

**MEENAKSHI WADHWA**  
**CURRICULUM VITAE**

DIRECTOR AND FOUNDATION PROFESSOR  
SCHOOL OF EARTH AND SPACE EXPLORATION  
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**BIOGRAPHICAL SUMMARY**

Meenakshi Wadhwa is a planetary scientist and isotope cosmochemist interested in the time scales and processes involved in the formation and evolution of the Solar System and planets. Her research group is known for developing novel methodologies for high precision isotope analyses and for the application of high resolution chronometers to understand: the time scales of accretion and differentiation of planetesimals and the terrestrial planets; the processes in the solar protoplanetary disk and on planetesimals; and the abundance and origin of water and other volatiles on rocky bodies in the Solar System. She received her doctorate from Washington University in St. Louis (1994) and was a postdoctoral researcher at the University of California at San Diego (1994-1995). She was subsequently Curator in the Department of Geology at the Field Museum in Chicago (1995-2006) before moving to Arizona State University (2006-present) where she is Professor in the School of Earth and Space Exploration. At ASU, she served as director of the Center for Meteorite Studies from 2006 till 2019. She currently serves as director of the School of Earth and Space Exploration (since 2019). She is a recipient of the J. Lawrence Smith medal of the National Academy of Sciences (2021), Fulbright-Nehru Academic and Professional Excellence Award (2015-2016), the Guggenheim Fellowship (2005-2006), and the Nier Prize of the Meteoritical Society (2000). She was awarded an American Council on Education Fellowship (2018-2019) and became a Fellow of the American Geophysical Union in 2019. She became a Geochemistry Fellow of the Geochemical Society and the European Association of Geochemistry in 2021. Asteroid 8356 has been named 8356 Wadhwa in recognition of her contributions to meteoritics and planetary science.

**EDUCATION**

Ph.D., Earth and Planetary Sciences, Washington University, St. Louis, 1994  
M.S., Center for Advanced Studies in Geology, Panjab University, 1989  
B.S., Panjab University, 1988; Major in Geology, minors in Physics and Chemistry

**ACADEMIC APPOINTMENTS**

Foundation Professor, School of Earth and Space Exploration, Arizona State University, Mar 2021 – present  
Professor, School of Earth and Space Exploration, Arizona State University, Oct 2006 – Mar 2021  
Visiting Scientist (sabbatical), Lunar and Planetary Institute, Houston, Jan – Jul 2013  
Visiting Faculty (sabbatical), Department of Earth, Environmental and Planetary Sciences, Rice University, Aug – Dec 2012  
Curator, Department of Geology, The Field Museum, Chicago, Mar 2005 – Sept 2006  
Visiting Scholar (sabbatical), Division of Geological and Planetary Sciences, California Institute of Technology, Pasadena, Dec 2005 – Mar 2006  
Lecturer and Senior Research Associate, Department of Geophysical Sciences, University of Chicago, Dec 2003 – Sept 2006  
Associate Curator, Department of Geology, The Field Museum, Chicago, Jul 1999 – Mar 2005  
Lecturer and Research Scientist, Department of Geophysical Sciences, University of Chicago, Jan 1997 – Dec 2003  
Assistant Curator, Department of Geology, The Field Museum, Chicago, Jun 1995 – Jun 1999  
Visiting Scholar, Department of Geophysical Sciences, University of Chicago, Jun 1995 – Dec 1996  
Postdoctoral Research Geochemist, Geosciences Research Division, University of California at San Diego, Jun 1994 – May 1995

**ADMINISTRATIVE LEADERSHIP EXPERIENCE**

Director, School of Earth and Space Exploration, Arizona State University, 2019 – present

Director, Center for Meteorite Studies, Arizona State University, 2006 – 2019  
American Council on Education Fellows Program, 2018 – 2019  
Higher Education Resource Services (HERS) Leadership Institute, University of Denver, June 2017  
President's Women-in-Leadership Council, ASU, 2015 – 2016  
Provost's Faculty Fellow, Office of Provost, ASU, 2013 – 2014

#### **HONORS AND AWARDS**

J. Lawrence Smith Medal, The National Academy of Sciences, 2021  
Geochemistry Fellow, Geochemical Society and European Association of Geochemistry, 2021  
Foundation Professor, Arizona State University, 2021  
Fellow, American Geophysical Union, 2019  
American Council on Education Fellowship, 2018-2019  
Shoemaker Lecturer, American Geophysical Union Fall Meeting, 2016  
Fulbright-Nehru Academic and Professional Excellence Award, 2015-2016  
Visiting Scientist, Lunar and Planetary Institute, 2013  
Fellow, Explorers Club, 2012  
Fellow, Wings WorldQuest, 2007  
Fellow, Meteoritical Society, 2006  
Guggenheim Fellowship, 2005-2006  
Wings WorldQuest Women of Discovery Award (Air and Space), 2003  
Nier Prize of the Meteoritical Society, 2000  
Asteroid 8356 named (8356) *Wadhwa* by International Astronomical Union, 1999  
Antarctica Service Medal, 1993 and 2013  
McDonnell Center Graduate Fellowship, 1990-1992  
University Fellowship, Washington University, 1989-1990  
University Grants Commission Fellowship, Panjab University, 1988-1989

#### **PROFESSIONAL SOCIETIES**

American Association for the Advancement of Science  
American Geophysical Union  
Geochemical Society  
Meteoritical Society  
Sigma Xi  
The Explorers Club

#### **PROFESSIONAL LEADERSHIP AND SERVICE (LAST 10 YEARS)**

Member, Academic Program Review Committee, School of Earth and Atmospheric Sciences, Georgia Institute of Technology, 2021  
Member, Academic Program Review Committee, Department of Earth and Planetary Sciences, University of New Mexico, 2021  
Past-President, The Meteoritical Society, 2021-2022  
Member, NASA-ESA Mars Sample Return Caching Strategy Steering Committee, 2020-present  
Member, NASA-ESA Mars Sample Planning Group 2 (MSPG-2), 2020-present  
Member, NASA Advisory Council, 2018 – present  
Chair, NASA Advisory Council Science Committee, 2018 – present (member, 2017 – 2018)  
Member, Editorial Board for *Scientific Reports*, a Nature Research journal, 2018 – present  
Member, Initial Analysis Team for Chemistry, JAXA's Hayabusa2 sample return mission to asteroid Ryugu, 2018 – present  
Mentor, Brooke Owens Fellowship Program, 2016 – present  
Member, The National Academies of Sciences, Engineering, and Medicine, Intelligence Science and Technology Experts Group (ISTEG), 2015 – present  
Member, NASA Mars Sample Return Independent Review Board, 2020  
President, The Meteoritical Society, 2019-2020  
Member, Review panel for NASA Science Mission Directorate Research and Analysis program, 2019  
Member, NASA-ESA Mars Sample Planning Group (MSPG), 2018 – 2019  
Member, AGU Robert Cowen Award for Sustained Achievement in Science Journalism selection committee, 2017 – 2019

Member, Astronaut Scholarship Foundation's Neil Armstrong Award of Excellence selection committee, 2017 – 2019

Member, International Mars Sample Return Objectives and Samples Team (iMOST), 2018

Convener, Workshop on Role of Sample Return in Addressing Major Scientific Questions in Planetary Sciences, International Space Science Institute, Bern, Switzerland, 2018

Vice-President, Meteoritical Society, 2017 – 2018

Member, The National Academies of Sciences, Engineering, and Medicine, Space Studies Board Executive Committee, 2016 – 2017

Member, The National Academies of Sciences, Engineering, and Medicine, Space Studies Board, 2012 – 2017

Member, NASA Advisory Council's Planetary Protection Subcommittee, 2015 – 2016

Member, Review panels for NASA Science Mission Directorate Research and Analysis programs, 2015 – 2016

Member, AGU David Perlman Award for Excellence in Science Journalism selection committee, 2015 – 2016

Member, Elements Magazine Advisory Board, 2009 – 2016

Member, Ad hoc panel of experts (Planetary Protection) convened by The National Academies NRC, 2014 – 2015

Member, The National Academies NRC Committee on the Assessment of NASA Science Mission Directorate 2014 Science Plan, 2013

Chair, Audit Committee of the Meteoritical Society, 2013; member, 2011 – 2013

Co-Convener, Lunar Highlands Workshop, 2012

Chair, NASA Curation and Analysis Planning Team for Extraterrestrial Materials (CAPTEM), 2009 – 2012

Member, Planetary Science Subcommittee of the NASA Advisory Council, 2009 – 2012

Theme Chair (Cosmochemistry, Planet Formation), Goldschmidt Conference, 2011

Member, Organizing Committee, Workshop on Formation of the First Solids in the Solar System, 2011

Invited Nominator, MacArthur Foundation Fellows Program, 2011, 2005

Invited External Member, Faculty Search Committee, ETH Zurich, 2010 – 2011

#### **DEPARTMENT AND UNIVERSITY SERVICE**

Chair, Space Strategy Committee, ASU, 2021 (member, 2020-present)

Member, Search Committee for Provost, ASU, 2020

Member, Faculty Women's Association Board, ASU, 2012 – present

Chair, Promotion and Tenure Committee, School of Earth and Space Exploration (SESE), Arizona State University (ASU), 2018 – 2019; member, 2016 – 2019

Member, Exploration Postdoctoral Fellowship evaluation committee, SESE, ASU, 2019

Member, Origins Project Internal Advisory Committee, ASU, 2013 – 2018

Member, Senators Council, College of Liberal Arts and Sciences, ASU, 2014 – 2018

Member, Search Committee for Small Satellites faculty member, SESE, ASU, 2016 – 2017

Member, President's Women-in-Leadership Council, ASU, 2015 – 2016

Member, Regent's Professors selection committee, ASU, 2015 – 2016

Member, Exploration Postdoctoral Fellowship evaluation committee, SESE, ASU, 2015

Member, Search Committee for Electron Microprobe Lab Manager, Center for Solid State Science, ASU, 2015

Member, Search Committee for Planetary Science faculty member, SESE, ASU, 2014 – 2015

Member, Search Committee for Provost, ASU, 2013

Co-Chair, International Student Experience Strategic Plan Committee, ASU, 2013

Member, Promotion and Tenure Committee, SESE, ASU, 2007 – 2011

Member, Undergraduate and Graduate Curriculum Committee, SESE, ASU, 2008 – 2009

Member, Graduate Qualification Requirements (Ad Hoc) Committee, SESE, ASU, 2007 – 2008

Member, Interdisciplinary Science and Technology Building-4 Planning (Ad Hoc) Committee, SESE, ASU, 2007 – 2008

Member, Search Committee for the Dean of the Sandra Day O'Connor School of Law, ASU, 2007 – 2008

Member, Graduate Recruitment Committee, SESE, ASU, 2007

#### **FEDERAL GRANTS**

Principal Investigator, NASA Science Activation Integration Program, \$4,984,729 (1/1/2021-12/31/2025)

Principal Investigator, NASA Solar System Workings Program, \$446,573 (1/1/21-12/31/23)

Principal Investigator, NASA Emerging Worlds Program, \$1,953,008 (including Planetary Major Equipment funds) (7/1/15-6/30/21)

Principal Investigator, NASA Solar System Workings Program, \$444,408 (1/1/17-12/31/21)

Principal Investigator, NASA Earth and Space Science Fellowship (S. Ray), \$122,682 (9/1/18-8/31/21)

Principal Investigator, NASA Future Investigators in Earth and Space Science and Technology (Z. Torrano), \$40,795 (9/1/19-8/31/20)

Principal Investigator, NASA Earth and Space Science Fellowship (D. Dunlap), \$74,431 (9/1/17-8/31/20)

Principal Investigator, NASA Earth and Space Science Fellowship (E. Dunham), \$104,226 (9/1/16-8/31/20)

Co-Investigator, NASA Science Education CAN (PI: A. Anbar), \$10,183,479 (1/21/2016-1/20/2021)

