk Ni and Co contents in comparison to other eucrites [2]. Dho300 belongs to the noncumulate type of eucrites [3]. To better separate and quantify the various Ar components, high-resolution ^{40}Ar-^{39}Ar stepwise heating analyses were carried out on whole rock samples, as well as handpicked mineral separates (plagioclase, pyroxene and vein glass).

Results and discussion: All samples display distinct release peaks of trapped argon at 400°C and 700°C. This trapped component is of atmospheric composition, as revealed by three isotope correlation diagrams. Correction of the low temperature extractions results in less complex age spectra, as shown in Fig. 1 for Dho300. ^{40}Ar-^{39}Ar age spectra of Dho300 and Dho007 are similar to other typical eucrite age spectra and are characterized by stepwise increasing apparent ages. Judging from the release temperature of K-derived ^{39}Ar and the K/Ca spectra, the main K carrier in all samples is plagioclase, but of presumably differing grain size: While for the plagioclase separate, preferably large grains were picked, in the pyroxene separates there remained some % of small plagioclase grains that could not be successfully removed. However, these dominate the K budget and, hence, the age and release spectrum. Release of K-derived ^{39}Ar that correlates with Ca-derived ^{37}Ar release from the pyroxene lattice at high temperatures of >1200°C was hardly observed. The Dho300 age spectra (Fig. 1) can be explained by a recent thermal event that induced varying degrees of secondary ^{40}Ar loss (weakest for large plagioclase grains). Apparent ages in the high temperature extractions indicate that the last total reset occurred ~3.9 Ga ago (Fig.1), coeval with the intense cratering period on the moon [4].



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