

Carolyn A. Crow

Geological Sciences Department • University of Colorado, Boulder
UCB 339 • Boulder, CO 80309-0399
Phone: (303) 492 - 5014 • Email: carolyn.crow@colorado.edu

Research Interests

Investigating the evolution of terrestrial planet crusts through analyses of planetary materials.
Understanding the influences of the space environment and impact bombardment on mineral structures and geochemical signatures recorded in samples from Moon, Mars, Earth, and other planetary bodies.

Education

Ph. D.	Geochemistry, University of California, Los Angeles Dissertation: “The Early Lunar Magmatic and Impact Histories Recorded in Apollo Zircons”	2015
M. S.	Geochemistry, University of California, Los Angeles	2012
B. S.	Astronomy, University of Maryland	2008

Professional Experience

Assistant Professor <i>University of Colorado Boulder</i>	2020 - Present
Research Associate <i>University of Colorado Boulder</i>	2018 - 2020
Postdoctoral Research Staff Member <i>Lawrence Livermore National Laboratory (Noble Gas Lab, NanoSIMS Laboratory)</i>	2015 - 2017
Graduate Research Assistant <i>University of California, Los Angeles (SIMS Laboratory)</i>	2011 - 2015
Research Assistant <i>Astronomy Department, University of Maryland</i>	2009 - 2010

Publications

Reimink J., Crow C., Moser D., Jacobsen B., Bauer A., and Chacko T. (2023) Quantifying the effect of late heavy bombardment on terrestrial zircons. *Earth and Planetary Science Letters*, 604, 118007.

Long T. et al. (2022) Constraining the formation and transportation of lunar impact glasses using the ages and chemical compositions of Chang’e-5 glass beads. *Science Advances* 8, eabq2542.

Che X., et al. (2021) Age and composition of the youngest basalts on the Moon returned by Chang’e-5. *Science*, 374, 887-890.

Anderson F. S., **Crow C. A.**, Levine J., and Whitaker T. J. (2020) Pb-Pb Dating of Terrestrial and Extraterrestrial Samples Using Resonance Ionization Mass Spectrometry. *Earth and Space Science*, 7, e2020EA001177.

Crow C. A., Crowther S. A., McKeegan K. D., Turner G., Busemann H., and Gilmour J. D. (2020) Xenon systematics of individual lunar zircons, a new window on the history of the lunar surface. *Geochimica et Cosmochimica Acta*, 286, 103-118.

Lyra W., Rice M., Adler-Belendez D., Jacobson N., Pantelic A., Garcia K., Cassara L. S., **Crow C.**, Hayne P., and Marlow J. (2020). Ad Astra Academy: Using Space Exploration to Promote Student Learning and Motivation in the City of God, Rio de Janeiro, Brazil.” *CAP Journal*, 27, 5-13.

Crow C. A., Moser D. E., and McKeegan K. D. (2019). Shock Metamorphic History of >4Ga Apollo 14 and 15 Zircons. *Meteoritics and Planetary Science*, 54, 181-201 (Accepted August 2018).

Cassata W. S., Cohen B. E., Marks D. F., Trappitsch R., **Crow C. A.,** and Wimpenny J. (2018). The chronology of Martian breccia NWA 7034 and implications for the formation of the Martian crustal dichotomy. *Science Advances*, 4, eaap8306.

Crow C. A., McKeegan K. D. and Moser D. E. (2017) Coordinated U-Pb Geochronology, Trace Elements, Ti-in-Zircon Thermometry and Microstructural Analyses of Apollo Zircons. *Geochimica et Cosmochimica Acta*, 202, 264-284.

McFadden L. A., Bastien F. A., Mutchler M., **Crow C. A.,** Weir H., Li J.-L. and Hamilton D. P. (2012) Search for Satellites of Vesta: Upper Limits on Their Size. *Icarus*, 220, 305-310.

Crow C. A., McFadden L. A., Robinson T., Meadows V., Livengood T. A., Hewagama T., Barry R. K., Deming L. D., Lisse C. M. and Wellnitz, D. (2011). Views from EPOXI: Colors in our Solar System as an Analog for Extrasolar Planets. *Astrophys. J.*, 729, 130-140.

