

## **CV - Colin Jackson**

### **Education:**

2014: *Brown University*, Ph.D, Geological Sciences

*Dissertation:* “Experimental Constraints on the Geochemical Processing of Planetary Interiors: Noble Gases and Spinel Spectroscopy” Advisor: Stephen Parman

2011: *Brown University*, M.Sc, Geological Sciences

2008: *University of California, Santa Cruz*, B.S., Earth Science

*Thesis:* “Partitioning of Ni between Olivine and an Iron-Rich Basalt: Experiments, Partition Models, and Planetary Implications” Advisor: Jim Gill

### **Academic Career:**

2014- : Postdoctoral Fellow, Geophysical Laboratory, Carnegie Institute of Washington

2009-2014: Research Assistant: Brown University, Experimental Petrology Lab

2008-2009: Research Assistant: USGS, Geophysics Unit of Menlo Park, CA

Assisted in paleomagnetic and gravity field measurement fieldwork. Sample preparation/analysis

2007: Summer Intern, Lunar and Planetary Institute, Houston, TX

Conducted experimental investigation of Ni partitioning with application to Mg-Suite petrogenesis

### **List of Publications (\* denotes student mentored):**

-K. Shimizu, Y. Liang, C. Sun, **C.R.M. Jackson**, A. Saal, Parameterized Lattice Strain Models for REE Partitioning between Amphibole and Silicate Melt, In review, *Chemical Geology*

-N. A. Starkey, **C.R.M Jackson**, R. C. Greenwood, S. Parman, I. A. Franchi, M.G. Jackson., J. G. Fitton, F. M. Stuart, M. Kurz, L. M. Larsen (2016) Triple oxygen isotopic composition of the high  $^3\text{He}/^4\text{He}$  mantle. *Geochimica et Cosmochimica Acta* 176, 227-238

-K.B. Williams\*, **C.R.M. Jackson**, L.C. Cheek, K.L. Donaldson Hanna, C.M. Pieters, S.W. Parman, M.D. Dyar, T.C. Prissel (2016) Reflectance Spectroscopy of Chromium-bearing Spinel with Application to Recent Orbital Data from the Moon. accepted with *American Mineralogist*

-**C. R. M. Jackson**, D.L. Shuster, S.W. Parman, A.J. Smye (2016) Noble gas diffusivity hindered by low energy sites in amphibole, *Geochimica et Cosmochimica Acta* 172, 65-75

-**C. R. M. Jackson**, S.W. Parman, S.P. Kelley, R.F. Cooper (2015), Light noble gas dissolution into ring structure-bearing materials and lattice influences on noble gas recycling, *Geochimica et Cosmochimica Acta* 159, 1-15

-**C.R.M. Jackson**, L. Cheek, K. Williams, K. Donaldson-Hanna, C. Pieters, S. Parman, R. Cooper, M. Dyar, M. Nelms, and M. Salvatore (2014), Visible-Infrared Spectral Properties of Iron-bearing Aluminated Spinel Under Lunar-Like Redox Conditions, *American Mineralogist*, 99, 10, 1821-1833

-T.C. Prissel, S.W. Parman, **C.R.M. Jackson**, M.J. Rutherford, P.C. Hess, J.W. Head, L. Cheek, D. Dhingra, and C.M. Pieters (2014), Pink Moon: The Petrogenesis of Pink Spinel Anorthosites and Implications Concerning Mg-suite Magmatism, *Earth and Planetary Science Letters*, 403, 144-156

-C. Pieters, K. Donaldson Hanna, L. Cheek, D. Dhingra, T. Prissel, **C. Jackson**, D. Moriarty, S. Parman, and L. Taylor (2014), The distribution of Mg-spinel Across the Moon and Constraints on Crustal Origin, *American Mineralogist*, 99, 10, 1893-1910

-**C.R.M. Jackson**, L. B. Ziegler, H. Zhang, M.G. Jackson, D. R. Stegman (2014), A geochemical evaluation of potential magma ocean dynamics using a parameterized model for perovskite crystallization, *Earth and Planetary Science Letters*, 392, 154-165

## ***CV - Colin Jackson***

-**C. R. M. Jackson**, S.W. Parman, S.P. Kelley, R.F. Cooper (2013), Constraints on light noble gas partitioning at the conditions of spinel peridotite melting, *Earth and Planetary Science Letters*, 384, 178-187

-**C. R. M. Jackson**, S.W. Parman, S.P. Kelley, R.F. Cooper (2013), Noble gas transport into the mantle facilitated by high solubility in amphibole, *Nature Geoscience*, 6, 562-565

-Donaldson Hanna, K. L., I. R. Thomas, N. E. Bowles, B. T. Greenhagen, C. M. Pieters, J. F. Mustard, **C. R. M. Jackson**, and M. B. Wyatt (2012), Laboratory emissivity measurements of the plagioclase solid solution series under varying environmental conditions, *Journal of Geophysical Research*, Vol 117, Issue E11

-J. Filiberto, **C. Jackson**, L. Le., and A.H. Treiman (2009), Partitioning of Ni between Olivine and an Iron-Rich Basalt: Experiments, Partition Models, and Planetary Implications. *American Mineralogist* 94, 256-261

### **Courses Taught and Teaching Experience:**

-2014, Spring: Teaching Assistant: Introduction to Geochemistry (GEO 0230)

Taught lab sections. Led field trip groups. Grading.

