

## Sierra Ramsey Biography

I am currently a Ph.D. student and graduate research assistant in the Department of Geoscience at the University of Nevada, Las Vegas, working with Dr. Arya Udry on martian meteorites. In 2018, I earned a BSc Hons in geology with a minor in chemistry from Western Carolina University, where I was introduced to planetary science with an opportunity to work on a lunar meteorite. The same year, I began an MSc program at the University of Georgia (UGA), working on a large suite of martian meteorites to understand how these rocks formed on Mars. I graduated from UGA in 2020, and the findings of my thesis were published in *Meteoritics and Planetary Science*. After completing my Ph.D., I aim to pursue a career in academia, teaching at the university level and continuing to research planetary geology to elucidate the many unknowns of our Solar System and beyond.

My research project for the 2022–2023 academic year will focus on using melt inclusions (small pockets of trapped melt) in martian meteorites to constrain the pressure at which these rocks formed on Mars, yielding vital information about martian magmatic systems and the martian interior. To do this, I'll be using Raman spectroscopy and electron probe microanalyses to determine volatile content and major element chemistry, respectively, which can be used to calculate the pressures at which the melt inclusions were entrapped. This technique has been used on terrestrial systems to determine crystallization pressures but has not yet been applied to Mars. If using volatile contents in melt inclusions is applicable to martian systems, this technique could become a geobarometer for martian rocks.

