
BIOGRAPHICAL SKETCH

Justin I. Simon

Department of Earth and Planetary Science, University of California, Berkeley, CA 94720-4767
Berkeley Geochronology Center, Berkeley, CA 94709
Tel 510/642-9524 • Email <simon@eps.berkeley.edu> • Website: <http://eps.berkeley.edu/cig/simon/>

Education

B.A. (Geology with honors) Macalester College, MN, 1996

Field studies (Geology) Indiana University, 1996

MSc. (Geochemistry) Colorado School of Mines, 2000

Advance field studies (Volcanology) University of New Mexico and LANL, 2000

Ph.D. (Geology) University of California at Los Angeles, 2005

Title: High resolution geochronology: from planetary progenitors to terrestrial rhyolites

Research Expertise

- Non-traditional isotope systems to study mass-dependent fractionation processes in terrestrial and extraterrestrial problems
- Short-lived radionuclides to understand early solar system chronology and terrestrial planet formation
- Radioisotopic studies to understand why volcanoes exhibit a range of time scales for magmatic processes
- Research to improve methods for high-precision geochronology
- Micro-analytical isotopic studies

Professional Experience

Research/Teaching assistant (Geology and Geological Engineering) CSM, 1996-1999

Research/Teaching assistant (Earth and Space Sciences) UCLA, 1999-2004

Nat. Assoc. Geology Teachers Career Development Workshop, Univ. of Minnesota, 2004

Postdoctoral Fellow, UC Berkeley & Berkeley Geochronology Center, 2005 to present

Academic Awards and Achievements

Honors Project: Macalester College, MN, 1995-1996

Honorable Mention: Geological Society of America, 1996

Nominated for NAGT-USGS summer internship, 1996

Colorado Fellowship, Office of Graduate Studies, CSM, 1997

Horald Hickely Research Endowment Fellowship, CSM, 1998

Departmental recognition for excellent teaching at UCLA, 2000-04 (5 courses)

University of California Dissertation Year Fellowship, UCLA, 2004-05

Invited Speaker, American Geophysical Union, 2007

Peer-reviewed Grants Funded

\$44,000 & 4 weeks of nanoSIMS analysis time for chronological studies of early solar system materials, w/ Ian Hutcheon and Donald DePaolo from IGPP, 2008-2009

Refereed Journal Articles

10. **Simon, J. I.**, DePaolo, D. J., and F. Moynier (accepted for *The Astrophysical Journal*). Calcium isotope composition of meteorites, Earth, and Mars
-

-
9. **Simon, J. I.**, Vazquez, J. A., Renne, P. R., Schmitt, A. K. Bacon, C. R., and M. R. Reid (2009). Accessory mineral U-Th-Pb ages, Ar/Ar eruption chronology, and their bearing on rhyolitic magma evolution in the Pleistocene Coso volcanic field, California, *Contributions to Mineralogy and Petrology*. DOI 10.1007/s00410-009-0390-9
 8. **Simon, J. I.**, Renne, P.R., and R. Mundil, 2008. Implications of pre-eruptive magmatic histories of zircons for U-Pb geochronology of silicic extrusions, *Earth and Planetary Science Letters*. Vol. 266, 182-194
 7. **Simon, J. I.**, Reid, M. R., and E. D. Young, 2007. Lead isotopes by LA-MC-ICPMS: tracking the emergence of mantle signatures in an evolving silicic magma system, *Geochimica et Cosmochimica Acta*, Vol. 71, 2014-2035
 6. **Simon, J. I.**, Young, E. D., Russell, S. S., Tonui, E. K., Dyl, K., and C. E. Manning, 2005. A short timescale for changing oxygen fugacity in the solar nebula revealed by high-resolution ^{26}Al - ^{26}Mg dating of CAIs, *Earth and Planetary Science Letters*. Vol. 238, 272-283
 5. Young, E. D., **Simon, J. I.**, Galy, A., Tonui, E., Russell, S. S., and O. Lovera, 2005. Supracanonical $^{26}\text{Al}/^{27}\text{Al}$ and the Residence Time of CAIs in the Solar Protoplanetary Disk, *Science*. Vol. 308, 223-227, 10.1126/science.1108140
 4. **Simon, J. I.** and M. R. Reid, 2005. The pace of rhyolite differentiation and storage in an 'archetypical' silicic magma system, Long Valley, California, *Earth and Planetary Science Letters*. Vol. 235, 123-140
 3. Kavner, A., F. Bonet, A. Shahar, **J. Simon**, and E. Young, 2005. Electrochemical Separation of the Stable Isotopes of Iron, *Geochimica et Cosmochimica Acta*, Vol. 69, No. 12 2971-2979
 2. Schmitt, A. K. and **J. I. Simon**, 2004. Boron isotopic variations in hydrous rhyolitic melts: a case study from Long Valley, California, *Contributions to Mineralogy and Petrology*, Vol. 146, 590-605
 1. Wendlandt, R. F., Harrison, W. J., **Simon, J. I.**, Chastain, E. A., and J. Jecha-Ernstberger, 1998. Integrated experimental and numerical assessment of acid buffer capacity evolution in soils, *Proceedings of Tailings and Mine Waste 1998*, January 26-29, Balkema, pp. 689-700.

Journal Articles in Review/Revision

Simon J. I. and D. J. DePaolo (submitted to *EPSL*) The calcium isotopic composition of rocky planets

Teaching Expertise

"Justin is always extremely helpful. He is great at explaining difficult concepts (the analogies he uses always hit the mark). His enthusiasm for geology and his solid understanding of his discipline make him a great asset to this department."

