Dian Ji

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EDUCATION

Department of Earth, Environmental and Planetary Sciences, Rice University Aug 2023 – Present
Ph.D. in Geology Houston, TX
Advisor: Rajdeep Dasgupta

Department of Earth and Planetary Sciences, University of Tennessee June 2021 – July 2023
M.S. in Geology Knoxville, TN
Advisor: Nicholas Dygert; Committee: Molly McCanta, Shichun Huang, Bradley Thomson
Thesis: Numerical and Experimental Constraints on Trace Element Fractionation During Lunar Magma Ocean Solidification
GPA: 4.0 / 4.0

College of Geosciences, China University of Petroleum, Beijing Sep 2016 - Jun 2020
B.E. in Resource Exploration Engineering Beijing
Advisor: Huichuan Liu
GPA: 3.9 / 5.0

PUBLICATION

Total citations: 11
i10-index = 1; h-index = 1

D. Ji, N. Dygert, (2023) Trace element evidence for serial processing of the lunar flotation crust and a depleted bulk Moon. *Earth and Planetary Science Letters.* doi: 10.1016/j.epsl.2022.117958
D. Ji, H.C. Liu, Y.L. Li, (2020) Large-scale Early Cretaceous lower-crust melting derived adakitic rocks in NE China: implications for convergent bidirectional subduction and slab rollback: *International Geology Review*. doi:10.1080/00206814.2019.1697968

FORTHCOMING

D. Ji, N. Dygert, Trace element partitioning between apatite and silicate melts. *in Revision*

CONFERENCE ABSTRACTS

N. Dygert, **D. Ji**, 2023. Serial Processing of the Lunar Crust after the Magma Ocean Stage and a Depleted Bulk Moon: Insights from a Europium-in-Plagioclase Partitioning Model. *Goldschmidt Conference*, # 17023.
D. Ji, N. Dygert, 2023. New experimental constraints on REE partitioning between apatite and silicate melts and a temperature and composition-dependent predictive partitioning model. *Lunar and Planetary Science Conference, LIV* #1255.
D. Ji, N. Dygert, 2022. Serial processing after lunar anorthositic crust formation indicated by rare earth elements in plagioclase. *Lunar and Planetary Science Conference, LIII* #1229.
D. Ji, N. Dygert, 2021. Eu anomalies in lunar plagioclase reflect secondary processing by subsolidus reequilibration and introduction of a KREEP component. *Goldschmidt Conference*, #3219.
N. Dygert, **D. Ji**, A.L. Fagan, C.R. Neal, D.S. Draper, J.F. Rapp, T.J. Lapen, 2021. Petrogenesis of and subsolidus reequilibration within lunar ferroan anorthosites: Two demonstrations of a new fO_2-dependent model for plagioclase-melt europium partitioning. *Lunar and Planetary Science Conference*, LII, #2352.

CONFERENCE TALKS

54th Lunar and Planetary Science Conference, Houston Mar 2023
53rd Lunar and Planetary Science Conference, Houston Mar 2022
31st Goldschmidt Conference, Virtual Jul 2021

GRANTS

Trace element partitioning between apatite and silicate melts 2023
MSA Grant for Student Research in Mineralogy and Petrology, Mineralogical Society of America
$5,000 to Student PI: Ji

HONORS & AWARDS

- **The Chair's Fellowship**, Rice University ($10,000) 2023
- **Virginia & James Bibee Graduate Student Professional Promise Award**
  University of Tennessee ($500) 2023
- **Excellence in Teaching by GTA's Award**, University of Tennessee ($500) 2023
- **Member**, *The Honor Society of Phi Kappa Phi* 2023
- **Jimmy Walls Colloquium Presentation Award**, University of Tennessee ($500) 2022
- **Li Siguang Outstanding Student Award** (¥15,000) 2020
- **Excellent Senior Thesis Award**, Beijing 2020
- **Dean's Nomination Award of College of Geosciences**, China University of Petroleum (¥5,000) 2020
- **First-class Scholarship**, China University of Petroleum (¥2,000) 2019
- **Oriental Geophysics Company Scholarship** (¥3,000) 2018
- **Second-class Scholarship**, China University of Petroleum (¥1,000) 2017

SERVICE

Journal Reviewer
Geochimica et Cosmochimica Acta (×1); American Mineralogist (×1); International Geology Review (×2)

TRAINING

Teaching Assistant, University of Tennessee Aug 2022 – May 2023
GEOL330: Igneous and Metamorphic Petrology Student evaluation 5.0/5.0
GEOL310: Mineralogy Student evaluation 4.8/5.0

Research Assistant, University of Tennessee June 2021 – July 2022

RESEARCH

Research on the trace element partitioning between apatite and silicate melts Apr 2022 – Present

- Expanded the dataset of partition coefficients between apatite and silicate melt through piston cylinder experiments
- Conducted a series of experiments with constant initial composition but different metal buffers to characterize the Eu anomaly of apatite under different oxygen fugacities
- Built predictive models to calculate the partition coefficients of trace elements between apatite and silicate melts

Research on the Eu anomalies in lunar plagioclase Sep 2020 – Apr 2022

- Compiled published crystallization sequences and cumulate products of the lunar magma ocean
- Numerical modeled the trace element abundances of crystallized plagioclase, and tested the reasons of Eu anomalies by subsolidus reequilibration and KREEP addition
- Proposed a post-LMO model to explain the petrogenesis of lunar anorthosites and to reconcile the trace elements, isotopic evidence, and the overlap in ages of Mg-suite, KREEP basalt, and ferroan anorthosites

Laboratory Work and Visiting in UT Dallas Jul 2019 – Sep 2019

- Worked in the Global Magmatic and Tectonic Research Laboratory with Dr. Robert Stern at UT Dallas on a project aims at determining the petrogenesis of all the Early Cretaceous adakites in China

Research on Petrogenesis of Early Cretaceous Adakites in Northeast China Oct 2018 – Apr 2019

- Aimed at figuring out the controversial tectonic settings in NE China by confirming the petrogenesis of the large-scale Early Cretaceous adakitic rocks
- Compiled the temporal and spatial distribution as well as the major elements, trace elements, and Sr-Nd, Lu-Hf isotopic data of the Early Cretaceous adakites
- Proposed a convergent bidirectional subduction model to explain the tectonic settings

FIELD EXPERIENCE

Rio Grande Rift and Jemez Lineament xenolith sampling, New Mexico 2022

- Collected mantle and crustal xenolith from Kilbourne Hole to Cerro de Guadalupe in New Mexico for a week led by Dr. Nicholas Dygert

McClung Blue Ridge Foothills Field Trip 2022

- Observed part of the transition from the external foreland fold-thrust belt of the Appalachians into the internal metamorphic core led by Dr. Bob Hatcher

Archean Basic Rock Collection, Miyun 2019

- Collected Archean garnet pyroxenite
- Measured geological occurrence of basaltic dyke group led by Dr. Huichuan Liu

Field Practice in Oilfield, Dagang Oilfield 2019

- Learned the working methods of oilfield engineers, and interpretation of seismic data as well as logging data for two weeks

Comprehensive Geological Field Practice, Liujiang Basin 2018

- A month-long geological field practice includes surveys of stratigraphic profiles and geological mapping, and observation of structural geological phenomena led by Dr. Liang Luo
- Analyzed the structure phenomena logically and drew geologic maps with CorelDraw

General Field Practice, Western Hills of Beijing 2017

- A two-week geological field practice for learning to recognize magmatic rocks, sedimentary rocks, and metamorphic rocks led by Dr. Qin Zhang
- Described how rock and fossil evidence are used to infer Earth's history