



I'm Cesca, a 3rd-year PhD student at the University of Leicester, and I was generously awarded a postgraduate student bursary of £500 by the Mineralogical Society for travel to the Lunar and Planetary Science Conference (LPSC) in March 2026. My research can be separated into two parts, with the overarching aim of investigating the composition of the Martian crust. Part one involves the in-situ analysis of sedimentary rocks in Gale Crater, Mars, using the Chemistry and Camera (ChemCam) instrument aboard the Mars Science Laboratory (Curiosity rover). Here, I study the geochemistry of two geological members preserved in the 5 km high sedimentary pile at the crater's centre (informally named Mount Sharp), to decipher the source region compositions from which these sediments were derived. Part two focuses on preparations for ex-situ analysis of Mars samples during the Mars Sample Return mission, using electron microscopy techniques to characterize geological analogue materials for igneous crater floor units of Jezero Crater to establish their suitability as an analogue for Mars.

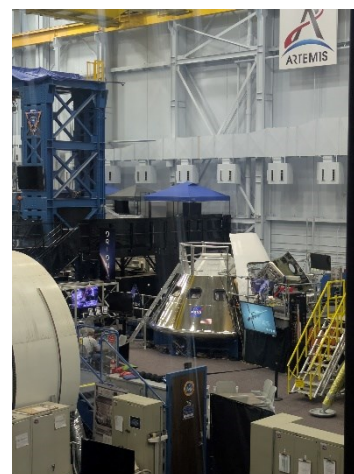
LPSC is hosted annually in Houston, TX, and is traditionally one of the largest international planetary science conferences, so receiving this bursary was incredibly valuable in facilitating my attendance! I was fortunate enough to present twice throughout the week, with a talk on my work characterizing an analogue sample from the Isle of Rum, Scotland, and comparing my results



to the Séitah formation of Jezero Crater at the beginning of the week. Later in the week I presented a poster on Curiosity rover analysis of the more recently explored Chenapau and Altadena members of Gale Crater. Here, I focused on using geochemical analysis by ChemCam to unpick nodule compositions (secondary diagenetic features present across both members), to better understand how alteration processes may have differed between the two members. The talks and posters throughout the conference were excellent, covering a breadth of planetary science subjects including compositional analysis of recently returned asteroidal samples, a special session on lunar science that provided updates on the Artemis missions, and several talks on Mars surface geology.

Attending the conference also provided me the rare opportunity to meet with some of my colleagues on the Mars Science Laboratory mission. We were approaching the end of the campaign in the Boxwork unit (Altadena mb) at the time of the conference, so celebrated with a team dinner. Meeting some of the team in person was definitely a highlight of the week!

Before the conference I was also fortunate enough to visit NASA Johnson Space Center! I saw the Saturn V rocket in person, as well as the astronaut training facility where a replica of the Orion capsule was used to train the Artemis 2 astronauts before their Lunar fly by.



A big thank you again to MinSoc for awarding me this bursary!