-- Course evaluation from an Igneous Petrology student, UCLA Spring 2001

UC Berkeley (2006-2009 co-leader/guest lecturer):

- Meteorites and the Solar System Seminar, w/ petrography workshop, co-lead (Instructor: de Pater)
- Isotopic and Trace Element Geochemistry, guest lecturer (Instructors: D. Shuster, R. Mundil)

UC Los Angeles (1999-2004 graduate student teaching assistant, number=terms):

- Optical Mineralogy and Lithology (3, Instructors: A. Kavner, K. D. McKeegan, E. D. Young)
- Igneous Petrology (1, Instructor: M. R. Reid)
- The Major Events in the History of Life (1, Instructor: J. W. Schopf)
- Introduction to Oceanography (1, Instructor: F. Kyte)

CSM (1996-1999 graduate student teaching assistant, number=terms):

- Igneous, Metamorphic, Sedimentary Petrology (3, Instructors: R. Wendlandt, G. Holden, W. Harrison)
-

Analytical Expertise

- Cameca ims-1270 ion microprobe for B, Pb, Th, and U isotope systems and trace elements (UCLA)
- NanoSIMS ims-50 ion microprobe for Al-Mg isotope systematics (LLNL)
- Laser ablation and solution techniques for isotope measurements using a MC ICP-MS for Mg, Fe, Hf, and Pb isotope systems (UCLA and University of British Columbia)
- Thermal ionization mass spectrometry for Ca, Sr, and Nd isotope systems (UCLA and UC Berkeley)
- Ar/Ar dating by rare gas extraction-mass spectrometry (Berkeley Geochronology Center)
- Electron microprobe (major and trace elements) and scanning electron microscopy (SEM)
- Powder and oriented (e.g., clay minerals) x-ray diffraction (XRD) methods
- Petrographic microscopy & 8+ years of clean lab experience (UCLA and UC Berkeley)

Invited Lectures

University of California, Los Angeles, Spring 2009

Lawrence Livermore National Laboratory, Fall 2008

San Jose State, Fall 2008

Rosenstiel School of Marine and Atmospheric Science, Spring 2008

University of California, Santa Cruz, Spring 2008

American Geophysical Union, VGP, Fall 2007

University of California, Santa Cruz, Spring 2007

United States Geological Survey, Menlo Park, Spring 2007

Lawrence Livermore National Laboratory/Glenn T. Seaborg Institute, Spring 2006

University of California, Davis, Fall 2006

University of California, Berkeley/Center for Isotope Geochemistry, Spring 2005

University of New Mexico/Institute of Meteoritics, Spring 2005

California State University, Northridge, Spring 2005

Synergistic Activities

Referee, *Meteoritics & Planetary Science*, *Journal of Petrology*, and *Bulletin of Volcanology*

NSF proposal referee, *Petrology and Geochemistry*, 2006-2009

NASA proposal referee, *Cosmochemistry*, 2007

Session Convener, "New Developments in Geochronology," Fall AGU, 2007

Organized and led the Isotope Seminar Series at the Center for Isotope Geochemistry, UC Berkeley,
Spring 2007-2009

Co-lead Volcanological Society of Sacramento field trip to Owens Valley, Spring 2008

Collaborators

L. E. Borg, Lawrence Livermore Nat. Laboratory
C. R. Bacon, United States Geological Survey
D. J. DePaolo, UC Berkeley & LBNL
A. Galy, Cambridge University
A. Kavner, UCLA
C. E. Manning, UCLA
F. Moynier, Washington University
R. Mundil, Berkeley Geochronology Center

M. R. Reid, Northern Arizona University
P. R. Renne, Berkeley Geochronology Center
S. S. Russell, Natural History Museum, London
A. K. Schmitt, UCLA
J. A. Vazquez, United States Geological Survey
R. F. Wendlandt, Colorado School of Mines
D. Weis, University of British Columbia
E. D. Young, UCLA

Graduate Advisors

Edward D. Young, UCLA
Richard F. Wendlandt, Colorado School of Mines (MSc.)

Mary R. Reid, Northern Arizona University

Postdoctoral Supervisors

Donald J. DePaolo, UC Berkeley & LBNL

Paul R. Renne, Berkeley Geochronology Center

Contact Information for Letters of Reference

Edward Young, Principal Investigator of Center for Astrobiology at UCLA
Professor of Isotope Geochemistry
University of California, Los Angeles
Department of Earth and Space Sciences
Tel. (310) 267-4930
Email: eyoung@ess.ucla.edu

Donald DePaolo, Dir. of Earth Sciences LBNL and the Center for Isotope Geochemistry
Professor of Geochemistry
University of California, Berkeley
Department of Earth and Planetary Science
Tel. (510) 643-5064
Email: depaolo@eps.berkeley.edu

Paul Renne, Director of Berkeley Geochronology Center
Professor of Geology
University of California, Berkeley
Department of Earth and Planetary Science
Tel. (510) 643-9200
Email: prenne@bgc.org

Kevin McKeegan, Director of NSF/UCLA National Ion Microprobe Facility; Co-Investigator on NASA Discovery missions Genesis and Stardust
Professor of Cosmochemistry
University of California, Los Angeles
Department of Earth and Space Sciences
Tel. (310) 825-3580
Email: kdm@ess.ucla.edu

Craig Manning, Chair of Earth and Space Sciences
Professor of Geochemistry
University of California, Los Angeles
Department of Earth and Space Sciences
Tel. (310) 206-3290
Email: manning@ess.ucla.edu
