IMPACTITE COLLECTION AT THE AMERICAN MUSEUM OF NATURAL HISTORY. S. P. Alpert[1,2], S. J. Jaret[1], and D. S. Ebel[1], [1]Department of Earth and Planetary Sciences, American Museum of Natural History, [2]Earth and Envir. Sci., CUNY Graduate Center. salpert@amnh.org, sjaret@amnh.org, debel@amnh.org

Introduction: Museum collections are a critical and valuable resource for the geological and particularly the planetary science community. Unlike university settings, museums are designed for the long-term preservation and curation of samples to ensure a wide range of access to a vast variety of samples for researchers both today and into the future [1].

While meteorite collections are common in museums (e.g., Smithsonian Institution, Field Museum, Natural History Museum of London, and the Museum of Natural History in Vienna, to name only a few), impactite collections are much less common. Additionally, because impactites represent the intersection between terrestrial and extra-terrestrial materials, these rocks can be included either within meteorite collections or as part of terrestrial geological collections, making them difficult to track down.

Impactites are becoming more common in collections, however. Notable impactite collections at museums include the The Museum für Naturkunde Berlin [2], the Smithsonian Institution in Washington DC, and the Museum of Natural History in Vienna.

Because of the relatively short history of research on terrestrial impactites, the overwhelming majority of impactite collections are held by individual researchers, universities, or other government institutions. For example the USGS Astrogeology Science Center in Flagstaff houses a collection of Flynn Creek Drill Cores from David Roddy [3] as well as the collection from Meteor Crater from Eugene Shoemaker [4]. Similarly, both the University of Western Ontario and the University of New Brunswick house extensive collections of materials from Canadian impact structures sourced from the private collections of Richard Grieve and Michael Dence.

While these university and research institute collections are quite valuable, without indefinite funding and institutional commitment they can have potential downsides, such as being highly dependent upon the specific research topic for which they were funded. Museum collections on the other hand have the advantage of long-term funding, and are intended to be curated to serve the interests of the greater research community in perpetuity.. The purpose of this presentation is to highlight the growing AMNH impactite collection and encourage other institutions to begin including impactites as part of cataloged, curated collections.

Our museum's collection: The Meteorite collection of the American Museum of Natural History is one of the largest and oldest collections in the world. The collection houses over .

The impactite collection at the AMNH contains over eight hundred total specimens. This includes: Australites, Moldovites, Bediasites, Philippinites, and Indochinites in the tektite portion of the collection, as well as impact breccias from El G'ygytgyn, Meteor Crater, Tenoumer, and Gardnos. The collection also contains impact melts, shattercones from Santa Fe, Kentland, and Steinheim, and Darwin Glass samples. Below we highlight some of these specimens, some of which have never been described before.

As with the meteorite collection, these impactities are available for study by submitting a proposal that outlines the background and nature of the proposed work, as well as detailing the intended use of the samples.

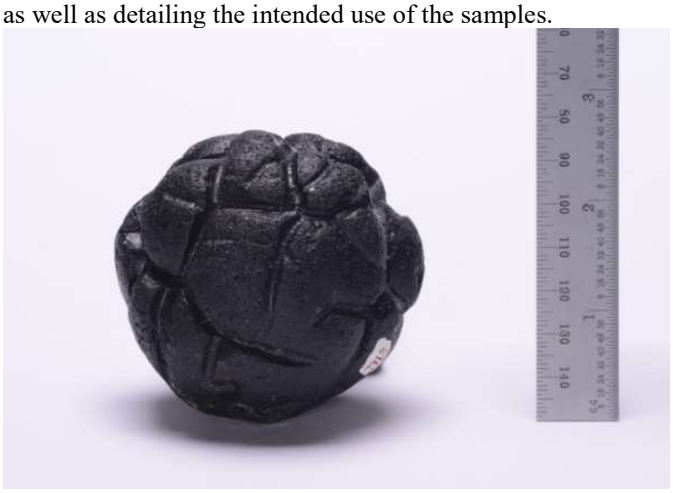

Figure 1: Australaisian Tektite.

Figure 2: Shatter Cone from the Steinheim Crater, Germany

Figure 3: Lithic impact breccia from the Gardnos Impact Structure, Norway.

Figure 4: Clast-rich impact breccia from the Rochechouart Crater, France.

Figure 5: Green-matrix breccia from the Tenoumer Impact Structure, Mauritania.

Figure 6: Black-matrix impact melt breccia from the Tenoumer impact structure.

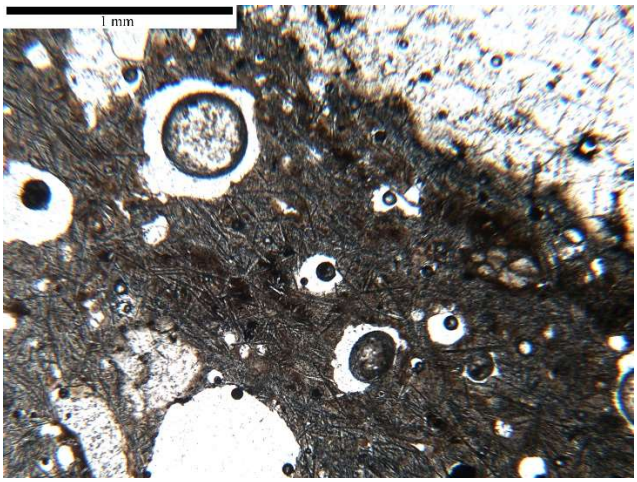

Figure 7: Plane-polarized light image of the black, vesicular, glass rich impact melt from the Tenoumer impact structure.

References: [1] Lane M.A. (1996). Ann. Missouri Botanical Garden 83, 536-545. [2] Schmitt R.T., (2016) 795h Meteoritical Society Mtg, abstract #6085. [3] Hagerty J.J. et al. (2013). 44th Lunar Planet Sci. Conf. abstract #2122. [4] Hagerty J.J. and Gaither T.A. (2013) 44th Lunar Planet Sci. Conf. abstract #2128