-2010, Fall: Teaching Assistant: Physical Processes in Geology (GEO 0220)

Co-taught lab sections. Led field trip groups. Grading.

-2009-2014, Volunteer teacher, Vartan Gregorian Elementary School, Providence, RI. Developed and taught 2<sup>nd</sup> grade science classes ~4× yr<sup>-1</sup>.

-2013, Summer, Guest lectured high school students on material properties of minerals

### **Honors/Awards:**

-Carnegie Postdoctoral Fellowship, 2014

-Joukowsky Outstanding Dissertation Prize, *Nominated (one per department)*, 2014

-Dissertation Fellowship, Brown University, 2013

-Lunar Science Forum, Poster Award, 1<sup>st</sup> Place, 2013

-Outstanding Student Paper Award, AGU Fall Meeting 2013, VGP Section

-First Year Fellowship, Brown University, 2009-10

-Dean's Research Award, UCSC, 2007-08

-Departmental and Thesis Honors, Dept. of Earth Science, UCSC

### **Invited Presentations:**

-Geological Society of Washington, Oct. 2016

-Geophysical Laboratory, Sept. 2016

-Syracuse University, Aug. 2016

-Ehime University, GRC, June 2016

-UC Davis, April, 2016

-UC Riverside, March, 2016

-NMNH, Smithsonian, Feb. 2016

-Uni. of Maryland, Seminar, Feb. 2016

-Uni. of Maryland, Colloquium, Feb. 2015

-Gordon Research Seminar, MA, 2013

-Post-AGU CIDER Workshop, UCB, 2012

-Solid Earth Seminar, Boston Uni., Oct. 2011

### **Proposals:**

-Argonne National Laboratory, Advanced Photon Source, 13 IDD, Project title: Experimental determinations of noble gas partitioning between Earth's major geochemical reservoirs during accretion, 16 shifts, active

## ***CV - Colin Jackson***

-Cooperative Institute for Dynamics Earth Research 2012, Group Research Proposal, Basal Magma Ocean (BMO) Working Group, \$3950

### **Abstracts of active projects (\* denotes student mentored):**

- **C.R.M. Jackson**, N.R. Bennett, Z. Du, Y. Fei, Discrete stages of core forming survive the Moon-forming impact, Fall AGU 2016

-R. Mershon\*, **C.R.M Jackson**, Y Fei, S.M Elardo, N.R. Bennett, The Role of Oxygen Fugacity in Fractionating Parent-Daughter Pairs between Basaltic and Sulfidic Liquids, AGU Fall Meeting 2015 V53B-3133

-J. Krantz, S. W. Parman, S.P. Kelley, A. Smye, **C.R.M. Jackson**, Experimental Constraints on He, Ne, and Ar Solubility in Serpentine, AGU Fall Meeting V53F-3170

-N.R. Bennett, **C.R.M. Jackson**, Y. Fei, E. Bullock, J. Armstrong, The Metal-Silicate Partitioning of Tungsten at Magma Ocean Conditions Using a Laser-Heated Diamond Anvil Cell, AGU Fall Meeting 2015 V33A-3074

-A. Syme, **C.R.M. Jackson**, S.W. Parman, S.P. Kelley, Tracing slab dehydration using neon and argon isotope systematics in high pressure minerals, AGU Fall Meeting V43A-3097

-N. Dygert, **C.R.M. Jackson**, M. Hesse, The role of plate tectonic cycling in modulating Earth's  $^3\text{He}/^{22}\text{Ne}$  ratio. Goldschmidt Conference 2015

-**C.R.M. Jackson**, N.R. Bennett, Y. Fei, Experimental Investigations of Noble Gas Behavior During Accretion: First Results of Argon Solubility in Mafic Liquids at High Pressure. LPSC 2015, #2496

### **Professional Service and Synergistic Activities:**

-Session convener: Japanese Geoscience Union, 2016, AGU Fall 2016

-Journal reviewer for Earth and Planetary Science Letters, Contributions to Mineralogy and Petrology, Chemical Geology, American Mineralogist, Review of Scientific Instruments, and Geochimica et Cosmochimica Acta

-External reviewer for NASA (Emerging Worlds) and NSF (OCE)

-Geological Sciences Graduate Student Representative to Faculty, 2012-2013

-Participant, CIDER Summer Workshop, Deep Time: How did early Earth become our modern world? July-August 2012, Santa Barbara, CA, USA

-Participant, Gordon Research Conference, Interior of the Earth, June 2013, Mt Holyoke, MA, USA

-Participant, Gordon Research Conference, Interior of the Earth, June 2011, Mt Holyoke, MA, USA