BIDONG ZHANG, PHD

Department of Earth, Environmental and Planetary Sciences, Rice University
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EMPLOYMENT

Assistant Professor, *Rice University*..... 2024–
Assistant Researcher, *University of California, Los Angeles* 2023–2024
Postdoctoral Scholar, *University of California, Los Angeles*..... 2020–2023

EDUCATION

Ph.D. in Geology and Planetary Science, *University of Western Ontario*, London, Canada 2019
M.Sc. in Marine Geology, *University of Chinese Academy of Sciences*, Beijing 2015
Master's curriculum, *University of Science and Technology of China*, Hefei 2013
B.E. in Mineral Resource Engineering, *University of South China*, Hengyang..... 2012

PROFESSIONAL SERVICES

- **Associate Editor & Member of Nomenclature Committee,** The Meteoritical Society (2023–2028)
- **Extraterrestrial Materials Analysis Group (ExMAG)** - Lunar Subcommittee Member
- **Peer Reviewer:** *Nature*, *Geochimica et Cosmochimica Acta, Earth and Planetary Science Letters, Nature Geoscience, Journal of Geophysical Research: Planets, Meteoritics and Planetary Science, Communications Earth & Environment, Planetary and Space Science, Advances in Space Research, Spectrochimica Acta Part B: Atomic Spectroscopy*
- **Session Chair:** *The 2022 Annual Meeting of the Lunar Exploration Analysis Group, The 54th 55th and 56th Lunar and Planetary Science Conference, Goldschmidt 2025*
- **Proposal Reviewer**, **Panel Secretary**, and **Panelist**: *NASA, European Research Council*
- **Dwornik Judge**: *The 53rd and 54th Lunar and Planetary Science Conference*
- **McKay Judge** and **Travel Award Committee**: *The Annual Meetings of Meteoritical Society*

AWARDED GRANT FUNDING

$4,587,001 total funding (sole PI status)
In progress

- Principal Investigator, NASA Laboratory Analysis of Returned Samples

80NSSC26K0207, "*Developing Next-Generation Lunar Radiometric Dating by LA-MC-ICP-MS/MS*", $2,554,159, 2026-2030
- Principal Investigator, *NASA Solar System Workings 80NSSC25K7664*, "Constraining the Origin and Timescale of Lunar Mg-Suite Magmatism", $969,118, 2025–2027
- Principal Investigator, *NASA Apollo Next Generation Sample Analysis* 80NSSC23K1300 (now 80NSSC25K7597), "Evaluating Geochronologic Complexity and Impactor Diversity of Highland". $905,248, 2023–2027

Completed
- Principal Investigator, *NASA Emerging Worlds* 80NSSC23K0035, "Creation of a Public Archive of Iron Meteorite Compositional Data". $158,476, 2023–2025
- Postdoctoral Associate, *NASA* NNX17AE77G, "Compositions and Parent-Body Processes in Chondrites and Irons", 2022–2025

PEER-REVIEWED PUBLICATIONS

[22] Grewal D. S., Bhattacharjee S., **Zhang B.**, Nie N. X., & Miyazaki Y. (2025). Enrichment of moderately volatile elements in first-generation planetesimals of the inner Solar System. *Science Advances*, 11(6), eadq7848.
[21] Harrison T. M., **Zhang B. (co-first author)**, Parisi A., and Bell E. A. (2024) Discordancy across multiple isotopic systems in lunar impactites: Implications for dating basin-forming impacts and the Late Heavy Bombardment hypothesis. *Earth and Planetary Science Letters*, 118943.
[20] Warren, P. H., Isa, J., **Zhang, B.**, & Korotev, R. L. (2024). Plagioclase iron content variance: A complication for efforts to identify lunar terrains of extremely high plagioclase abundance. *Icarus*, 116144.
[19] **Zhang B.**, Chabot N.L. and Rubin A.E. (2024) Compositions of iron-meteorite parent bodies constrain the structure of the protoplanetary disk. *Proceedings of the National Academy of Sciences* 121, e2306995121.
[18] Grewal D., Nie N.X., **Zhang B.**, Izidoro A. and Asimow P.D. (2024) Accretion of the earliest inner solar system planetesimals beyond the water-snowline. *Nature Astronomy (2024)*: 1-8.
[17] **Zhang B**., Kerstin L.A., Rubin A.E., McKeegan K.D., Warren P.W., Mays J.L., Profeta L.R., Johansson A., Ni P., Young E.D., Kyte F.T., Liu M., Dunham E.T., Tang H., Peng J., Figueroa-Salazar J.D. (2023) The UCLA Cosmochemistry Database. *Scientific Data* 10, 874.
[16] Burbine T. H., Greenwood R. C., **Zhang B.** and Buchanan P. C (2023) How many Vesta-like bodies existed in the asteroid belt? *Meteoritics & Planetary Science* 59: 878-894.
[15] Greer J., **Zhang B.**, Isheim D., Seidman D.N., Bouvier A. and Heck P.R. (2023) 4.46 Ga lunar zircons anchor chronology of lunar magma ocean. *Geochemical Perspectives Letters* 27: 1-7.

