NOBLE GASES IN MASKELYNITE FROM THE MARTIAN METEORITE SHERGOTTY. S. P. Schwenzer, R. K. Mohapatra[1], S. Herrmann & U. Ott. Max-Planck-Institut für Chemie, Postfach 3060, D-55020 Mainz (Germany). [1]Now at Dept. of Earth Sciences Univ. of Manchester, M13 9PL, Manchester (U.K.).

Introduction: The martian meteorite Shergotty is classified as basaltic shergottite [1], containing mostly pyroxene (pigeonite, augite) and maskelynite, further mesostasis and opaques. [2]. The meteorite is not brecciated, but shows shock features. Shock pressures did not exceed 30 GPa [3].

Results: Maskelynite and pyroxene were separated by hand-picking. Here we present the data for the maskelynite, which was almost pure as confirmed by SEM investigations.

Amounts and isotopic compositions of light noble gases agree well with the data obtained by Terribilini and coworkers [4]. We found $88.7*10^{-10}$ ccSTP/g of ^{22}Ne with a $^{20}Ne/^{22}Ne$ ratio of 0.838±0.008 and $^{21}Ne/^{22}Ne$ of 0.750±0.005; and $27*10^{-10}$ ccSTP/g ^{36}Ar with a $^{40}Ar/^{36}Ar$ ratio of 1145±23 and $^{38}Ar/^{36}Ar$ of 0.956±0.007. Results for Kr and Xe are given in Table 1.

Tab. 1. Results for Kr and Xe. Amounts are in 10^{-12} ccSTP/g.

T-step	^{84}Kr	^{132}Xe	$^{84}Kr/^{132}Xe$	$^{129}Xe/^{132}Xe$
350 °C	3.2±0.3	0.8±0.1	4.0	0.957±0.074
988 °C	11.0±0.9	1.7±0.1	6.5	1.088±0.050
1535 °C	24.8±1.9	3.4±0.3	7.3	1.363±0.072
1535 °C	0.1±0.2	0.7±0.07	0.14	1.065±0.177
sum	39.1±2.1	6.6±0.3	5.9	1.234±0.033

Fig. 1 shows the data obtained for the maskelynite together with bulk data from literature [5, 6] for comparison. The 1535 °C step, in which >50% of the ^{132}Xe is released, shows contribution of Martian atmosphere. The concentration of Martian atmospheric xenon is somewhat lower than that observed in bulk samples [5, 6], however.

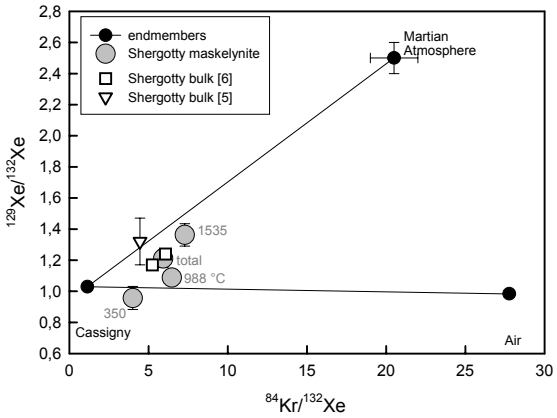

FIG. 1. $^{129}Xe/^{132}Xe$ vs. $^{84}Kr/^{132}Xe$. Endmembers are taken from [6-8].

The data for the pyroxene will be presented at the conference.

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