

**DIGITALIZATION PROJECT OF THE METEORITE COLLECTION OF THE NATURAL HISTORY MUSEUM, VIENNA.** L. Ferrière and F. Brandstätter, Natural History Museum, Burgring 7, A-1010 Vienna, Austria (ludovic.ferriere@nhm-wien.ac.at).

**Introduction:** The Natural History Museum in Vienna houses the oldest meteorite collection in the world, with the first two meteorites that entered the collection being Hraschina and Tabor in 1778 [1]. It is also one of the world's largest collection, encompassing about 2,400 individual meteorites (including a large number of the historically significant samples) with more than 7,000 registered individual specimens (i.e., with catalog/inventory numbers), with associated preparations (mainly polished thin sections) and abundant documentation. Our current permanent exhibit, with almost 2,200 objects on display, is also the largest of this type in the world.



**Fig. 1:** Meteorite Hall, Natural History Museum, Vienna.

During the last few years, and considering the increasing number of sample requests from researchers and institutions, the need for an updated electronic database has become one of our priorities. Because the display hall is currently being renovated (with a reopening of the hall planned for October 2012), the decision has been taken to proceed with the digitalization of the full collection and related documentation.

**Material and Methods Procedure:** The actual permanent exhibition, with a core consisting of the systematic collection of the major types of meteorites (displayed in glass-topped table cases) and surrounded by wall cabinets devoted to different special topics or large collections (with e.g., Mocs and Canyon Diablo meteorites) will be entirely renewed. Only the core of the actual permanent display will be "kept as it is now". To do so, all the exhibited samples will have to be handled and moved from both display cabinets and storage drawers to a temporary location.

Prior to that, a Microsoft Access database, the so-called "Meteoritendatenbank", has been created and implemented with the following "basic information" (that was until now only fully available in a "handwritten database"): Name of the meteorite, Inventory/Catalog number, Mass of the specimen, Location in our collection, and Additional information.

The next steps of the digitalization of our collection will include: (1) weighing of all samples (at the milligram level; allowing us to update and to correct, if necessary, the entered masses), (2) measuring dimensions of all specimens, (3) photographing all samples (i.e., basic 2D digital photography from different angles and perspectives), (4) scanning all labels (i.e., original paper labels (museum labels with inventory number and basic information) that are created for registration of the samples), (5) scanning all "documents" related to the specimens (including paper records, catalog register entries, correspondences, old/historical pictures and slides, etc.), and (6) rehousing specimens into more adapted boxes and storages (conservation issues, such as oxidation, will also be recorded during this step). This work will be completed within the next few months, in a systematic way.



**Fig. 2:** View of a glass-topped table case of the meteorite hall with some of the NHM Vienna eucrite samples.

We also plan, in the near future, to add reports of chemical and petrographic investigations to the database. The digitalization of our collection of meteorite polished thin sections and "normal" polished sections is also planned, including scans of the sections (using a petrographic microscope and an appropriate computer program) and the acquisition of scanning electron mi-

croscopy (SEM) maps and X-ray maps using our new SEM facilities.



**Fig. 3:** Photograph of the Cabin Creek meteorite (47.3 kg) and its original label (NHM Vienna F\_6342).

**Discussion:** One of the main objectives of the NHM Vienna is to increase access to the collections. This key objective will be largely enhanced with the completion of our digitalization project of the meteorite collection. This will be fully true only when the online searchable version of our database will be available to scientists and the general public, allowing "remote access" to all meteorite specimens in our collection. The online database will also increase the visibility of our very valuable collection to the scientific community and it will facilitate loan requests as specimens will be directly "examined online" (i.e., using the available image files and information) by researchers and curators before submission of requests. Because researchers will have a comprehensive view of

our collection and of all specific objects, it will avoid "inappropriate requests" as well and, from our side, as curators, it will also help us to quickly and optimally evaluate the requests. Furthermore, the database will allow us to process more requests and in a shorter time-span.

The digitalization of all our catalogued specimens is also completed with respect to centralize information at an "unrivalled level", to facilitate the curation of the collection, but also to preserve and ensure integrity of this scientific and historical heritage for the next generations.

Considering that our analytical facilities will be upgraded in the next weeks with a new JSM-6610LV SEM and JXA-8530F electron microprobe, the new database will be a very useful tool for researchers, including also PhD students and postdocs, willing to investigate meteorite samples from the NHM collection. Finally, because the Vienna collection continues to grow through purchases, donations, and ongoing classification of samples, the digitalization of the collection will continuously proceed in the future and we are certain that it will be a state-of-the-art "window" on the status of the collection.

**References:** [1] Brandstätter F. (2006) In *The History of Meteoritics and Key Meteorite Collections: Fireballs, Falls and Finds*. Geological Society, London, Special Publications 256, pp. 123–133.