^{10}Be CONTENT IN SUEVITE BRECCIA CLASTS FROM THE BOSUMTWI CRATER FILL AS A PROXY FOR THE CONTENT OF SURFACE COMPONENTS.

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Introduction: According to the current understanding of meteorite impact processes, surface target material is transported from a crater in the form of ejecta or is vaporized/melted (e.g., [1]). The formation model of tektites from the surface of the target rocks has been established using the ^{10}Be content of tektites (e.g., [2]), and chemical comparison with the possible target surface material (e.g., [3]); it was also reproduced by computer modeling (e.g., [4]). On the other hand, some observations ([5, 6]) suggest that part of the surface material may be incorporated into the crater-fill. The aim of this study is to check if surface-derived material is present in suevitic breccias to better understand formation mechanisms of fallback breccias.

Samples: The Bosumtwi crater was chosen as study site because of its relatively large size (10.5 km in diameter), relatively young age of 1.07 Ma [7], good preservation, and availability of core samples. Clasts from suevitic breccia selected for this study come from the LB-07A and LB-08A cores that are located within the crater and represent fallback breccia (e.g., [7]). Of 18 analyzed clast samples, 13 came from core LB-07A and represent depths of 336.4 – 405.7 m and 5 are from core LB-08A from depths 239.5 – 264.9 m.

Methods: For each sample, 0.8 g of finely grounded material from clasts containing *in situ* produced and meteoric ^{10}Be was dissolved in a mixture of HF and HNO_3 by microwave digestion. A carrier (1 mg, ^{10}Be/^{9}Be ratio: $2.82\pm0.31*10^{-15}$ [2σ uncertainty]) was added to the sample, and then Be was chemically separated from the sample solution. ^{10}Be/^{9}Be ratios were measured at the Vienna Environmental Research Accelerator Facility (VERA) at the University of Vienna.

Results: Most samples have ^{10}Be/^{9}Be ratios indistinguishable from the blank within 2σ uncertainty. However, one sample has a significantly higher ^{10}Be/^{9}Be ratio ($7.94\pm0.84*10^{-15}$[2σ]).

Discussion: The data obtained so far suggest that none of the analyzed clasts present in the suevitic breccia of the Bosumtwi crater come from depths less than 15 meters, or/and are contaminated with meteoric ^{10}Be carried in the rain-water. The reasons for one of the samples having an elevated ^{10}Be content could be: 1) the clast originated from a depth of ~20-25 meters below the surface level within the impact crater target material, 2) the clast was in contact with water enriched in meteoric ^{10}Be, 3) experimental uncertainty (to exclude this possibility, the measurement will be repeated).

Acknowledgment: Supported by University of Vienna doctoral school IK-1045 (Planetology).

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