Co-Investigator, NASA Nexus for Exoplanet System Science (PI: S. Desch), \$6,097,436 (12/31/2014-12/30/2019)

Principal Investigator, NASA Lunar Advanced Science & Exploration Research Program, \$122,659 (9/3/14-9/4/17)

Principal Investigator, NASA Earth and Space Science Fellowship (P. Mane), \$90,000 (9/1/13-8/31/16)

Principal Investigator, NASA Cosmochemistry Program, \$1,060,651 (6/23/11-6/22/16)

Principal Investigator, NASA Origins of Solar Systems Program, \$318,140 (6/22/11-6/21/15)

Co-Investigator, NASA Lunar Advanced Science & Exploration Research Program (PI: A. Bouvier), \$18,511 (5/5/12-9/2/14)

Principal Investigator, NASA Earth and Space Science Fellowship (C. Williams), \$60,000 (9/1/12-8/31/14)

Co-Investigator, NASA Education and Outreach in Earth & Space Science (PI: A. Anbar), \$302,377 (4/6/11-4/5/14)

Co-Investigator, NASA Astrobiology Institute (PI: A. Anbar), \$7,008,810 (1/15/09-1/14/14)

Principal Investigator, NASA JPL subcontract, \$16,954 (6/27/13-9/29/13)

Co-Principle Investigator, NSF Major Research Instrumentation (PI: P. Williams), \$3,267,586 (1/1/10-12/31/2012)

Principal Investigator, NASA Earth and Space Science Fellowship, \$30,000 (L. Spivak-Birndorf) (9/1/11-8/31/12)

Principal Investigator, NASA Earth and Space Science Fellowship, \$89,570 (M. Sanborn) (9/1/09-8/31/12)

Co-Investigator, NASA Mars Fundamental Research Program (PI: D. Bell), \$315,497 (4/24/08-4/23/12)

Principal Investigator, NASA Cosmochemistry Program, \$1,245,000 (including Planetary Major Equipment funds) (4/1/08-3/31/12)

Principal Investigator, NASA Earth and Space Science Fellowship, \$30,000 (G. Brennecka) (9/1/10-8/31/11)

Principal Investigator, NASA Origins of Solar Systems Program, \$211,677 (1/8/07-5/7/10)

Principal Investigator, NASA Discovery Program (Genesis mission) subcontract through JSC, \$342,000 (8/1/05-9/30/09)

Principal Investigator, NASA Cosmochemistry Program, \$426,000 (5/1/05-3/31/08)

Co-Principal Investigator, NSF Major Research Instrumentation Program (PI: R. Williams), \$494,295 (9/1/03-8/31/06)

Principal Investigator, NASA Cosmochemistry Program, \$345,000 (5/1/02-4/30/05)

Principal Investigator, NSF EAR Geochemistry and Petrology Program, \$130,356 (1/1/98-6/30/03)

Principal Investigator, NASA Cosmochemistry Program, \$225,000 (4/1/99-3/31/02)

Principal Investigator, NSF Major Research Instrumentation Program, \$255,000 (9/15/98-9/14/01)

Principal Investigator, NASA Cosmochemistry Program (major equipment grant), \$255,000 (4/15/98-10/14/99)

Co-Principal Investigator, NSF Major Research Instrumentation Program (PI: M. Humayun), \$410,000 (9/1/97-8/31/99)

Principal Investigator, NASA Cosmochemistry Program, \$80,000 (4/1/97-3/31/99)

#### **TEACHING EXPERIENCE**

GLG598/485 & CHM598/485 Cosmochemistry and Meteorites, ASU, Spring 2021, Fall 2018, Fall 2016, Spring 2014, 2012, 2010, Fall 2007

SES591/494 Sample Return Missions, Spring 2018

GLG598/490 Analytical Instruments, ASU, Spring 2017, 2011, Fall 2008

GLG581/494 & CHM598/494 Isotope Geochemistry (co-taught with A. Anbar), ASU, Spring 2015

GLG598/494 Trace Element Geochemistry (co-taught with R. Hervig), ASU, Fall 2014

GeoSci220 Magmatism in the Early Solar System, University of Chicago, Spring Quarter, scheduled alternate years, 1998-2006

PhySci110 Environmental History of Earth, University of Chicago, Winter Quarter, 2001

## **ACADEMIC MENTORING**

### **Graduate Student Advisees**

Linnea McCann (doctoral student, ASU, 2018 – present)

Soumya Ray (doctoral student, ASU, 2016 – present)

Zachary Torrano (ASU, PhD 2020, currently Carnegie Postdoctoral Fellow at Carnegie's Earth and Planets Laboratory in Washington, DC)

Emilie Dunham (ASU, PhD 2020, currently Heising Simons Foundation 51Pegasi b Fellow at the University of California at Los Angeles, Los Angeles, CA)

Daniel Dunlap (ASU, PhD 2020, currently postdoctoral researcher, NASA Johnson Space Center, Houston, TX)

Gabriel Franco (ASU, MNS 2019)

Prajakta Mane (ASU, PhD 2016, currently postdoctoral researcher, NASA Johnson Space Center and Lunar and Planetary Institute, Houston, TX)

Kera Tucker (ASU, MS 2015; currently Systems Engineer at Lockheed Martin, Denver, CO)

Curtis Williams (ASU, PhD 2014; currently Program Director (Petrology and Geochemistry), National Science Foundation, Washington DC)

Matthew Sanborn (ASU, PhD 2012; currently Staff Scientist, Los Alamos National Laboratory, Los Alamos, NM)

Lev Spivak-Birndorf (ASU, PhD 2012; currently Founder and Research Scientist at PSI Labs, Ann Arbor, MI)

Greg Brennecka (ASU, PhD 2011; currently Staff Scientist, Lawrence Livermore National Laboratory, Livermore, CA)

### **Postdoctoral and Other Advisees**

Jemma Davidson (Assistant Research Scientist, Center for Meteorite Studies, ASU, 2018 – present)

Vinai Rai (Associate Research Scientist and Laboratory Manager, Center for Meteorite Studies, ASU, 2016 – present)

Rebekah Hines (Research Professional, Center for Meteorite Studies, ASU, 2011 – present)

Stephen Romaniello (Assistant Research Scientist, 25% appointment in Center for Meteorite Studies, ASU, 2014 – 2019; Assistant Research Scientist and Laboratory Manager, Center for Meteorite Studies, ASU, 2012 – 2014; currently Assistant Professor, University of Tennessee, Knoxville, TN)

Alice Stephant (Postdoctoral Researcher, Center for Meteorite Studies, ASU, 2015 – 2017; currently postdoctoral researcher, Open University, UK)

Julia Cartwright (Postdoctoral Researcher, Center for Meteorite Studies, ASU, 2014 – 2017; currently Assistant Professor, University of Alabama, Huntsville, AL)

Kate Sounders (Assistant Research Professor and Laboratory Manager, Center for Meteorite Studies, ASU, 2014 – 2015; currently Research Geologist, United States Geological Survey, Denver, CO)

Gregory Brennecka (Postdoctoral Researcher, Center for Meteorite Studies, ASU, 2011 – 2013; currently Staff Scientist, Lawrence Livermore National Laboratory, Livermore, CA)

Philip Janney (Associate Research Scientist and Laboratory Manager, Center for Meteorite Studies, ASU, 2006 – 2012; Laboratory Manager, The Field Museum, 2000 – 2006; currently Professor, University of Cape Town, South Africa)

Melissa Morris (SESE Exploration Postdoctoral Fellow co-advised with S. Desch, ASU, 2010 – 2011; currently Discipline Scientist/Program Officer, NASA Headquarters, Washington, DC)

Audrey Bouvier (Postdoctoral Researcher, Center for Meteorite Studies, ASU, 2007 – 2010; currently Research Scientist at Bayerisches Geoinstitut, University of Bayreuth, Bayreuth, Germany)

Fang Zhen Teng (Postdoctoral Researcher, The Field Museum, 2006 – 2007; currently Associate Professor, University of Washington, Seattle, WA)

Nicolas Dauphas (Postdoctoral Researcher, The Field Museum and University of Chicago, co-advised with A. M. Davis, 2002 – 2004; currently Professor, University of Chicago, Chicago, IL)

Nicole Foley (Postdoctoral Researcher, The Field Museum, 2002 – 2004)

### **Graduate Student Committees**

Chadlin Ostrander (ASU, PhD 2020)

Hannah Bercovici (ASU, MS 2020)  
Huawei Chen (ASU, PhD 2019)  
Feifei Zhang (ASU, PhD 2018)  
Cameron Mercer (ASU, PhD 2017)  
Jinping Hu (ASU, PhD 2016)  
Karen Rieck (ASU, PhD 2015)  
Stephen Romaniello (ASU, PhD 2012)  
Melissa Morris (ASU, PhD 2009)  
Nicolas Ouellette (ASU, PhD 2008)  
Karen Rieck (ASU, MS 2008)  
Liping Qin (U. Chicago, PhD 2007)  
David Cook (U. Chicago, PhD 2007)  
Agnes Markowski (ETH, Zurich, PhD 2006)

#### **Undergraduate Student Advisees**

Max Kulak (ASU, 2019-present)  
Ivy Ettenborough (ASU, 2019)  
Karen Leung (ASU, 2016)  
Elizabeth Dybal (ASU, 2014 – 2016)  
Ya-Jui Ku (National Taiwan University, 2014)  
Jasmine Parker (ASU, 2012 – 2013)  
Tyler Farina (ASU, 2012)  
Brian De Hoog (ASU, 2009 – 2012)  
Melissa Anderson (ASU, 2009)  
Michael Stuart (ASU, 2009)  
Ashley Dancer (ASU, 2008 – 2009)  
Jesse Hannah (ASU, 2008 – 2009)  
Ashley Stanfil (ASU, 2008)  
Susheel Koushik (ASU, 2007 – 2008)  
Melanie Channon (ASU, 2007)  
Elizabeth Meith (ASU 2007)  
Matthew Sanborn (ASU, 2007)  
Lev Spivak-Birndorf (U. Chicago, 2003 – 2005)  
Nicolas Beecher (U. Chicago, 2002)  
Josef Dufek (U. Chicago, 2001)  
Noel Heim (U. Chicago, 1999 – 2000)  
Shelley Erickson (Field Museum Intern, 1998 – 1999)  
Emily Lakdawalla (Field Museum Intern, 1998)

#### **Brooke Owens Fellowship Mentees**

Sanjana Tewathia (Georgia Institute of Technology, 2020)  
Kira Altman (University of Colorado at Boulder, 2019)  
Carson Brumley (University of Colorado at Boulder, 2018)  
Justine Walker (College of Wooster, 2017)

#### **Honors and Awards (As Mentor)**

NASA Future Investigators in Earth and Space Science and Technology, Zachary Torrano (as graduate student at ASU), 2019  
NASA Earth and Space Science Fellowship, Emilie Dunham (as graduate student at ASU), 2016, 2017, 2018, 2019  
NASA Earth and Space Science Fellowship, Soumya Ray (as graduate student at ASU), 2018, 2019, 2020  
Stephen E. Dworkin Award (Geological Society of America) for best poster presentation, Daniel Dunlap (as graduate student at ASU), 2018  
NASA Earth and Space Science Fellowship, Daniel Dunlap (as graduate student at ASU), 2017, 2018, 2019  
Wiley Award (The Meteoritical Society) for oral presentation, Daniel Dunlap (as graduate student at ASU), 2017  
Nier Prize (The Meteoritical Society), Greg Brennecka (for work conducted as a graduate student and postdoctoral researcher at ASU), 2016