[14] Pape J., **Zhang B.**, Spitzer F., Rubin A.E. and Kleine T. (2023) Isotopic constraints on genetic relationships among group IIIF iron meteorites, Fitzwater Pass, and the Zinder pallasite. *Meteoritics & Planetary Science* 4: 778-788.
[13] **Zhang B.**, Lin Y., Hao J., Schrader D.L., Wadhwa M., Korotev R.L., Hartmann W.K. and Bouvier A. (2023) SIMS U-Pb dating of micro-zircons in the lunar meteorites Dhofar 1528 and Dhofar 1627. *Meteoritics & Planetary* Science 58: 1540-1551.
[12] Rubin A.E. and **Zhang B.** (2022) Impact-induced devolatilization of four ungrouped ataxites and the origin of a silica glass spherule in ALHA77255. *Meteoritics & Planetary Science* 58, 85-97.
[11] **Zhang B.**, Chabot N.L. and Rubin A.E. (2022) Compositions of carbonaceous-type asteroidal cores in the early solar system. *Science Advances* 8*,* eabo5781.
[10] **Zhang B.**, Chabot N.L., Rubin A.E., Humayun M., Boesenberg J.S. and van Niekerk D. (2022) Chemical study of group IIIF iron meteorites and the potentially related pallasites Zinder and Northwest Africa 1911. *Geochimica et Cosmochimica Acta* 323, 202-219.
[9] Rubin A.E., **Zhang B.** and Chabot N.L. (2022) IVA iron meteorites as late-stage crystallization products affected by multiple collisional events. *Geochimica et Cosmochimica Acta* 331, 1-17.
[8] Chabot N.L. and **Zhang B.** (2021) A revised trapped melt model for iron meteorites applied to the IIIAB group. *Meteoritics & Planetary Science* 57, 200-227.
[7] **Zhang B.**, Lin Y., Moser D.E., Hao J., Zhang J., Liu Y., Barker I.R., Li Q., Shieh R.S. and Bouvier A. (2021) Radiogenic Pb mobilization induced by shock metamorphism of zircons in the Apollo 72255 Civet Cat norite clast. *Geochimica et Cosmochimica Acta* 302, 175-192.
[6] **Zhang B.**, Lin Y., Moser D.E., Warren P.H., Hao J., Barker I.R., Shieh R.S. and Bouvier A. (2021) Timing of lunar Mg-suite magmatism constrained by SIMS U-Pb dating of Apollo norite 78238. *Earth and Planetary Science Letter*s 569, 117046.
[5] **Zhang B.**, Lin Y., Moser D.E., Hao J., Shieh S.R. and Bouvier A. (2019) Imbrium origin for the zircons in Apollo 17 South Massif impact melt breccia 73155. *Journal of Geophysical Research - Planets* 124 (12), 3205-3218.
[4] **Zhang B.**, Shieh R.S., Withers A.C. and Bouvier A. (2018) Raman spectroscopy of shocked enstatite-rich meteorites. *Meteoritics & Planetary Science* 53: 2067-2077.
[3] **Zhang B.**, Pan M., Wu N. and Wu D. (2018) Distribution and isotopic composition of foraminifera at cold-seep Site 973-4 in the Dongsha area, northeastern South China Sea. *Journal of Asian Earth Sciences* 168: 145-154.
[2] **Zhang B.**, Wu N. and Wu D. (2015) Characteristics of sedimentary geochemistry and their response to cold-seep activities in Dongsha, the northern South China Sea. *Marine Geology Frontiers* 31: 14-27.
[1] Wu N., **Zhang B.** and Wu D. (2015) Fractionation mechanism and paleoceanographic applications of calcium isotopes in marine settings. *Advances in Earth Science* 30: 433-444.

