

TRAPPED XENON IN NWA 817- A MARTIAN METEORITE FROM NORTH WEST AFRICA.

R. K. Mohapatra, J. D. Gilmour and S. Crowther, Department of Earth Sciences, University of Manchester, Manchester M13 9PL, U.K. (ratan.mohapatra@man.ac.uk)

Introduction: NWA 817, an olivine bearing clino pyroxene, is a Nakhlite recovered from a desert of NW Africa [1]. Inspired by the recent suggestion of extinct ^{244}Pu ($t_{1/2} = 82\text{Ma}$)-derived fission xenon in this meteorite [2] and with an aim to understand the trapped components, we have analyzed a 6 mg sample of this meteorite, as part of an ongoing study of martian meteorites, for xenon isotopes using the RELAX following standard experimental procedures [3].

Result: Fig. 1 presents preliminary data from our stepped heating experiment on NWA 817. The data have been corrected for cosmogenic contributions using the spallation spectrum used by Mathew et al. [2]. The present data, both uncorrected and corrected, are consistent with a three-component mixing of Chassigny, Mars Atm. And Earth's Atm. (end-member compositions in Fig. 1 are from [4]). With the uncertainties (of experiment and cosmogenic correction) it is difficult to assess possible contributions from the ^{244}Pu -fission end-member in this meteorite as suggested by Mathew et al. [2].

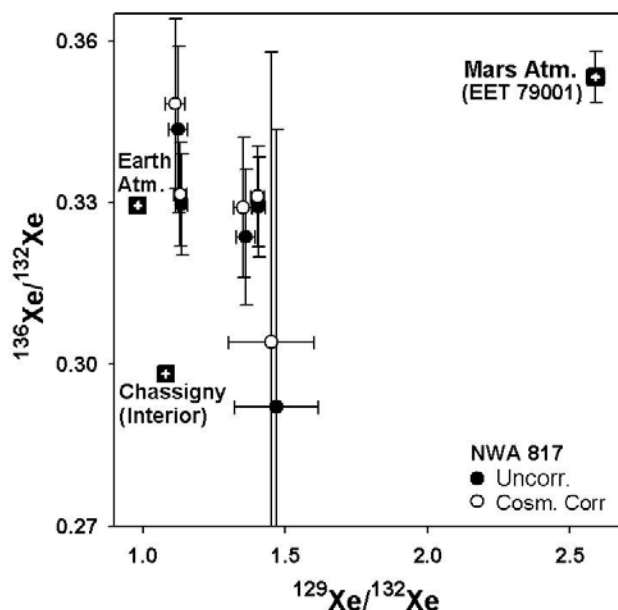


Fig. 1. A xenon three-isotope plot for the present stepped heating data from NWA 817.

Acknowledgement: We thank U. Ott for helpful discussion.

References: [1] Sautter, V. et al., 2002. *Earth Planet. Sci. Lett.* 195:223–238. [2] Mathew K. J. et al., 2003. *Earth Planet. Sci. Lett.* 214:27–42. [3] Gilmour J. et al., 2001. *Geochim. Cosmochim. Acta.* 65:343–354. [4] Swindle, T. D. 2002. *Rev. Mineral. Geochem.* 47:171–190.