Utrecht Meteorite Lab

Digitizing the Utrecht Meteorite Collection

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Research group: Astrobiology / Petrology
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Project description

The Department of Earth Sciences has an extensive meteorite collection that is currently only partly used in teaching activities. Inge Loes ten Kate, the curator for the collection, aims to make the collection better accessible for future teaching activities at UU and other institutions, as well for the public at large. In 2022, we have established the Utrecht Meteorite Lab, the virtual Utrecht meteorite collection (www.utrechtmeteoritelab.sites.uu.nl).

The Utrecht Meteorite Lab is built in close collaboration with the Delft Meteorite Lab at TU Delft Aerospace Engineering (www.delftmeteoritelab.nl). We aim to create a virtually accessible collection containing 3D renderings of the Utrecht meteorite collection, enriched with their respective density and composition data, and microscope images of thin sections of selected meteorites.

This BMA project will build further on the 2022 BMA project that laid the groundwork for the virtual collection, by establishing the first version of the website and integrating several meteorites. The goals of the 2024 BMA project are: (I) create 3D models of a second selection of the meteorites through Structure-from-Motion photogrammetry, where photographs of the meteorites will be rendered into 3D photorealistic models. An outline to the workflow, the photography setup and a software tutorial are available at the Delft Meteorite Lab. (II) Prepare scans and microscopic images of several of the thin sections in the collection. (III) Further build the virtual collection, including reviewed meteorites descriptions previously prepared by students during the Introduction into Planetary Sciences course (Geo3-1327A). (IV) Draft a plan for incorporating a meteorite and solar system evolutionary history for the general public.

Job requirements

A responsible and conscious working attitude is required to work with these precious materials. In addition, affinity with photography and meteoritic, mineralogical, and petrological analyses, and the ability to quickly learn new analytical techniques and adopt workflows with a new software are a pre.