CONFERENCE ABSTRACTS

*Mentee

[36] Cone K.A*. Cone, Trail D., Nakajima M., Erickson T.M., Garapić G., Mouser M., Bell E.A., Cintala M., **Zhang B.**, Chen T.W. and Roy S. (2026) Zircon, apatite, and whitlockite: an investigation into shock-metamorphosed microstructures. *The 57th Lunar and Planetary Science Conference*.

[35] Chen T. W.*, Zhao R., Zhu D., Timoner C., Bouvier A., and **Zhang B.** (2025) In situ Rb-Sr analyses of extraterrestrial materials: method development and applications to meteorites and lunar samples. *AGU Annual Meeting 2025*.

[34] **Zhang B.**, Chabot N.L. and Rubin A.E. (2025) Using iron meteorites to constrain the chemical and physical structures of the protoplanetary disk. Invited presentation at *GSA Connects 2025 Meeting*.

[33] **Zhang B.**, Warren P. H., Chen T. W. and Bell E. A. (2025) Searching for concordancy between the U-Pb and Ar-Ar Radiometric systems in various types of Apollo Impactites. Oral presentation at *GSA Connects 2025 Meeting*.

[32] Warren, P. H. and **Zhang B.** (2024) Petrologic investigation of four allegedly low-sodium plutonic norites from Apollo 15. *The 56th Lunar and Planetary Science Conference*.

[31] Pham E., Ni P., Zhang S., and **Zhang B.** (2024) An online iron-meteorite classification tool. *The 56th Lunar and Planetary Science Conference*.

[30] **Zhang B.**, Warren P. H., Erickson T. M., Prissel T. C., Osinski G. R., Bouvier A. and Bell E. A. (2026) Two distinct origins of the Apollo mg-suite rocks. Oral presentation at *The 56th Lunar and Planetary Science Conference*.

[29] Timoner C., Zhao R., Zhu D., **Zhang B.**, and Bouvier A. (2025) Asteroidal anorthosites: Tracking protoplanetary crust formation in theearly solar system. *The 86th Annual Meeting of the Meteoritical Society*.

[28] Warren P. H. Warren, **Zhang B.**, Isa J., and Korotev R. L. (2024) Diverse iron contents in lunar plagioclase, and implications for remote sensing of plagioclase abundance. *The 86th Annual Meeting of the Meteoritical Society*.

[27] Hu S., Anand M., Franchi I. A., Zhao X., **Zhang B.**, Bouvier A., Hao J. L., Yang W., Liu Y., Tang G. Q., Li Q. L., Agee C., Lin Y. T. (2024) Water rich phosphate from the unbrecciated basaltic eucrite Northwest Africa 15965. *The 86th Annual Meeting of the Meteoritical Society*.

[26] **Zhang B.**, Timoner C., Zhao R., Zhu D., and Bouvier (2024) In situ Rb-Sr geochronology using MC-ICP-MS/MS. Oral presentation at *Goldschmidt Conference*.

[25] **Zhang B.**, Harrison T. M., Parisi A., Bell E. A., Hodges K. V. and Mercer C. M. (2024) Discordancy across multiple isotopic systems in lunar impactites: Implications for dating basin-forming impacts and the Late Heavy Bombardment Hypothesis. Oral presentation at *The 55th Lunar and Planetary Science Conference (#2806)*.

[24] **Zhang B.**, Chabot N.L. and Rubin A.E. (2024) Compositions of iron-meteorite

parent bodies: Constraints on the structure of the protoplanetary disk. *The 55th Lunar and Planetary Science Conference (#2806)*.

[23] **Zhang B.**, Chabot N.L. and Rubin A.E. (2023) Compositions of asteroidal cores across the early Solar System. *Gordon Research Conference*.

