

The Earth and Planetary Materials Group led by PI Nicholas Dygert seeks to recruit a PhD student to participate in NASA-funded experimental and modeling research contextualizing samples returned from the lunar south pole by the Artemis III mission. The student will run experiments evaluating how a differentiation process known as cumulate mantle overturn affected phase equilibria and the trace element and isotopic composition of the lunar magma ocean while it was actively solidfying. The student will also evaluate whether rocks from differentiated impact melt sheets could be distinguished from magma ocean cumulates by petrologic and geochemical means. Experiments will be conducted in a high pressure, high temperature piston cylinder apparatus at the University of Tennessee. Modeling work will be conducted using publically available thermodynamic software and new in-house developed codes.

The Earth and Planetary Materials Group is a diverse and productive team of researchers; students from all backgrounds are encouraged to apply. Preference will be given to applicants with past experience in experimental petrology and/or geochemical modeling. In addition to lunar and planetary science, the group conducts research on the formation and evolution of Earth's lithosphere. Interested candidates could participate in shipboard field work in the Mariana Trench forearc in fall 2024.

The successful applicant will be guaranteed tuition and a living stipend contingent upon adequate progress toward the degree. Knoxville is a vibrant urban community that provides excellent quality of life, with easy access to outdoor recreation opportunities in the nearby mountains and waterways. The deadline for Fall admission to the University of Tennessee is January 1st. In addition to PhD students, highly qualified candidates for the MS track will be considered. All candidates are encouraged to contact PI Dygert prior to applying at ndygert1@utk.edu.

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