Nier Prize (The Meteoritical Society), Audrey Bouvier (for work conducted as a postdoctoral researcher at ASU), 2016  
NASA Earth and Space Science Fellowship, Prajkta Mane (as graduate student at ASU), 2013, 2014  
NASA Earth and Space Science Fellowship, Curtis Williams (as graduate student at ASU), 2012, 2013  
NASA Earth and Space Science Fellowship, Lev Spivak-Birndorf (as graduate student at ASU), 2011  
NASA Earth and Space Science Fellowship, Greg Brenneka (as graduate student at ASU), 2010  
Nininger Meteorite Award, Greg Brenneka (as graduate student at ASU), 2010  
NASA Earth and Space Science Fellowship, Matthew Sanborn (as graduate student at ASU), 2009, 2010, 2011  
Brian Mason Award of the Meteoritical Society, Greg Brenneka (as graduate student at ASU), 2009  
Nier Prize (The Meteoritical Society), Nicolas Dauphas (for work conducted as a postdoctoral researcher at The Field Museum/University of Chicago), 2005

#### **INVITED LECTURES AND COLLOQUIA (LAST 10 YEARS)**

Department of Geology, University of Maryland, October 2020  
UCLA Meteorite Gallery Lecture Series, August 2020  
Baldwin Frontiers in Geology Lecture, Miami University, February 2020  
Department of Geology and Environmental Earth Science, Miami University, February 2020  
Department of Earth and Atmospheric Sciences, University of Houston, February 2020  
Department of Geological Sciences, University of North Carolina at Chapel Hill, February 2020  
Documentary Filmmakers Retreat, National Academies Science and Entertainment Exchange Program, October 2019  
Northrup Distinguished Lecture, Department of Earth and Planetary Sciences, University of New Mexico, April 2019  
Lunar and Planetary Laboratory, University of Arizona, April 2018  
Shoemaker Lecture, American Geophysical Union Fall Meeting, December 2016  
PLANEX Division, Physical Research Laboratory, Ahmedabad, India, April 2016  
Geological Survey of India, Kolkata, India, April 2016  
Department of Geology and Geophysics, Indian Institute of Technology, Kharagpur, India, April 2016  
Department of Earth Sciences, Indian Institute of Technology, Kanpur, India, March 2016  
Department of Geology, University of Delhi, Delhi, India, March 2016  
Department of Physics, Panjab University, Chandigarh, India, February 2016  
Department of Geology, Panjab University, Chandigarh, India, February 2016  
Prof. Sukheswala Memorial – TERRA Lecture, St. Xavier's College, Mumbai, India, February 2016  
Indian Institute of Technology Bombay, Mumbai, India, February 2016  
Indian Institute of Science Education and Research, Pune, India, February 2016  
Physical Research Laboratory, Ahmedabad, India, January 2016  
25<sup>th</sup> Anniversary Invited Lecture, Planetary Chemistry Theme, Annual Goldschmidt Conference, Prague, July 2015  
Shoemaker Lecture, Beyond Center, Arizona State University, November 2014  
Lamont Doherty Earth Observatory, Columbia University, October 2014  
Department of Earth and Planetary Science, American Museum of Natural History, October 2014  
Annual Goldschmidt Conference, Sacramento, June 2014  
Department of Earth and Atmospheric Sciences, MIT, May 2013  
Department of Geophysical Sciences, University of Chicago, April 2013  
Department of Geological Sciences, University of Tennessee, February 2013  
Department of Earth Science, Rice University, October 2012  
Workshop on the Mantle of Mars, Houston, TX, September 2012  
Nuclei in the Cosmos Conference, Cairns, Australia, August 2012  
Workshop on Formation of the First Solar System Solids, Kauai, Hawaii, November 2011  
International Primitive Body Exploration Working Group Workshop, Jet Propulsion Laboratory, Pasadena, CA, August 2011  
Department of Earth and Space Sciences, University of California at Los Angeles, March 2011

#### **MEDIA AND PUBLIC ENGAGEMENT**

Delivered numerous public talks; featured in news media (television, radio and print) outlets, including documentaries on the *Discovery Channel* (How the Universe Works), *History Channel* (The Universe);

How the Earth was Made), *PBS* (Nova ScienceNow), and *Science Channel* (Space's Deepest Secrets; Meteorite Men); and involved in the development of public outreach, educational programs and exhibits. Recent highlights include the following:  
 In "Fireball: Visitors from Darker Worlds" directed by Werner Herzog and Clive Oppenheimer, 2020  
 On CBS Sunday Morning, September 13, 2020  
 Oversight of the development, production and distribution of loanable classroom modules on "Origin of Meteorites" for K-12 and informal educators, 2008 – 2019  
 New Discoveries Lecture ("Exploring the Solar System Through Meteorites"), School of Earth and Space Exploration, October 2018  
 On NPR Science Friday, June 2018; <https://www.sciencefriday.com/segments/science-friday-presents-two-wrongs-dont-make-a-meteorite/>  
 On NPR Science Friday, November 2017; <https://www.sciencefriday.com/segments/a-space-rock-makes-an-interstellar-visit/>  
 TEDxASU: Innovation Worth Sharing, 2017; <https://www.youtube.com/watch?v=iukJJ2u0vlo>  
 Arizona State University KEDTalks: Conversations for the Curious, 2016; <https://www.youtube.com/watch?v=i-JmdMYOEII&t=43s>  
 On Australian Broadcasting Corporation's "The Science Show", May 2014; <http://www.abc.net.au/radionational/programs/scienceshow/meteorites-bring-the-history-of-the-solar-system-to-earth-and-m/5427388>  
 On NPR Science Friday, March 2013; <https://www.sciencefriday.com/segments/studying-rocks-found-on-earth-for-clues-about-space/>

## PUBLICATIONS

Total Citations (Google Scholar, January 27, 2021): 10901

h-index (Google Scholar, January 27, 2021): 53

i10-index (Google Scholar, January 27, 2021): 104

## PEER-REVIEWED ARTICLES

(<sup>†</sup>Students or postdoctoral researchers supervised by M. Wadhwa)

### Submitted/in review/in revision/in press

1. <sup>†</sup>Dunham E. T., Wadhwa M., Liu M.-C., Desch S. J., Hertwig A. T., Kita N., Fukuda K., <sup>†</sup>Davidson J., and Schrader D. Uniform <sup>10</sup>Be/<sup>9</sup>Be in chondritic refractory inclusions: Implications for molecular cloud origin of <sup>10</sup>Be and the Sun's birth environment. *Science Advances*, submitted.
2. Garvie A. J. L., Chi M., <sup>†</sup>Ray S., Domanik K., Wittmann A., and Wadhwa M. Carletonmooreite, Ni<sub>3</sub>Si, a new silicide from the Norton County aubrite meteorite. *American Mineralogist*, in press.
3. <sup>†</sup>Mane P., Wallace S., Bose M., Wallace P., Wadhwa M., Weber J., and Zega T. Earliest evidence of nebular shock waves recorded in calcium-aluminum-rich inclusions. *Earth and Planetary Science Letters*, submitted.
4. <sup>†</sup>Mane P., Bose M., Wadhwa M., and Defouilloy C. Protracted timescales for nebular processing of first-formed solids in the solar system. *Astrophysical Journal*, in revision.
5. <sup>†</sup>Sanborn M. and Wadhwa M. Trace element geochemistry of coarse-grained angrites from Northwest Africa: Implications for their petrogenesis on the angrite parent body. *Meteoritics and Planetary Science*, in press.
6. <sup>†</sup>Stephant A., Wadhwa M., Hervig R., Bose M., Zhao X., Barrett T.J., Anand M., and Franchi I.A. A deuterium-poor water reservoir in the asteroid 4 Vesta and the inner Solar System. *Geochimica Cosmochimica Acta*, in press.
7. <sup>†</sup>Torrano Z. A., Schrader D.L., <sup>†</sup>Davidson J., Greenwood R.C., <sup>†</sup>Dunlap D., and Wadhwa M. The relationship between CM and CO chondrites: Insights from combined analyses of titanium, chromium, and oxygen isotopes in CM, CO, and ungrouped chondrites. *Geochimica Cosmochimica Acta*, in revision.

### 2020

1. <sup>†</sup>Davidson J., Wadhwa M., Hervig R. L., and <sup>†</sup>Stephant A. (2020) Water on Mars: Insights from apatite in regolith breccia Northwest Africa 7034. *Earth and Planetary Science Letters* 552, 116597.
2. <sup>†</sup>Dunham E.T., Wadhwa M., Desch S.J., and Hervig R.L. (2020) Best practices for determination of initial <sup>10</sup>Be/<sup>9</sup>Be in early solar system materials by secondary ion mass spectrometry. *Geostandards and Geoanalytical Research* 44, 695-710.
3. Fukuda K., Beard B.L., <sup>†</sup>Dunlap D.R., Spicuzza M.J., Fournelle J.H., Wadhwa M., and Kita N. (2020)



Magnesium isotope analysis of olivine and pyroxene by SIMS: Evaluation of matrix effects. *Chemical Geology* 540, 119482.

4. Jurewicz A.J.G., Reick K.D., Hervig R., Burnett D.S., Wadhwa M., Olinger C.T., Wiens R., Laming J. M., Guan Y., Huss G.R., Reisenfeld D.B., and Williams P. (2020) Magnesium isotopes of the bulk solar wind from Genesis diamond-like carbon films. *Meteoritics and Planetary Science* 55, 352-375.
5. <sup>†</sup>Torrano Z. A., <sup>†</sup>Davidson J., and Wadhwa M. (2020) A reclassification of Northwest Africa 299 from CV3 to CK3.8 chondrite. *Meteoritics and Planetary Science* 55, 2539-2550.
6. Wadhwa M., Schrader D., and McCoy T. (2020) Advances in cosmochemistry enabled by Antarctic meteorites. *Annual Review of Earth and Planetary Sciences* 48, 233-258.

#### 2019

7. <sup>†</sup>Dunham E., Balta J. B., Wadhwa M., and McSween H. Y., Jr. (2019) Petrology and geochemistry of olivine-phyric shergottites LAR 12095 and LAR 12240: Implications for their petrogenetic history on Mars. *Meteoritics and Planetary Science* 54, 811-835.
8. Shollenberger Q. A., Wittke A., Render J., <sup>†</sup>Mane P., Schuth S., Weyer S., Gussone N., Wadhwa M., and Brenneka G. (2019) Combined mass-dependent and nucleosynthetic isotope variations in refractory inclusions and their mineral separates to determine their original Fe isotope compositions. *Geochimica Cosmochimica Acta* 263, 215-234.
9. <sup>†</sup>Torrano Z. A., Brenneka G. A., <sup>†</sup>Williams C. D., <sup>†</sup>Romaniello S. J., <sup>†</sup>Rai V. K., and Wadhwa M. (2019) Titanium isotope signatures of calcium-aluminum-rich inclusions from CV and CK chondrites: Implications for early Solar System reservoirs and mixing. *Geochimica Cosmochimica Acta* 263, 13-30.

#### 2018

10. Srinivasan P., <sup>†</sup>Dunlap D. R., Agee C. B., Wadhwa M., Coleff D., Ziegler K., Zeigler R., and McCubbin F. M. (2018) Earliest dated silica-rich volcanism in the Solar System. *Nature Communications* 9, 3036.
11. <sup>†</sup>Stephant A., Garvie L. A. J., Mane P., Hervig R., and Wadhwa M. (2018) Terrestrial exposure of a fresh martian meteorite causes rapid changes in hydrogen isotopes and concentrations. *Scientific Reports Scientific Reports* 8, DOI:10.1038/s41598-018-30807-w.