[22] Harrison T. M., **Zhang B.**, Parisi A., Bell E. A., and Hodges K. V. (2023) A search for age concordancy in lunar sample 73217. *The 85th Annual Meeting of the Meteoritical Society*.

[21] **Zhang B.**, Warren P. H., Erickson T. M., McKeegan K. D. and Bell E. A. (2026) Evidence for possible impact origin of Apollo troctolitic anorthosite 76335 preserved in cryptic cubic zirconia. Oral presentation at *The 85th Annual Meeting of the Meteoritical Society*.

[20] Utas J. A., **Zhang B.** and Young E. D. (2023) A comparison of analytical methods for iron meteorites. *The 85th Annual Meeting of the Meteoritical Society*.

[19] **Zhang B.**, Chabot N.L. and Rubin A.E. (2023) Compositions of carbonaceous-type asteroidal cores in the early Solar System. Oral presentation at *the 54th Lunar and Planetary Science Conference (#2806)*.

[18] **Zhang B.**, Greer. J., Isheim D., Seidman D.N., Bouvier A. and Heck P.R. (2022) Atom probe tomography of a 4.45 Ga zircon supporting early crystallization of the lunar magma ocean. *The Apollo 17 ANGSA Workshop*.

[17] **Zhang B.**, Warren P.H., McKeegan K.D. and Bell E.A. (2022) Apollo impact melt breccia 73275 as an Imbrium ejectum into the Apollo 17 Serentatis landing site: Implications from sims U-Pb dating of micro-baddeleyites. Oral presentation at the *Annual Meeting of Lunar Exploration Analysis Group*.

[16] Pape J., **Zhang B.**, Spitzer F., Rubin A.E. and Kleine T. Tungsten and molybdenum isotopic constraints on the origin and chronology of IIIF iron meteorites. In *The 85th Annual Meeting of the Meteoritical Society*.

[15] **Zhang B.**, Warren P.H., McKeegan K.D., Young E.D., Rubin A.E., Lehnert K.A., Profeta L.A., Johansson A.K., Ji P., Figueroa-Salazar J.D. and Mays J.L. (2022) The UCLA Cosmochemistry Database. Flash talk at *Goldschmidt Conference*.

[14] **Zhang B.**, Warren P.H., Rubin A.E., Lehnert K.A., Profeta L.R., Johansson A.K., Ji P., Figueroa-Salazar J.D. and Mays J.L. (2022) The UCLA Cosmochemistry Database. Oral presentation at *General Assembly of the European Geosciences Union*.

[13] **Zhang B.**, Warren P.H., Rubin A.E., Lehnert K.A., Profeta L.R., Johansson A.K., Ji P., Figueroa-Salazar J.D. and Mays J.L. (2021) The UCLA Cosmochemistry Database. Poster at the *53rd Lunar and Planetary Science Conference*.

[12] **Zhang B.**, Chabot N.L. and Rubin A.E. (2021) Fractional crystallization modeling of carbonaceous-type iron meteorites. Oral presentation at *The 84th Annual Meeting of the Meteoritical Society*.

[11] Reger P.M., **Zhang B.**, Gannoun A.M., Regelous M., Agee C.B. and Bouvier A. (2021) Chronology of the unique angrite Northwest Africa 10463. In *The 84th Annual Meeting of the Meteoritical Society*.