Professional Activities and Service

ILPRCC-CERGP (International Lunar and Planetary Research Center of China-Chang'e Research Group)	2021 - Present
Extraterrestrial Materials Analysis Group (ExMAG)	2021t
<i>Lunar Subcommittee</i>	
Astromaterials Allocation Review Board (AARB)	2021 - Present
<i>Lunar Subcommittee</i>	
NASA Curation and Analysis Planning Team for Extraterrestrial Materials (CAPTEM) <i>Lunar Subcommittee</i>	2018 -2021
Manuscript Reviews	Multiple Years
<i>Geology, Geochimica et Cosmochimica Acta, Meteoritics and Planetary Science, Earth and Planetary Science Letters</i>	
NASA Review Panel Member & External Reviewer	2018, 2021

Awards

CU Boulder UROP Mentor of the Year (<i>Honorable Mention</i>)	2019
---	------

LLNL Postdoctoral Poster Award	2017
Meteoritical Society McKay Award	2015
Meteoritical Society Wiley-Blackwell Award	2014
NASA Earth and Space Sciences Fellowship	2012-2015
Lunar and Planetary Institute Career Development Award	2012
UCLA Departmental Teaching Award	2012

Recent Invited Talks

European Mineralogical Conference - <i>Keynote</i> <i>Virtual – Krakow, Poland</i>	<i>Aug 2021</i>
Southern Methodist University, Dept. of Earth Sciences – <i>Colloquium</i> <i>Virtual – Dalas, TX</i>	<i>March 2021</i>
Colorado State University, Dept. of Geological Sciences – <i>Colloquium</i> <i>Fort Collins, CO</i>	<i>May 2019</i>
Lunar and Planetary Institute – <i>LPI Seminar</i> <i>Houston, TX</i>	<i>April 2019</i>
University of Toronto, Department of Earth Sciences – <i>Colloquium</i> <i>Toronto, Canada</i>	<i>March 2019</i>
York University, ESSE Department – <i>Special Seminar</i> <i>Toronto, Canada</i>	<i>March 2019</i>
Southwest Research Institute - <i>Colloquium</i> <i>Boulder, CO</i>	<i>Oct. 2018</i>

Outreach and Engagement

Applied Science Education Program Featured Speaker <i>At the Society of Exploration Geophysicists Meeting 2021</i>	<i>September 2021</i>
Ad Astra Colorado (Current Program PI) <i>Supported by CU Faculty Outreach Grant</i>	<i>Fall 2021-Present</i>
GLEE (Great Lunar Expedition for Everyone) <i>Proposed mission by the Colorado Space Grant and CU Chair of Science Advisory Board</i>	<i>Fall 2019-Present</i>
Program Director & Curriculum Lead <i>Ad Astra Academy (adastra.world)</i>	<i>2015 - Present</i>
NASA Dawn Mission EPO Team Member	<i>2009 - 2010</i>

Mentoring

Graduate Students	Graduation Date
<i>Jennifer Davis (PhD)</i>	<i>Spring 2025</i>
<i>Amanda Alexander (PhD; De Jour Adviser)</i>	<i>Spring 2024</i>
<i>Sean Pomeroy (Masters)</i>	<i>Spring 2023</i>
<i>Lydia Pinkham (Masters; De Jour Adviser; Veteran)</i>	<i>Spring 2023</i>
<i>Helle Skjetne (PhD; Research/Academic Mentor)</i>	
Undergraduate Students	

Marcus Richards (Veteran)

TBD

Sean Pomeroy

Spring 2021

Anthony Green (Supported by CU Seed Grant; Veteran)

Spring 2021

Cynthia Tong (CU UROP grant recipient)

Spring 2020

Evan Tucker (CU UROP grant recipient)

Spring 2019

Teaching

Graduate Level: Cosmochemistry, Planetary Field Geology, Seminar on Planetary Analogs;
Instrumentation for Geochronology and Geochemistry

Undergraduate Level: Cosmochemistry; Search for Life in the Universe

Co-Lead of Interdepartmental Planetary Teaching Caucus (Fall 2021-Spring 2022)