#### 2017

12. Balta J. B., <sup>†</sup>Sanborn M. E., Mayne R. G., Wadhwa M., McSween H. Y., Jr., and Crossley S. D. (2017) Northwest Africa 5790: A previously unsampled portion of the upper part of the nakhlites pile. *Meteoritics and Planetary Science* 52, 36-59.
13. Brenneka G. A., Borg L. E., Romaniello S. J., Souders A. K., Shollenberger Q. R., Marks N. E., and Wadhwa M. (2017) A renewed search for short-lived <sup>126</sup>Sn in the early solar system: Hydride generation MC-ICPMS for high sensitivity Te isotopic analysis. *Geochimica Cosmochimica Acta* 201, 331-344.
14. Kleine T. and Wadhwa M. (2017) Chronology of planetesimal differentiation. *Planetesimals: Early Differentiation and Consequences for Planets* (Eds. Elkins-Tanton L. T. and Weiss B. P.), Cambridge Univ. Press, 224-245.
15. Mendybaev R., <sup>†</sup>Williams C. D., Spicuzza M. J., Richter F. M., Valley J. W., and Wadhwa M. (2017) Thermal and chemical evolution of the early Solar System materials as recorded by FUN CAIs: Part II – Laboratory evaporation of potential CMS-1 precursor material. *Geochimica Cosmochimica Acta* 201, 49-64.
16. <sup>†</sup>Williams C. D., Ushikubo T., Mendybaev R. A., <sup>†</sup>Janney P. E., Kita N. T., Bullock E. S., <sup>†</sup>Hines R. R., MacPherson G. J., Hervig R. L., Richter F. M., and Wadhwa M. (2017) Thermal and chemical evolution of the early Solar System materials as recorded by FUN CAIs: Part I – Petrology, mineral chemistry, and isotopic composition of Allende FUN CAI CMS-1. *Geochimica Cosmochimica Acta* 201, 25-48.

#### 2016

17. <sup>†</sup>Mane P., Hervig R., Wadhwa M., Garvie L. A. J., Balta J. B., and McSween H. Y., Jr. (2016) Hydrogen isotopic composition of the martian mantle inferred from the newest martian meteorite fall Tissint. *Meteoritics and Planetary Science* 51, 2073-2091.
18. <sup>†</sup>Williams C. D., <sup>†</sup>Janney P. E., <sup>†</sup>Hines R. R., and Wadhwa M. (2016) Precise titanium isotope compositions of refractory inclusions in the Allende CV3 chondrite by LA-MC-ICPMS. *Chemical Geology* 436, 1-10.

#### 2015

19. Balta J. B., <sup>†</sup>Sanborn M., Udry A., McSween H. Y., Jr., and Wadhwa M. (2015) Petrology and trace-element geochemistry of Tissint, the newest shergottite fall. *Meteoritics and Planetary Science* 50, 63-85.
  20. Davis A. M., Richter F. M., Mendybaev R. A., <sup>†</sup>Janney P. E., Wadhwa M., and McKeegan K. D. (2015) Isotopic mass fractionation laws for magnesium and their effects on <sup>26</sup>Al-<sup>26</sup>Mg systematics in Solar System materials. *Geochimica Cosmochimica Acta* 158, 245-261.
  21. Ding S., Dasgupta R., Lee C. T., and Wadhwa M. (2015) New bulk sulfur measurements of martian meteorites and modeling the fate of sulfur during melting and crystallization – implications for sulfur transfer from martian mantle to crust-atmosphere system. *Earth and Planetary Science Letters* 409, 157-167.
  22. Goldmann A., <sup>†</sup>Brennecka G., Noordmann J., Weyer S., and Wadhwa M. (2015) Uranium isotope composition of the Earth and Solar System. *Geochimica Cosmochimica Acta* 148, 145-158.
  23. <sup>†</sup>Sanborn M., Carlson R., and Wadhwa M. (2015) <sup>147,146</sup>Sm-<sup>143,142</sup>Nd, <sup>176</sup>Lu-<sup>176</sup>Hf, and <sup>87</sup>Rb-<sup>87</sup>Sr systematics in the angrites: Implications for chronology and processes on the angrite parent body. *Geochimica Cosmochimica Acta* 171, 80-99.
  24. <sup>†</sup>Spivak-Birndorf L., <sup>†</sup>Bouvier A., Benedix G. K., Hammond S., Brennecka G., Howard K., Rogers N., Wadhwa M., Bland P. A., Spurný P., and Towner M. C. (2015) Geochemistry and chronology of the Bunburra Rockhole ungrouped achondrite. *Meteoritics and Planetary Science* 50, 958-975.
- 2014**
25. <sup>†</sup>Brennecka G. A., Borg L. E. and Wadhwa M. (2014) Insights into the martian mantle: The age and isotopics of the meteorite fall Tissint. *Meteoritics and Planetary Science* 49, 412-418.
  26. Chaumard N., Devouard B., <sup>†</sup>Bouvier A., and Wadhwa M. (2014) Metamorphosed calcium-aluminum inclusions in CK carbonaceous chondrites. *Meteoritics and Planetary Science* 49, 419-452.
  27. Wadhwa M. (2014) Solar System time scales from long-lived radioisotopes in meteorites and planetary materials. *Treatise on Geochemistry 2<sup>nd</sup> Edition Vol. 1: Meteorites, Comets, and Planets* (Vol. Ed. A. M. Davis; Eds. in Chief H. D. Holland and K. K. Turekian), 397-418.
- 2013**
28. Balta J. B., <sup>†</sup>Sanborn M., McSween H. Y., Jr., and Wadhwa M. (2013) Magmatic history and parental melt composition of olivine-phyric shergottite LAR 06319: Importance of magmatic degassing and olivine antecrysts in Martian magmatism. *Meteoritics and Planetary Science* 48, 1359-1382.
  29. <sup>†</sup>Bouvier A., Wadhwa M., Simon S., and Grossman L. (2013) Magnesium isotopic fractionation in chondrules from the Murchison and Murray CM2 carbonaceous chondrites. *Meteoritics and Planetary Science* 48, 339-353.
  30. <sup>†</sup>Brennecka G. A., Borg L. E. and Wadhwa M. (2013) Evidence of supernova injection into the solar nebula and the decoupling of r-process nucleosynthesis. *Proceedings of the National Academy of Sciences* 110, 17241-17246.
- 2012**
31. <sup>†</sup>Brennecka G. A. and Wadhwa M. (2012) Uranium isotope compositions of the basaltic angrite meteorites and the chronological implications for the early Solar System. *Proceedings of the National Academy of Sciences* 109, 9221-9222.
- 2011**
32. <sup>†</sup>Janney P. E., Richter F. M., Mendybaev R. A., Wadhwa M., Georg R. B., Watson E. B., and <sup>†</sup>Hines R. R. (2011) Matrix effects in the analysis of Mg and Si isotope ratios in natural and synthetic glasses by laser ablation-multicollector ICPMS: A comparison of single- and double-focusing mass spectrometers. *Chemical Geology* 281, 26-40.
  33. <sup>†</sup>Bouvier A., <sup>†</sup>Spivak-Birndorf L., <sup>†</sup>Brennecka G. A., and Wadhwa M. (2011) New constraints on early Solar System chronology from Al-Mg and U-Pb isotope systematics in the unique basaltic achondrite Northwest Africa 2976. *Geochimica Cosmochimica Acta* 75, 5310-5323.
- 2010**
34. <sup>†</sup>Bouvier A. and Wadhwa M. (2010) The age of the Solar System redefined by the oldest Pb-Pb age of a meteoritic inclusion. *Nature Geoscience* 3, 637-641.
  35. <sup>†</sup>Brennecka G. A., Weyer S., Wadhwa M., <sup>†</sup>Janney P. E., Zipfel J., and Anbar A. D. (2010) <sup>238</sup>U/<sup>235</sup>U variations in meteorites: Extant <sup>247</sup>Cm and implications for Pb-Pb dating. *Science* 327, 449-451.
  36. MacPherson G., Bullock E. S., <sup>†</sup>Janney P. E., Kita N., Ushikubo T., Davis A. M., Wadhwa M., and Krot A. N. (2010) Early solar nebula condensates with canonical, not supracanonical, initial <sup>26</sup>Al/<sup>27</sup>Al

- ratios. *Astrophysical Journal Letters* 711, L117-L121.
37. Usui T., <sup>†</sup>Sanborn M., Wadhwa M., and McSween H. Y., Jr. (2010) Petrology and trace element geochemistry of RBT 04261 and RBT 04262 meteorites, the first examples of geochemically enriched lherzolitic shergottites. *Geochimica Cosmochimica Acta* 74, 7283-7306.
- 2009**
38. Shearer C. K., Burger P. V., Neal C. R., Sharp Z., <sup>†</sup>Spivak-Birndorf L., Borg L. E., Fernandes V. A., Papike J. J., Karner J. M., Wadhwa M., Gaffney A. M., Shafer J., Geissman J., Atudorei N. V., Herd C., Weiss B. P., King P. L., Crowther S. A., and Gilmour J. D. (2009) Non-basaltic asteroidal magmatism during the earliest stages of solar system evolution: A view from Antarctic achondrites Graves Nunatak 06128 and 06129. *Geochimica Cosmochimica Acta* 74, 1172-1199.
  39. <sup>†</sup>Spivak-Birndorf L., Wadhwa M., and <sup>†</sup>Janney P. E. (2009) <sup>26</sup>Al-<sup>26</sup>Mg Systematics in D'Orbigny and Sahara 99555 Angrites: Implications for High-Resolution Chronology Using Extinct Chronometers *Geochimica Cosmochimica Acta* 73, 5202-5211.
  40. Wadhwa M., Amelin Y., Bogdanovski O., Lugmair G. W., and <sup>†</sup>Janney P. E. (2009) Ancient relative and absolute ages for a basaltic meteorite: Implications for time scales of planetesimal accretion and differentiation. *Geochimica Cosmochimica Acta* 73, 5189-5201.
- 2008**
41. <sup>†</sup>Cook D., Clayton R. N., Wadhwa M., <sup>†</sup>Janney P., and Davis A. M. (2008) Nickel isotopic composition of troilite from iron meteorites. *Geophysical Research Letters* 35, L01203, doi:10.1029/2007GL032431.
  42. Dauphas N., <sup>†</sup>Cook D., Sacarabany A., Fröhlich C., Davis A. M., Wadhwa M., Pourmand A., Rauscher T., and Gallino R. (2008) Iron-60 evidence for early injection and efficient mixing of stellar debris in the protosolar nebula. *Astrophysical Journal* 686, 560-569.
  43. <sup>†</sup>Qin L., Dauphas N., Wadhwa M., Markowski A., Gallino R., <sup>†</sup>Janney P. E., and Bouman C. (2008) Tungsten nuclear anomalies in planetesimal cores. *Astrophysical Journal* 674, 1234-1241.
  44. <sup>†</sup>Qin L., Dauphas N., Wadhwa M., Masarik J., and <sup>†</sup>Janney P. E. (2008) Rapid accretion and differentiation of iron meteorite parent bodies inferred from <sup>182</sup>Hf-<sup>182</sup>W chronometry and thermal modeling. *Earth and Planetary Science Letters* 273, 94-104.
  45. Shearer C. K., Burger P. V., Neal C. R., Sharp Z., Borg L. E., <sup>†</sup>Spivak-Birndorf L., Wadhwa M., Papike J. J., Karner J. M., Gaffney A. M., Shafer J., Weiss B. P., Geissman J., and Fernandes V. A. (2008) A unique glimpse into asteroidal melting processes in the early solar system from the Graves Nunatak 06128/06129 achondrites. *American Mineralogist* 93, 1937-1940.
  46. Wadhwa M. (2008) Redox conditions on small bodies, the Moon and Mars. In *Oxygen in the Solar System* (Eds. G. MacPherson, D. W. Mittlefehldt, J. Jones), *Reviews in Mineralogy and Geochemistry* 68, 493-510.
- 2007**
47. <sup>†</sup>Cook D., Wadhwa M., Clayton R. N., Dauphas N., <sup>†</sup>Janney P., and Davis A. M. (2007) Mass-dependent fractionation of nickel isotopes in meteoritic metal. *Meteoritics and Planetary Science* 42, 2067-2077.
  48. Dauphas N., van Zuilen M., Busigny V., Lepland A., Wadhwa M., and <sup>†</sup>Janney P. E. (2007) Iron isotope, major and trace element characterization of early Archean supracrustal rocks from SW Greenland: protolith identification and metamorphic overprint. *Geochimica Cosmochimica Acta* 71, 4745-4770.
  49. <sup>†</sup>Qin L., Dauphas N., <sup>†</sup>Janney P. E., and Wadhwa M. (2007) Analytical developments for high-precision measurements of W isotopes in iron meteorites. *Analytical Chemistry* 79, 3148-3154.
  50. Richter F., <sup>†</sup>Janney P., Mendybaev R., Davis A. M., and Wadhwa M. (2007) Elemental and isotopic fractionation of Type B CAI-like liquids by evaporation. *Geochimica Cosmochimica Acta* 71, 5544-5564.
  51. <sup>†</sup>Teng F.-Z., Wadhwa M., and Helz R. (2007) The absence of magnesium isotope fractionation during basalt differentiation: A case study from Kilauea Iki lava lake, Hawaii, USA. *Earth and Planetary Science Letters* 261, 84-92.
  52. Wadhwa M., Amelin Y., Davis A. M., Lugmair G. W., Meyer B., Gounelle M., and Desch S. (2007) From dust to planetesimals: Implications for the solar protoplanetary disk from short lived radionuclides. *Protostars and Planets V* (Eds. B. Reipurth, D. Jewitt, and K. Keil), pp. 835-848.
  53. Wadhwa M. (2007) Long-lived chronometers. *Treatise on Geochemistry Vol. 1: Meteorites, Comets, and Planets* (Vol. Ed. A. M. Davis; Eds. in Chief H. D. Holland and K. K. Turekian), doi:10.1016/B978-008043751-4/00227-3.

