Mineralogical Society of the UK and Ireland

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UNIVERSITY OF LEICESTER

I'm Niamh and I'm a final year PhD student at the University of Leicester. My research focusses on analyses of aqueous alteration minerals in meteorites; carbonaceous chondrites which are some of the most primitive and oldest material in our Solar System, and nakhlite meteorites from Mars which can tell us more about Mars' past climate and geochemical environment. I use a range of techniques in my work from the microscale to the nanoscale, using µCT scanning for 3D analyses, to using transmission electron microscopy (TEM) to study the crystal lattice structure of the phyllosilicates.

I was generously granted a postgraduate student bursary by the Mineralogical Society, which was used to enable my attendance at the 87th annual meeting of the Meteoritical Society. The meeting was held in Perth, Western Australia from 13th – 18th July 2025.

This year's meeting was a busy one for me; I gave a talk, presented a poster and chaired a session. The week started on the Sunday evening with the welcome reception, held at the Western Australian (WA) Boola Bardip museum, and as we were in Australia a traditional welcome to country ceremony was held for us by the aboriginal custodians of the land, the Whadjuk Nyoongar.

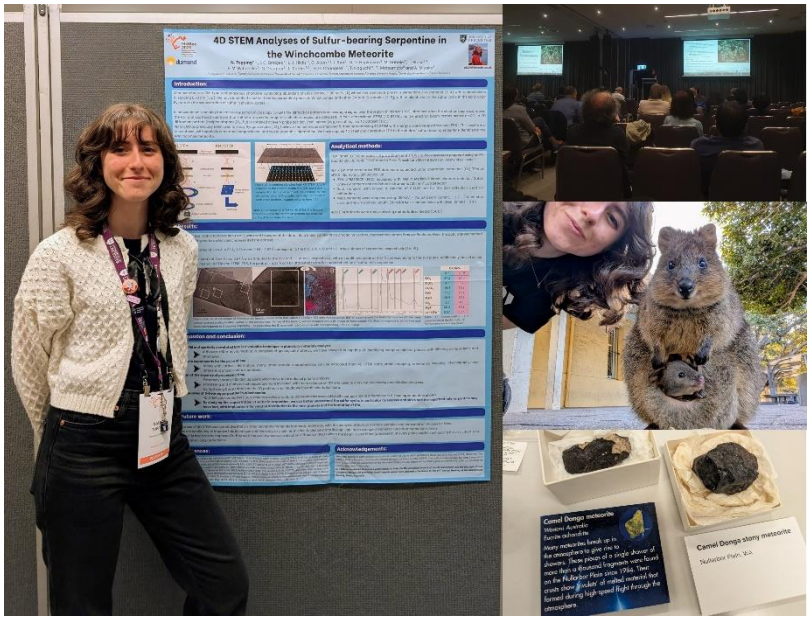

Figure 1: Left: Presenting my poster during Thursday evening's poster session. Top right: My oral presentation about analyses of NWA 15364. Centre right: A selfie with a quokka and her joey on Rottnest Island! Bottom right: Just some of the meteorite specimens from the WA museum vault.

The conference started with sessions about asteroid sample return missions and Mars: in this session I presented my analyses of a new Martian nakhlite meteorite, NWA 15364. The day ended with the annual Barringer lecture; this year given by the awardee Prof. Phil Bland, which was a very interesting talk about science and why we do what we do and why it's important. It was a really uplifting and motivational lecture. The rest of the week covered a whole range of meteoritics research topics: impact cratering, micrometeorites, ordinary and carbonaceous chondrites, lunar samples and meteorite recovery (to name a few!).

One of the conference highlights is always the banquet dinner. On the Wednesday after the annual awards ceremony, attendees choose from a range of field trips. I chose to go to the vaults of the WA museum to see their meteorite collection. As Australia is basically a huge desert, meteorite hunts and finds are much more successful, evidenced by the sheer number of Nullabor meteorites in the collection! The banquet was held at a restaurant in the botanical gardens overlooking the city of Perth and the quay, a really beautiful setting with great food.

On the Thursday morning I chaired my first conference session on carbonaceous chondrites and chondritic components, and in the evening presented my poster about the work I've done using 4D STEM and correlative EDS for the analysis of the Winchcombe meteorite. The conference then wrapped up on the Friday morning and by lunch time MetSoc2025 was done!

No trip to Perth would be complete without visiting Rottnest Island/Wadjemup, home of the adorable quokkas. I spent the Saturday on the island exploring by bike and enjoying the amazing scenery and wildlife.

Thank you again to MinSoc for their bursary, enabling me to have a very successful conference week!