**PRESERVATION OF IMPACT DERIVED METALLIC SPHERULES WITHIN IMPACTITE VESICLES.**

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**Introduction:** Impact derived micron-sized spherules of Fe-Ni alloys are commonly found within the glassy parts of impactites. Such spherules frequently show evidence of remelting and differentiation. Here we report the first findings of metallic spherules associated with the surface of the vesicles in the impactite from the Wabar crater. They decorate the surface at vastely differing concentrations between a single particle per vesicle to several hundreds. An example of the highest concentrations found are shown in Fig. 1. The almost undisturbed appearance of the glass/spherule contact indicates a very low energy exchange in the impact.

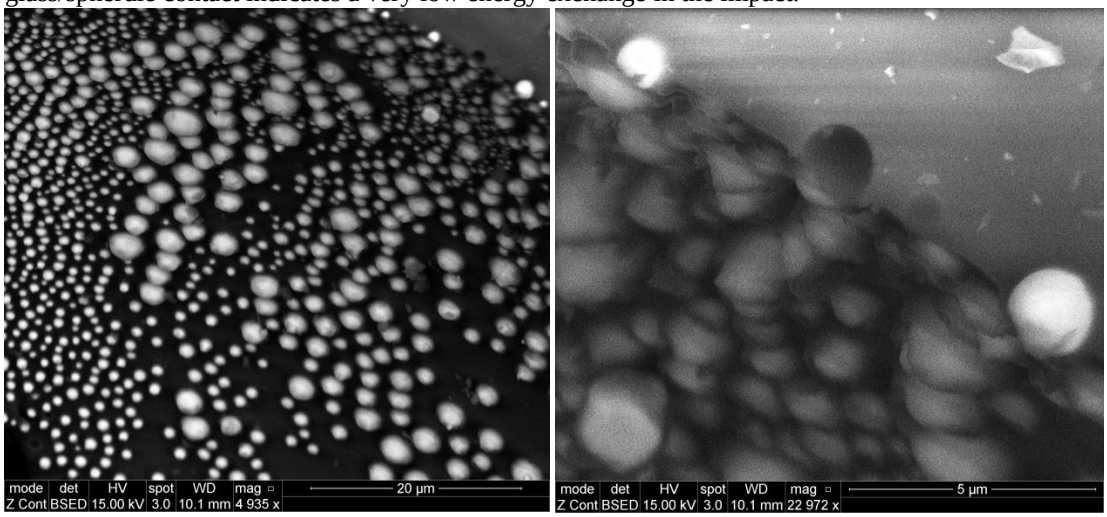


**Fig.1.** Left: A bimodal distribution of Fe spherules (showing bright in the backscatter mode) decorating the inside of a vesicle. Right: Detail of vesicle/glass transition (upper right in the previous micrograph) showing spherules embedded in the glass and the imprint of a spherule that has been removed from its embedded position.

Vesicles containing a single to a very few spherules commonly exhibit indications of much higher energies involved in the interaction. Fig.2. shows an example of a melt sheet and cracking formed by a single spherule.

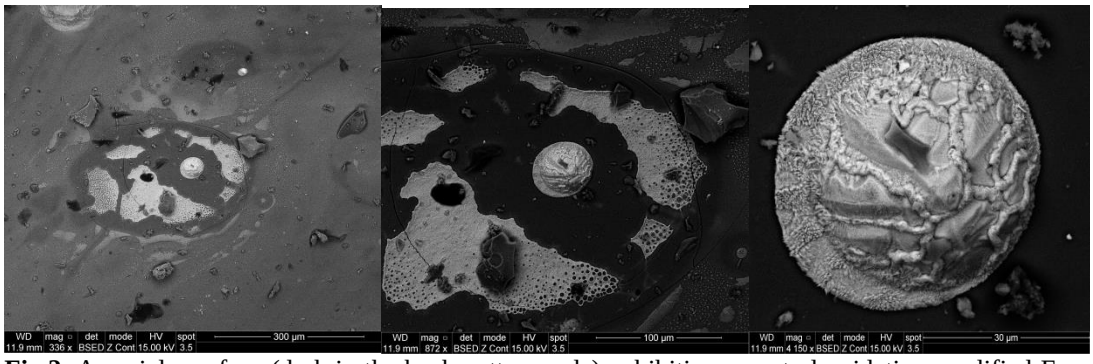


**Fig.2.** A vesicle surface (dark in the backscatter mode) exhibiting a central oxidation-modified Fe spherule that has deposited a sheet-like melt and induced formation of a (cooling?)crack intersecting the vesicle surface and the melt sheet (left and central). Detail of the Fe spherule on right panel.

These findings imply that metallic condensate processes can be studied and has profound implication for vesicle formation processes.