**2006**

54. Beck P., Barrat J. A., Gillet Ph., Wadhwa M., Franchi I., Greenwood R. C., Bohn M., Cotten J., van de Moortele B., and Reynard B. (2006) Petrography and geochemistry of the chassignite Northwest Africa 2737 (NWA 2737), *Geochimica Cosmochimica Acta* 70, 2127-2139.
55. <sup>†</sup>Cook D., Wadhwa M., <sup>†</sup>Janney P., Dauphas N., Clayton R. N., and Davis A. M. (2006) High precision measurements of non-mass dependent effects in nickel isotopes in meteoritic metal via multi-collector ICPMS. *Analytical Chemistry* 78, 8477-8484.
56. McCoy T. J., Ketcham R. A., Wilson L., Benedix G., Wadhwa M., and Davis A. M. (2006) Formation of vesicles in asteroidal basaltic meteorites, *Earth and Planetary Science Letters* 246, 102-108.
57. Wadhwa M., Srinivasan G., and Carlson R. W. (2006) Time scales of planetesimal differentiation in the early solar system. In *Meteorites and the Early Solar System II* (Eds. D. Lauretta and H. Y. McSween, Jr.), University of Arizona Press, Tucson, pp. 715-731.

**2005**

58. <sup>†</sup>Foley C. N., Wadhwa M., Borg L. E., <sup>†</sup>Janney P. E., <sup>†</sup>Hines R., and Grove T. L. (2005) The early differentiation history of Mars from <sup>182</sup>W-<sup>142</sup>Nd isotope systematics in the SNC meteorites. *Geochimica Cosmochimica Acta* 69, 4557-4571.

**2004**

59. <sup>†</sup>Dauphas N., <sup>†</sup>Janney P. E., Mendybaev R., Wadhwa M., Richter F.M., Davis A.M., van Zuilen M., <sup>†</sup>Hines R., and <sup>†</sup>Foley C. N. (2004) Chromatographic separation and MC-ICPMS analysis of iron. Investigating mass dependent and independent isotope effects. *Analytical Chemistry* 76, 5855-5863.
60. <sup>†</sup>Dauphas N., van Zuilen M., Wadhwa M., Davis A. M., Marty B., and <sup>†</sup>Janney P. E. (2004) Clues from iron isotope variations on the origin of early Archean banded iron formations from Greenland. *Science* 306, 2077-2080.
61. Wadhwa M., Crozaz G., and Barrat J.-A. (2004) Trace element distributions in the Yamato 000593/000749, NWA 817 and NWA 998 nakhlites: Implications for their petrogenesis and mantle source on Mars. *Antarctic Meteorite Research* 17, 97-117.

**2003**

62. Crozaz G., Floss C., and Wadhwa M. (2003) Chemical alteration and REE mobilization in meteorites from hot and cold deserts. *Geochimica Cosmochimica Acta* 67, 4727-4741.
63. Galy A., Yoffe O., <sup>†</sup>Janney P.E., Williams R. W., Cloquet C., Alard O., Halicz L., Wadhwa M., Hutcheon I. D., Ramon E., and Carignan J. (2003) Magnesium isotope heterogeneity of the isotopic standard SRM980 and new reference materials for magnesium-isotope-ratio measurements. *Journal of Analytical Atomic Spectrometry* 18, 1352-1356.
64. Simon S. B., Grossman L., Clayton R. N., Mayeda T. K., Schwade J. R., Sipiera P. P., Wacker J. F., and Wadhwa M. (2003) The fall, recovery and classification of the Park Forest meteorite. *Meteoritics and Planetary Science* 39, 625-634.
65. Wadhwa M., Shukolyukov A., Davis A. M., Lugmair G. W., and Mittlefehldt D. W. (2003) Differentiation history of the mesosiderite parent body: Constraints from trace elements and manganese-chromium isotopic systematics of Vaca Muerta silicate clasts. *Geochimica Cosmochimica Acta* 67, 5047-5069.

**2002**

66. Gillet Ph., Barrat J. A., Deloule E., Wadhwa M., Jambon A., Sautter V., Devouard B., Neuville D., Benzerara K., and Lesourd M. (2002) Aqueous alteration in the Northwest Africa 817 (NWA 817) martian meteorite. *Earth and Planetary Science Letters* 203, 431-444.

**2001**

67. Crozaz G. and Wadhwa M. (2001) The terrestrial alteration of Saharan shergottites Dar al Gani 476 and 489: A case study of weathering in a hot desert environment. *Geochimica Cosmochimica Acta* 65, 971-977.
68. Wadhwa M. (2001) Redox state of Mars' upper mantle and crust from Eu anomalies in shergottite pyroxenes. *Science* 291, 1527-1530.
69. Wadhwa M., Lentz R. C. F., McSween H. Y., and Crozaz G. (2001) A petrologic and trace element study of Dar al Gani 476 and Dar al Gani 489: Twin meteorites with affinities to basaltic and lherzolitic shergottites. *Meteoritics and Planetary Science* 36, 195-208.

**2000**

70. Wadhwa M. and Russell S. S. (2000) Timescales of accretion and differentiation in the early solar system: The meteoritic evidence. *Protostars and Planets IV* (Eds. A. P. Boss, V. M. Manning and S. S. Russell), University of Arizona Press, Tucson, pp. 995-1018.

#### 1999

71. McCoy T. J., Wadhwa M., and Keil K. (1999) New lithologies in the Zagami martian meteorite: Evidence for fractional crystallization of a single magma unit on Mars. *Geochimica Cosmochimica Acta* 63, 1249-1262.
72. Wadhwa M., McKay G. A., and Crozaz G. (1999) Trace element distributions in Yamato 793605, a chip off the "Martian Iherzolite" block. *Antarctic Meteorite Research* 12, 168-182.

#### 1998

73. Wadhwa M. and Crozaz G. (1998) The igneous crystallization history of an ancient martian meteorite from rare earth element distributions. *Meteoritics and Planetary Science* 33, 685-692.
74. Wadhwa M., Crozaz G., Taylor L. A., and McSween H. Y., Jr. (1998) Martian basalt (shergottite) QUE94201 and lunar basalt 15555: A tale of two pyroxenes. *Meteoritics and Planetary Science* 33, 321-328.

#### 1997

75. Wadhwa M., Zinner E. K., and Crozaz G. (1997) Manganese-chromium systematics of sulfides in unequilibrated enstatite chondrites. *Meteoritics and Planetary Science* 32, 281-292.

#### 1996

76. McSween H. Y., Jr., Eisenhour D. D., Taylor L. A., Wadhwa M., and Crozaz G. (1996) QUE94201 shergottite: Crystallization of a martian basaltic magma. *Geochimica Cosmochimica Acta* 60, 4563-4569.
77. Wadhwa M. and Lugmair G. W. (1996) The age of the eucrite Caldera from convergence of long- and short-lived chronometers. Letter to *Geochimica Cosmochimica Acta* 60, 4889-4893.

#### 1995

78. Wadhwa M. and Crozaz G. (1995) Trace and minor elements in minerals in nakhlites and Chassigny: Clues to their petrogenesis. *Geochimica Cosmochimica Acta* 59, 3629-3645.

#### 1994

79. Wadhwa M., McSween H. Y., Jr., and Crozaz G. (1994) Petrogenesis of shergottite meteorites inferred from trace and minor element microdistributions. *Geochimica Cosmochimica Acta* 58, 4213-4229.

#### 1993

80. Harvey R. P., Wadhwa M., McSween H. Y., Jr., and Crozaz G. (1993) Petrography, mineral chemistry, and petrogenesis of Antarctic shergottite LEW88516. *Geochimica Cosmochimica Acta* 57, 4769-4783.
81. Jolliff B. L., Haskin L. A., Colson R. O., and Wadhwa M. (1993) Partitioning of REE-saturating minerals: Theory, experiment, and modelling of whitlockite, apatite, and evolution of lunar residual magmas. *Geochimica Cosmochimica Acta* 57, 4069-4094.

#### POPULAR SCIENCE ARTICLES, REVIEWS, EDITORIALS

1. Wadhwa M. (2021) Rocky tales from outer space. *Nature* 589, 510-511.
2. Anand M., Russell S., Lin Y., Wadhwa M., Marhas K.K., and Tachibana S. (2020) Editorial to the topical collection: Role of sample return in addressing major questions in planetary sciences. *Space Science Reviews* 216, 101. <https://doi.org/10.1007/s11214-020-00724-4>
3. Wadhwa M. (2014) What are we learning from cosmic dust? *Astronomy*, February 2014 issue, 56-59.
4. Wadhwa M. (2013) Exploring the Solar System from the ends of the Earth. *Slate*, Future Tense project ([http://www.slate.com/articles/technology/future\\_tense/2013/09/the\\_best\\_meteorites\\_are\\_found\\_in\\_antarctica.html](http://www.slate.com/articles/technology/future_tense/2013/09/the_best_meteorites_are_found_in_antarctica.html))
5. Wadhwa M. (2013) What are we learning from Moon rocks? *Astronomy*, June 2013 issue, 54-57.
6. Wadhwa M. (2013) Order from chaos – Genesis samples the solar wind. *Astronomy*, Oct 2013 issue, 54-57.

7. Fussman C. and Wadhwa M. (2004) In her own words: Meenakshi Wadhwa. *Discover Magazine*, March 2004 issue (<http://discovermagazine.com/2004/mar/meteoriticist-in-her-own-words>).
8. Wadhwa M. (2004) Searching for Treasure to the Ends of the Earth: Review of Meteorites, Ice and Antarctica: A Personal Account by William A. Cassidy. *Science* 303, 41-42.
9. Wadhwa M. (2001) Review of From Mountains to Meteorites by Brian Mason and Simon Nathan. *Meteoritics and Planetary Science* 36, 1413-1414.
10. Robinson M. and Wadhwa M. (1995) Messengers from Mars. *Astronomy* 23, 44-48.

