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Noble Gas Exposure Histories of Martian Meteorites.

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Cosmic ray exposure ages help to identify paired or launch paired meteorites. Exposure ages are used to constrain the number of impacts on Mars that produced the meteorites reaching Earth. There are ~66 Martian meteorites known at this time [1].

We will present cosmic ray exposure ages of seven shergottites and one nakhlite. Four of the shergottites and an ungrouped achondrite, which seems to be related to LL chondrites, were analyzed additionally for the heavy noble gases Kr/Xe, including Tissint, which fell in 2011 in Morocco. First measurements of glassy inclusions of Tissint show that they might contain Martian atmosphere. The cosmic ray exposure ages of the meteorites were calculated as described in [2]. All shergottite ages are between 1 and 3.5 Ma, which agrees well with literature data of other shergottites [3]. The same is true for the Nakh lite which has an exposure age of 9.6 Ma.

[1] <http://www.imca.cc/mars/martian-meteorites-list.htm>.

[2] Eugster & Michel, (1994)GCA 59,177-199 [3] Eugster et al. (2006) MESS II, 829

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