[10] Greer J., **Zhang B.**, Isheim D., Seidman D.N., Bouvier A. and Heck P.R. (2021) Atom probe tomography of 4.45 Ga lunar zircon from the Apollo 17 Civet Cat Norite clast. In *The 84th Annual Meeting of the Meteoritical Society*.
[9] Rubin A.E. and **Zhang B.** (2021) The Nordheim Trio: IAB-an irons that experienced devolatilization and silicate vaporization. In *The 84th Annual Meeting of the Meteoritical Society*.
[8] Reger P.M., **Zhang B.**, Gannoun A.M., Regelous, M., Agee C.B. and Bouvier A. (2021) Chronology of the unique angrite meteorite Northwest Africa 10463 (2021) In the *Geological Association of Canada and Mineralogical Association of Canada (GAC-MAC) 2021 Joint Annual Meeting*.
[7] **Zhang B.**, Chabot N.L., Rubin A.E., Humayun M., Boesenberg J.S., and van Niekerk D. Chemical composition and fractional crystallization if IIIF iron meteorites. (2021) In the *52nd Lunar and Planetary Science Conference*.
[6] **Zhang B.**, Reger P.M., Gannoun A., Boyet M., Schrader D.L., Wadhwa M., Ferrière L. and Bouvier A. (2019) Pb-Pb chronometry of impact melt from lunar meteorite Oued Awlitis 001. Oral presentation at *The 82nd Annual Meeting of the Meteoritical Society*.
[5] Hu S., Anand M., Franchi I.A., Zhao X., Chan Q.H.S., **Zhang B.**, Bouvier A., Lin Y.T., Zhang J.C., Hao J.L., Yang W., Liu Y., Tang G.Q., Li Q.L. and Agee C. (2019) U-Pb dating, hydrogen and chlorine isotopic systematics of the whitlockite and apatite from the ungrouped achondrite Northwest Africa 11119. In *The 82nd Annual Meeting of the Meteoritical Society*.
[4] **Zhang B.**, Lin Y., Moser D.E., Shieh R.S. and Bouvier A. (2018) Imbrium zircon age for Apollo 73155 Serenitatis impact melt breccia: Implications for the lunar bombardment history. Oral presentation at *The First Billion Years: Bombardment Conference*.
[3] **Zhang B.**, Shieh R.S. and Bouvier A. (2017) Assessing shock levels of enstatite-rich meteorites by Raman spectroscopy. Oral presentation at *The 80th Annual Meeting of the Meteoritical Society* (Vol. 1987).
[2] Wu D., Pan M. and **Zhang B.** (2016) Foraminiferal assemblages and geochemistry characteristics in the Dongsha cold-seep activities area, northern South China Sea. In *Goldschmidt Conference* (#3441).
[1] Wu D., **Zhang B.** and Wu N. (2015) Carbon and oxygen isotopes of foraminifera response to climate changes in Dongsha area, the northern South China Sea. In *Goldschmidt Conference* (#3455).

INVITED TALKS

[8] October 2025 at the University of Louisiana, Laffayett. Title: Using Iron Meteorites to Constrain the Chemical and Physical Structures of the Protoplanetary Disk.
[7] February 2025 at UCLA SIMS Workshop. Title: In situ Rb-Sr geochronology using LA-MC-ICP-MS/MS.
[6] February 2025 at Caltech Cosmochemistry Reading Group. Title: Asteroidal cores and their constraints on the evolution of the protoplanetary disk.

[5] September 2024 at Institute of Geology and Geophysics, Chinese Academy of Sciences. Title: Advances in the geochronology of lunar magma ocean.
[4] June 2024 at Konkoly Observatory. Title: Compositions of iron-meteorite parent bodies constrain the structure of the protoplanetary disk.
[3] April 2024 at UCLA EEPS Research Seminar. Title: Using Iron Meteorites to Constrain the Evolution of the Protoplanetary Disk
[2] November 2023 at the University of Bayreuth. Title: Compositions of asteroidal cores across the early Solar System.
[1] February 2022 at Arizona State University. Title: Compositions of asteroidal cores in the early Solar System.

COURSES

EEPS 515 Cosmochemistry Seminar (Spring, 2025)
EEPS 417/617 Cosmochemistry and Meteoritics (Fall, 2025)
EEPS 418/618 Isotope Geochemistry (Spring 2026)

ADVISING / SUPERVISION / MENTORSHIP

Primary Advisor for
Tsai-Wei Chen, Postdoc (2025 - present)
Kim Cone, Postdoc (2025 - present)
Amelia Bettati, PhD student (2025 - present)
Aida Castelblanco, PhD student (2025 - present)
Neeraja Chinchalkar, Visiting postdoc (2025 - present)
Alissa Ferguson, undergraduate student (2025)
Noam Eber, High school intern (May 2025 – July 2025)

Qualifying Exam Committee Member for
Baibhav Srivastava, PhD student
Sanskruti Admane, PhD student

Thesis Committee Member for
Haolin Zhou (Now a postdoc at the University of Texas, Austin)
Tom Zhang, PhD student
Dian Ji, PhD student