#### REPORTS AND WHITE PAPERS

1. Milam S.N., Dwornik J.P., Elsilá J.E., Glavin D. P., Gerakines P.A., Mitchell J.L., Nakamura-Messenger K., Neveu M., Nittler L., Parker J., Quintana E., Sandford S.A., Schlieder J.E., Stroud R., Trainer M.G., Wadhwa M., Westphal A.J., Zolensky M., Bodewits D., and Clemett S. (2020) Volatile Sample Return in the Solar System. White paper submitted to the Planetary Science and Astrobiology Decadal Survey 2023-2032.
2. Heck P.R., Herd C., Grossman J.N., Badjukov D., Bouvier A., Bullock E., Chennaoui-Aoudjehane H., Debaille V., Dunn T.L., Ebel D.S., Ferrière L., Garvie L., Gattacceca J., Gounelle M., Herd R., Ireland T., Jacquet E., Macke R.J., McCoy T., McCubbin F.M., Mikouchi T., Metzler K., Roskosz M., Smith C., Wadhwa M., Welzenbach-Fries L., Yada T., Yamaguchi A., Zeigler R.A., and Zolensky M. (2019) Best practices for the use of meteorite names in publications. *Meteoritics and Planetary Science* 54, 1397-1400.
3. iMOST (International MSR Objectives and Samples Team: co-chairs: D. W. Beaty, M. M. Grady, H. Y. McSween, E. Sefton-Nash; documentarian: B. L. Carrier; team members: F. Altieri, Y. Amelin, E. Ammannito, M. Anand, L. G. Benning, J. L. Bishop, L. E. Borg, D. Boucher, J. R. Brucato, H. Busemann, K. A. Campbell, A. D. Czaja, V. Debaille, D. J. Des Marais, M. Dixon, B. L. Ehlmann, J. D. Farmer, D. C. Fernandez-Remolar, J. Filiberto, J. Fogarty, D. P. Glavin, Y. S. Goreva, L. J. Hallis, A. D. Harrington, E. M. Hausrath, C. D. K. Herd, B. Horgan, M. Humayun, T. Kleine, J. Kleinhenz, R. Mackelprang, N. Mangold, L. E. Mayhew, J. T. McCoy, F. M. McCubbin, S. M. McLennan, D. E. Moser, F. Moynier, J. F. Mustard, P. B. Niles, G. G. Ori, F. Raulin, P. Rettberg, M. A. Rucker, N. Schmitz, S. P. Schwenzer, M. A. Sephton, R. Shaheen, Z. D. Sharp, D. L. Shuster, S. Siljestrom, C. L. Smith, J. A. Spry, A. Steele, T. D. Swindle, I. L. ten Kate, N. J. Tosca, T. Usui, M. J. Van Kranendonk, M. Wadhwa, B. P. Weiss, S. C. Werner, F. Westall, R. M. Wheeler, J. Zipfel, and M. P. Zorzano) (2019) The Potential Science and Engineering Value of Samples Delivered to Earth by Mars Sample Return. *Meteoritics & Planetary Science* 54 (3), p. 667-671.
4. MSPG (MSR Science Planning Group: co-chairs M. Meyer and E. Sefton-Nash; facilitation D. W. Beaty and B. L. Carrier; and D. Bass, F. Gaubert, T. Haltigin, A. D. Harrington, M. M. Grady, Y. Liu, D. Martin, B. Marty, R. Mattingly, S. Siljestrom, E. Stansbery, K. Tait, M. Wadhwa, L. White) & C. C. Allen, H. Busemann, M. Calaway, M. Chaussidon, C. M. Corrigan, N. Dauphas, V. Debaille, D. P. Glavin, S. M. McLennan, K. Olsson-Francis, R. Shaheen, C. L. Smith, J. Thieme, T. Usui, M. A. Velbel, S. C. Werner (2019) The Relationship of MSR Science and Containment. Unpublished workshop report, posted 04/01/19 at <https://mepag.jpl.nasa.gov/reports/Science%20in%20Containment%20Report.pdf>

#### CONFERENCE PRESENTATIONS

1. †Davidson J., Wadhwa M., Sutton S., and Hervig R. L. (2021) Water on Mars: Insights from correlated microscale investigations of hydrogen isotopes, water abundances, and iron valence of nominally anhydrous pyroxene in nakhlites. *Lunar and Planetary Science Conference LII*, submitted.
2. Ray S. and Wadhwa M. (2021) Correlated iron and silicon isotope compositions of aubrites as tracers of differentiation processes. *Lunar and Planetary Science Conference LII*, submitted.
3. Wadhwa M., Williams D. A., Swann J. L., Anbar A. D., Mead C. J., Bell J. F. III, Asner G. P., Bossert K., and Shkolnik E. L. (2021) *Lunar and Planetary Science Conference LII*, submitted.
4. †Davidson J., Wadhwa M., and Hervig R. L. (2020) Water on Mars: Insights from nominally anhydrous pyroxene in Lafayette, Nakhla, and Northwest Africa 7034. *Lunar and Planetary Science Conference LI*, #1660.
5. †Dunham E., Desch S. J., Wadhwa M., and Schrader D. (2020) Reassessment of the heterogeneity of aluminum-26 in the solar nebula. *Lunar and Planetary Science Conference LI*, #1019.

6. <sup>†</sup>Ray S., Wadhwa M., and <sup>†</sup>Rai V. K., (2020) A new method for coupled investigation of silicon and iron isotopes in the same sample: Application to understanding accretion and differentiation processes on meteorite parent bodies. *Lunar and Planetary Science Conference L1*, #2558.
7. <sup>†</sup>Torrano Z. A., <sup>†</sup>Davidson J., and Wadhwa M. (2020) The reclassification of Northwest Africa (NWA) 2900 from CV3 to CK3 chondrite. *Lunar and Planetary Science Conference L1*, #1748.
8. <sup>†</sup>Torrano Z. A., <sup>†</sup>Schrader D., Greenwood R. C., Rai V. K., and Wadhwa M. (2020) Evaluating the relationship between CM and CO chondrites using chromium, titanium, and oxygen isotopes. *Lunar and Planetary Science Conference L1*, #2524.
9. Carrier B. L., Grady M. M., McSween H. Y., Jr., Sefton-Nash E., Beaty D. W., and the iMOST Team (2019) Revisiting the proposed scientific objectives for Mars sample return. *Ninth International Conference on Mars*, #6236.
10. <sup>†</sup>Davidson J., Wadhwa M., Hervig R. L., and Stephant A. (2019) Water on Mars: Insights from apatite in regolith breccia NWA 7034. *Lunar and Planetary Science Conference L*, #1596.
11. <sup>†</sup>Davidson J., Wadhwa M., and Hervig R. L. (2019) Water on Mars: Insights from nominally anhydrous pyroxene in Nakhla and Northwest Africa 7034. *82<sup>th</sup> Annual Meteoritical Society Meeting*, #6198.
12. <sup>†</sup>Dunham E., Wadhwa M., Liu M.-C., Hertwig A. T., Kita N., Fukuda K., Schrader D. L. and Davidson J. (2019) Pristine CR2 CAIs preserve initial abundances of short-lived radionuclides <sup>10</sup>Be and <sup>26</sup>Al. *Lunar and Planetary Science Conference L*, #1928.
13. <sup>†</sup>Dunham E., Liu M.-C., Hertwig A. T., Desch S. J., and Wadhwa M. (2019) CO3 and CH/CB CAIs suggest <sup>10</sup>Be was distributed uniformly in the solar nebula. *82<sup>th</sup> Annual Meteoritical Society Meeting*, #6346.
14. <sup>†</sup>Dunlap D. R., Wadhwa M., Krestianinov E., Koefoed P. K., Amelin Y., and Warren P. (2019) Chronology of the eucrite Northwest Africa 8661: A record of ancient volcanism on Vesta. *Lunar and Planetary Science Conference L*, #2832.
15. Grady M. M., Meyer M. A., Sefton-Nash E., Beaty D. W., Carrier B. L., Bass D., Gaubert F., Haltigin T., Harrington A. D., Liu Y., Marty B., Mattingly R., Siljeström S., Stansbery E., Tait K., Wadhwa M., White L., MSR Science Planning Group (MSPG) Laying the groundwork: Advance planning in preparation for scientific analysis of samples returned from Mars. *82<sup>th</sup> Annual Meteoritical Society Meeting*, #6432.
16. Haltigin T. W., Meyer M. A., Sefton-Nash E., Beaty D. W., Bass D. S., Carrier B. L., Grady M. M., on behalf of the MSR Science Planning Group (MSPG) (2019) Developing a potential international science program for samples returned from Mars: Strategies and considerations. *Ninth International Conference on Mars*, #6244.
17. Hertwig A. T., <sup>†</sup>Dunham E., Liu M.-C., and Wadhwa M. (2019) Mesquite: Petrography, Aluminum-26 chronometry, and Be-B systematics of an unusually large melilite-rich CAI from the Northwest Africa (NWA) 7892 CO3.0 chondrite. *Lunar and Planetary Science Conference L*, #2955.
18. Meyer M. A., Sefton-Nash E., Beaty D. W., Grady M. M., Haltigin T., Martin D., Marty B., Siljeström S., Stansbery E. K., Wadhwa M., Carrier B. L., Harrington A. D., Liu Y., Bass D. S., Mattingly R. L., and Gaubert F. (2019) Strategies for optimizing the scientific interactions with returned martian samples for the international scientific community: Science in containment. *Lunar and Planetary Science Conference L*, #2560.
19. Meyer M. A., Sefton-Nash E., Beaty D. W., and Carrier B. L. including on behalf of the MSR Science Planning Group (MSPG): Grady M. M., Haltigin T., Marty B., Siljeström S., Stansbery E. K., Tait K., Wadhwa M., Harrington A. D., Liu Y., Bass D. S., Mattingly R. L., and Gaubert F. (2019) MSR Science Planning Group Workshop #1 Report: The relationship of MSR science and containment. *Ninth International Conference on Mars*, #6385.
20. <sup>†</sup>Ray S., Wadhwa M., and <sup>†</sup>Rai V. K., (2019) Iron isotope compositions of large metal nodules from the Norton County aubrite. *Lunar and Planetary Science Conference L*, #1960.
21. <sup>†</sup>Ray S., Wadhwa M., <sup>†</sup>Rai V. K., and Garvie L. A. J. (2019) Iron isotope compositions of Si-bearing metal nodules from the Mount Egerton aubrite. *82<sup>th</sup> Annual Meteoritical Society Meeting*, #6427.
22. Sefton-Nash E., Meyer M. A., Beaty D. W., Marty B., McCubbin F. M., and Carrier B. L. including on behalf of the MSR Science Planning Group (MSPG): Grady M. M., Haltigin T., Siljeström S., Stansbery E. K., Tait K., Wadhwa M., Harrington A. D., Liu Y., Bass D. S., Mattingly R. L., and Gaubert F. (2019) MSR Science Planning Group Workshop #2 Report: Containment and control. *Ninth International Conference on Mars*, #6387.
23. <sup>†</sup>Torrano Z. A., <sup>†</sup>Rai V. K., and Wadhwa M. (2019) Titanium isotope compositions of refractory inclusions: Implications for nebular mixing. *Lunar and Planetary Science Conference L*, #1501.

24. <sup>†</sup>Torrano Z. A., <sup>†</sup>Rai V. K., and Wadhwa M. (2019) Chromium isotope compositions of refractory inclusions: Implications for isotopic variability in the early Solar System. *82<sup>th</sup> Annual Meteoritical Society Meeting*, #6104.
25. Wadhwa M., Stephant A., Sutton S., and Bell D. (2019) Spatially correlated analyses of hydrogen isotope compositions and iron valence in Dish Hill kaersutites: Implications for martian igneous samples. *82<sup>th</sup> Annual Meteoritical Society Meeting*, #6473.
26. 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 melts from lunar meteorite Oued Awlitis 001. *82<sup>th</sup> Annual Meteoritical Society Meeting*, #6479.
27. <sup>†</sup>Dunham E., Liu M.-C., Simon S. B., Krot A. N., and Wadhwa M. (2018) Beryllium-boron <sup>†</sup>Dunham E., Liu M.-C., Simon S. B., Krot A. N., and Wadhwa M., (2018) Beryllium-boron systematics of <sup>26</sup>Al-poor CAIs: Implications for the relationship between FUN and non-FUN CAIs. *Lunar and Planetary Science Conference XXXIX*, #2402.
28. <sup>†</sup>Dunham E., Kita N. T., Defouilloy C., Simon S. B., and Wadhwa M., (2018) Investigation of oxygen isotope compositions combined with Be-B and Al-Mg systematics in CV3 CAIs. *Lunar and Planetary Science Conference XXXIX*, #2497.
29. <sup>†</sup>Dunlap D. R. and Wadhwa M. (2018) Chronology of planetesimal differentiation based on the timing of achondrite formation in the early Solar System. *Differentiation: Building the Internal Architecture of Planets*, #4003.
30. <sup>†</sup>Dunlap D. R., Koefoed P. K., Amelin Y., Wadhwa M., and Agee C. (2018) Pb-Pb age of the ungrouped achondrite Northwest Africa 11119: Timing of extraterrestrial silica-rich magmatism. *Lunar and Planetary Science Conference XXXIX*, #2302.
31. Garvie L. A. J., <sup>†</sup>Ray S., Wadhwa M., Wittmann A., and Domanik K. (2018) Scrutinizing six silicide-bearing samples of metal from the Norton County aubrite. *Lunar and Planetary Science Conference XXXIX*, #2104.
32. <sup>†</sup>Torrano Z. A., <sup>†</sup>Rai V. K., and Wadhwa M. (2018) Combined investigation of chromium, titanium and magnesium isotope compositions of refractory inclusions from a variety of carbonaceous chondrites. *Lunar and Planetary Science Conference XXXIX*, #2405.
33. <sup>†</sup>Ray S., Wadhwa M., and <sup>†</sup>Rai V. K., (2018) The origin of metal grains from enstatite achondrites based on iron isotope compositions. *Lunar and Planetary Science Conference XXXIX*, #2140.
34. Beaty D. W. and iMOST Team (including Wadhwa M.) (2018) Introduction to the 2018 iMOST study. *Second International Mars Sample Return Conference*, #6089.
35. Bishop J. L. and iMOST Team (including Wadhwa M.) (2018) Potential high priority subaerial environments for Mars sample return. *Second International Mars Sample Return Conference*, #6043.
36. Campbell K. A. and iMOST Team (including Wadhwa M.) (2018) Seeking signs of life on Mars: A strategy for selecting and analyzing returned samples from hydrothermal deposits. *Second International Mars Sample Return Conference*, #6046.
37. Des Marais D. J. and iMOST Team (including Wadhwa M.) (2018) Seeking the signs of life: Assessing the presence of biosignatures in the returned sample suite. *Second International Mars Sample Return Conference*, #6120.
38. Ehlmann B. L. and iMOST Team (including Wadhwa M.) (2018) High priority samples to characterize the habitability of groundwaters and search for rock-hosted life on Mars. *Second International Mars Sample Return Conference*, #6051.
39. Harrington A. D. and iMOST Team (including Wadhwa M.) (2018) The importance of returned martian samples for constraining potential hazards to future human exploration. *Second International Mars Sample Return Conference*, #6049.
40. Herd C. D. K. and iMOST Team (including Wadhwa M.) (2018) The importance of Mars samples in constraining the geological and geophysical processes on Mars and the nature of its crust, mantle and core. *Second International Mars Sample Return Conference*, #6055.
41. Humayun M. and iMOST Team (including Wadhwa M.) (2018) What could be learned about the geochronology of Mars from samples collected by M-2020. *Second International Mars Sample Return Conference*, #6041.
42. Kate I. L. ten and iMOST Team (including Wadhwa M.) (2018) The use of returned martian samples to evaluate the possibility of extant life on Mars. *Second International Mars Sample Return Conference*, #6053.



43. Kleinhenz J. and iMOST Team (including Wadhwa M.) The relevance of Mars samples to planning for potential future in-situ resource utilization. *Second International Mars Sample Return Conference*, #6042.
44. Mangold N. and iMOST Team (including Wadhwa M.) (2018) Seeking signs of life on Mars: The importance of sedimentary suites as part of Mars sample return. *Second International Mars Sample Return Conference*, #6045.
45. Sephton M. A. and iMOST Team (including Wadhwa M.) (2018) The search for life's organic carbon in returned samples from Mars. *Second International Mars Sample Return Conference*, #6052.
46. Swindle T. D. and iMOST Team (including Wadhwa M.) (2018) Constraining our understanding of the actions and effects of martian volatiles through the study of returned samples. *Second International Mars Sample Return Conference*, #6054.
47. Bouvier A., Zhang B., Shieh S., Lin Y., Schrader D., Wadhwa M., Korotev R., and Hartmann W. K. (2017) Geochronological Constraints on the Lunar Impact History [INVITED]. 3<sup>rd</sup> Beijing International Forum on Lunar and Deep-space Exploration, China September 19<sup>th</sup>-22<sup>nd</sup> 2017.
48. Choukroun M., Raymond C., and Wadhwa M. (2017) COMET Nucleus Dust and Organics Return (CONDOR): A New Frontiers 4 mission proposal. *European Planetary Science Congress*, Vol. 11, EPSC2017-413.
49. Cohen B. A., Arevalo R., Bottke W. F., Conrad P. G., Farley K. A., Fasset C. I., Jolliff B. L., Lawrence S. J., Mahaffy P. R., Malespin C., Swindle T. D., and Wadhwa M. (2017) Geochronology as a framework for planetary history through 2050. *Planetary Science Vision 2050 Workshop*, #8047.
50. <sup>†</sup>Dunham E., Wadhwa M., and Desch S. J. (2017) Beryllium-boron systematics of two distinctive CAIs from CV3 chondrites: The relatively pristine CAI B4 from NWA 6991 and the FUN CAI CMS-1 from Allende. *Lunar and Planetary Science Conference XXXXVIII*, #1507.
51. <sup>†</sup>Dunham E., Wadhwa M., and Liu M.-C. (2017) Range of initial <sup>10</sup>Be/<sup>9</sup>Be ratios in the early Solar System: A re-assessment based on analyses of new CAIs and melilite composition glass standards. *80<sup>th</sup> Annual Meteoritical Society Meeting*, #6381.
52. <sup>†</sup>Dunlap D. R., <sup>†</sup>Rai V. K., and Wadhwa M. (2017) High precision <sup>26</sup>Al-<sup>26</sup>Mg systematics of a new eucrite Northwest Africa 10919 and the brachinites Northwest Africa 4882 and Brachina. *Lunar and Planetary Science Conference XXXXVIII*, #2981.
53. <sup>†</sup>Dunlap D. R., Wadhwa M., and Agee C. (2017) <sup>26</sup>Al-<sup>26</sup>Mg systematics of the ungrouped achondrite Northwest Africa 11119: Timing of extraterrestrial silica-rich magmatism. *80<sup>th</sup> Annual Meteoritical Society Meeting*, #6268.
54. Ferrière L., Meier M. M., Assis Fernandes V., Fritz J., Greshake A., Barrat J.-A., Böttger U., Bouvier A., Brandstätter F., Busemann H., Korotev R. L., Maden C., Magna T., Schmitt-Kopplin Ph., Schrader D. L., and Wadhwa M. (2017) The unique crowdfunded Oued Awlitis 001 Lunar Meteorite – A consortium overview. *Lunar and Planetary Science Conference XXXXVIII*, #1621.
55. Garvie L. A. J., Wittmann A., <sup>†</sup>Ray S., and Wadhwa M. (2017) Elemental and structural diversity in Norton County metal nodules. *80<sup>th</sup> Annual Meteoritical Society Meeting*, #6384.
56. <sup>†</sup>Hines R., Schrader D. L., and Wadhwa M. (2017) Current and future public engagement at ASU's Center for Meteorite Studies. *Lunar and Planetary Science Conference XXXXVIII*, #1597.
57. <sup>†</sup>Mane P., Wallace S., Zega T. J., Wadhwa M., and Wallace P. M. (2017) Electron back-scattered diffraction analysis of a refractory inclusion and its Wark-Lovering Rims. *Lunar and Planetary Science Conference XXXXVIII*, #2968.
58. <sup>†</sup>Ray S., <sup>†</sup>Rai V. K., <sup>†</sup>Hines R., <sup>†</sup>Romaniello S., and Wadhwa M. (2017) Iron isotope compositions of achondritic meteorites. *80<sup>th</sup> Annual Meteoritical Society Meeting*, #6400.
59. <sup>†</sup>Stephant A., <sup>†</sup>Mane P., Garvie L.A.J., Hervig R., and Wadhwa M. (2017) Effects of desert weathering on meteoritic hydrogen isotope systematics: Insights from Tissint. *Lunar and Planetary Science Conference XXXXVIII*, #1232.
60. <sup>†</sup>Torrano Z. A., <sup>†</sup>Rai V. K., and Wadhwa M. (2017) Magnesium, titanium, and chromium isotope compositions of refractory inclusions from several CV3 and CK3 chondrites: implications for nebular heterogeneity. *Lunar and Planetary Science Conference XXXXVIII*, #3045.
61. <sup>†</sup>Torrano Z. A., <sup>†</sup>Rai V. K., and Wadhwa M. (2017) Titanium isotope compositions of refractory inclusions from several CV3 and CK3 chondrites: Implications for nebular heterogeneity. *80<sup>th</sup> Annual Meteoritical Society Meeting*, #6318.
62. Wadhwa M. (2017) Meteoritic constraints on timescales of planetesimal accretion in the early Solar System. *Workshop on Accretion: Building New Worlds*, #2053.
63. Wadhwa M., Leshin L. A., Clark B., Jones S., Jurewicz A., McLennan S., Mischna M., Ruff S., Squyres S., and Westphal A. (2017) A low-cost, low-risk mission concept for the return of martian

- atmospheric dust: Relevance to human exploration of Mars. *Workshop on Dust in the Atmosphere of Mars and its Impact on Human Exploration*, #6028.
64. Brennecke G., Borg L., and Wadhwa M. (2016) The isotopic character of early Solar System events. *Goldschmidt Abstracts*, #301.
  65. <sup>†</sup>Cartwright J. A., Hodges K. V., Wadhwa M., and Mittlefehldt D. W. (2016) Dating howardite melt clasts: Evidence for an extended Vestan bombardment? *Lunar and Planetary Science Conference XXXXVII*, #2865.
  66. <sup>†</sup>Cartwright J. A., Amelin Y., Koefoed P., and Wadhwa M. (2016) U-Pb age of the ungrouped achondrite NWA 8486. *Meteoritics and Planetary Science* 51 (Suppl.), #6231.
  67. <sup>†</sup>Dunham E., Wadhwa M., Hervig R., Simon S., and Grossman L. (2016) Further evidence of beryllium-10 heterogeneity in the early solar system inferred from Be-B systematics of refractory inclusions in a minimally altered CR2 chondrite. *Lunar and Planetary Science Conference XXXXVII*, #2723.
  68. <sup>†</sup>Dunham E., Wadhwa M., Simon S., and Grossman L. (2016) Beryllium-boron systematics of refractory inclusions in CR2 and CV3 chondrites: Evidence for <sup>10</sup>Be heterogeneity. *Meteoritics and Planetary Science* 51 (Suppl.), #6222.
  69. <sup>†</sup>Dunlap D. R., Wadhwa M., and <sup>†</sup>Romaniello S. J. (2016) <sup>53</sup>Mn-<sup>53</sup>Cr systematics of Brachina revisited in high precision. *Lunar and Planetary Science Conference XXXXVII*, #3055.
  70. <sup>†</sup>Dunlap D. R., <sup>†</sup>Romaniello S. J., and Wadhwa M. (2016) <sup>53</sup>Mn-<sup>53</sup>Cr systematics of the brachinite NWA 4882. *Meteoritics and Planetary Science* 51 (Suppl.), #6217.
  71. <sup>†</sup>Dybal E. M. K., Wadhwa M., <sup>†</sup>Romaniello S. J., and <sup>†</sup>Hines R. (2016) Iron isotope compositions of achondritic meteorites from distinct parent bodies. *Meteoritics and Planetary Science* 51 (Suppl.), #6535.
  72. Fraeman A. A., Ehlmann B. L., Northwood-Smith G. W. D., Liu Y., Wadhwa M., and Greenberger R. N. (2016) Exploring the mineralogical diversity of HED meteorites with microimaging VSWIR spectroscopy. *Lunar and Planetary Science Conference XXXXVII*, #2237.
  73. Fraeman A. A., Ehlmann B. L., Northwood-Smith G. W. D., Liu Y., Wadhwa M., and Greenberger R. N. (2016) *Using VSWIR Microimaging Spectroscopy to Explore the Mineralogical Diversity of HED Meteorites*. 8th Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS 2016).
  74. Jurewicz A. J. G., Rieck K. D., Wadhwa M., Burnett D. S., Hervig R., Williams P., Guan Y., Wiens R., and Huss G. R. (2016) New constraints on SW Mg isotopes from understanding Genesis DoS collectors, with implications. *Lunar and Planetary Science Conference XXXXVII*, #2350.
  75. Kita N.T., Ushikubo T., Tenner T.J., <sup>†</sup>Romaniello S.J., and Wadhwa M. (2016) Instrumental biases for SIMS magnesium isotope analyses. *Goldschmidt Abstracts*, #1538.
  76. <sup>†</sup>Mane P., Bose M., Defouilloy C., Kita N. T., MacPherson G. J., and Wadhwa M. (2016) Formation timescales of Wark-Lovering rims around calcium-aluminium-rich inclusions. *Lunar and Planetary Science Conference XXXXVII*, #2560.
  77. <sup>†</sup>Mane P., <sup>†</sup>Torrano Z. A., <sup>†</sup>Romaniello S. J., Brennecke G. A., Shollenberger Q. R., Borg L., and Wadhwa M. (2016) Zirconium and chromium isotope systematics of non-Allende CAIs. *Lunar and Planetary Science Conference XXXXVII*, #2788.
  78. <sup>†</sup>Mane P., Bose M., and Wadhwa M. (2016) Al-Mg systematics of Wark-Lovering rims around a refractory inclusion from the NWA 5028 CR2 chondrite. *Meteoritics and Planetary Science* 51 (Suppl.), #6238.
  79. Monroe A. A., Shock E. L., and Wadhwa M. (2016) Meteoritics isoleucine epimerization in the chronology of asteroidal parent body fluids. *Lunar and Planetary Science Conference XXXXVII*, #2340.
  80. <sup>†</sup>Stephant A., Hervig R. L., and Wadhwa M. (2016) Water in nominally anhydrous crustal minerals of Vesta. *Lunar and Planetary Science Conference XXXXVII*, #2436.
  81. <sup>†</sup>Stephant A., Hervig R. L., Bose M., and Wadhwa M. (2016) D/H ratios and water contents in eucrite minerals: Implications for the source and abundance of water on Vesta. *Meteoritics and Planetary Science* 51 (Suppl.), #6212.
  82. Wadhwa M. (2016) To See a World in a Grain of Sand: Insights into Solar System Formation and Evolution from Isotopic Analyses of Planetary Materials [INVITED; Shoemaker Lecture]. *Eos Trans. AGU* 97, Fall Meeting Suppl., P14A-01.
  83. Wittmann A., Convey D., Sharp T., Wadhwa M., Buseck P., and Hodges K. (2016) The electron microprobe laboratory at Arizona State University. *Lunar and Planetary Science Conference XXXXVII*, #3018.

84. Amelin Y., <sup>†</sup>Williams C. D., and Wadhwa M. (2015) U-Th-Pb and Rb-Sr Systematics of Allende FUN CAI CMS-1. *Lunar and Planetary Science Conference XXXXVI*, #2355.
85. Balta J. B., McSween H. Y., <sup>†</sup>Tucker K., and Wadhwa M. (2015) Petrology and Geochemistry of New Antarctic Shergottites: LAR 12011, LAR 12095, and LAR 12240. *Lunar and Planetary Science Conference XXXXVI*, #2355.
86. Balta J. B., <sup>†</sup>Sanborn M. E., Udry A., Wadhwa M., and McSween H. Y. (2015) Igneous Petrology and Geochemistry of the Tissint Meteorite. *Lunar and Planetary Science Conference XXXXVI*, #1267.
87. Bouvier A., Wadhwa M., Korotev R. L., Hartmann W. K. (2015) Pb-Pb chronometry of lunar impact melt breccias and comparison with other radiochronometric records. Workshop on the first 1 Ga of impact records: Evidence from lunar samples and meteorites. Abstract #6016.
88. Brennecka G. A., Borg L. E., <sup>†</sup>Romaniello S. J., <sup>†</sup>Souders A. K., and Wadhwa M. (2015) The Search for Supernovae Fingerprints in the Early Solar System: No Signs of Live <sup>126</sup>Sn in Allende CAIs. *Lunar and Planetary Science Conference XXXXVI*, #1813.
89. Brennecka G. A., Borg L., <sup>†</sup>Romaniello S., <sup>†</sup>Souders A. K. and Wadhwa M. (2015) A renewed search for extant <sup>126</sup>Sn: Te isotopics of Allende CAIs obtained by HG-ICPMS [INVITED]. *Goldschmidt Abstracts*, #385.
90. <sup>†</sup>Cartwright J. A., Mittlefehldt D. W., Hodges K. V., Wadhwa M. (2015) Impact History on Vesta: Petrographic, Compositional and Future Chronological Studies of Melt Clasts in Howardites. *Lunar and Planetary Science Conference XXXXVI*, #1452.
91. <sup>†</sup>Dunham E., Wadhwa M., <sup>†</sup>Tucker K., Balta J. B., and McSween H. Y. (2015) Rare earth element geochemistry of the shergottites LAR 12095, 12240, and 12011. *Meteoritics and Planetary Science* 50 (Suppl.), #5289.
92. <sup>†</sup>Dunlap D. R., Ku Y. J., Garvie L. A. J., and Wadhwa M. (2015) Petrology of Ungrouped and Anomalous Achondrites SaU 493, NWA 4470, NWA 6962, and NWA 5297. *Lunar and Planetary Science Conference XXXXVI*, #2570.
93. <sup>†</sup>Dunlap D. R., Wadhwa M., <sup>†</sup>Romaniello S. J., <sup>†</sup>Souders A. K., and <sup>†</sup>Hines R. (2015) <sup>26</sup>Al-<sup>26</sup>Mg systematics of ungrouped achondrites: Implications for timing of planetesimal differentiation. *Meteoritics and Planetary Science* 50 (Suppl.), #5317.
94. Green R. O., Ehlmann B. L., Fraeman A. A., Blaney D., Liu Y., Chabot N. L., Murchie S., Wadhwa M., Herd C. D. K., Velbel M. A., Mouroulis P., and Van Gorp B. (2015) Microimaging Spectroscopy for the Exploration of Small Bodies: First Laboratory Measurements of Carbonaceous Chondrite and HED Meteorites and a Proposed M6 Instrument for In Situ Measurement. *Lunar and Planetary Science Conference XXXXVI*, #2154.
95. Kita N. T., Tenner T. J., Ushikubo T., Bouvier A., Wadhwa M., Bullock E. S., and MacPherson G. J. (2015) Why do U-Pb ages of chondrules and CAIs have more spread than their <sup>26</sup>Al ages? *Meteoritics and Planetary Science* 50 (Suppl.), #5360.
96. Kööp L., Davis A. M., Heck P. R., Kita N. T., Krot A. N., <sup>†</sup>Mane P., Nagashima K., Nakashima D., Park C., Tenner T. J., Wadhwa M. (2015) Multiple Generations of Fractionated Hibonite-Rich CAIs Sampled the Solar Nebula at Different Degrees of Isotopic Heterogeneity. *Lunar and Planetary Science Conference XXXXVI*, #2750.
97. <sup>†</sup>Mane P., Bose M., Wadhwa M. (2015) Resolved time difference between calcium aluminum rich inclusions and their Wark-Lovering rims inferred from Al-Mg chronology of two inclusions from a CV3 carbonaceous chondrite. *Lunar and Planetary Science Conference XXXXVI*, #2898.
98. <sup>†</sup>Mane P., Hervig R., Bose M., and Wadhwa M. (2015) Trace element abundances in Wark-Lovering rims in CAIs from a CV3 meteorite: Implications for their chronology. *Meteoritics and Planetary Science* 50 (Suppl.), #5327.
99. <sup>†</sup>Mercer C. M., <sup>†</sup>Souders A. K., <sup>†</sup>Romaniello S. J., <sup>†</sup>Williams C. D., Brennecka G. A., Wadhwa M. (2015) Chromium and titanium isotope systematics of Allende CAIs. *Lunar and Planetary Science Conference XXXXVI*, #2920.
100. <sup>†</sup>Tucker K., Hervig R., Wadhwa M. (2015) Hydrogen isotope systematics of nominally anhydrous phases in martian meteorites. *Lunar and Planetary Science Conference XXXXVI*, #2915.
101. <sup>†</sup>Tucker K., Hervig R., Till C., and Wadhwa M. (2015) D/H in nominally anhydrous phases in martian meteorites: Implications for the martian mantle. *Meteoritics and Planetary Science* 50 (Suppl.), #5173.
102. <sup>†</sup>Bouvier A., Wadhwa M., Korotev R. and Hartmann W (2014) Pb-Pb chronometry of lunar impact melt breccias. *Goldschmidt Abstracts*, #253.

103. <sup>†</sup>Brennecka G. A., Borg L. E., and Wadhwa M. (2014) The gadolinium and dysprosium isotopic composition of a supernova injection inferred from Allende CAIs. *Lunar and Planetary Science Conference XXXXV*, #2280.
104. Bullock E. S., <sup>†</sup>Bouvier A., Wadhwa M., MacPherson G. J., and Kita N. T. (2014) Mineralogy and petrology of an unusual large Type A CAI from NWA 6991. *Lunar and Planetary Science Conference XXXXV*, #1919.
105. Ding S., Dasgupta R., Lee C-T., and Wadhwa M. (2014) New bulk sulfur measurements of martian meteorites – Implications for sulfur cycle and crust formation. *Lunar and Planetary Science Conference XXXXV*, #1717.
106. <sup>†</sup>Dunlap D. R., Wadhwa M., <sup>†</sup>Romaneillo S. R. (2014) <sup>26</sup>Al-<sup>26</sup>Mg systematics in the unusual ungrouped achondrite NWA 7325 and the eucrite Juvinas. *Lunar and Planetary Science Conference XXXXV*, #2186.
107. Ehlmann B. L., Mustard J. F., Murchie S. L., Green R. O., Mouroulis P., Van Gorp B., Jeganathan M., Wu Y.-H., Glavich T., Bartos R., Nastal J., Strohbahn K., Blaney D. L., Boardman J., Farmer J., Fischer W., Grotzinger J., Herd C. D. K., Hoehler T., Hurowitz J., Schmidt M. E., Seelos F., Wadhwa M., Santo A., and Ferdosi J. (2014) Microimaging spectroscopy on Mars with CIMMBA, proposed for Mars-2020: The caching supporting infrared microimager for mineralogy and biosignature assessment. *Lunar and Planetary Science Conference XXXXV*, #2824.
108. <sup>†</sup>Mane P., <sup>†</sup>Brennecka G. A., <sup>†</sup>Romaniello S. J., and Wadhwa M. (2014) Mg and U isotopic systematics in Allende CAIs: Implications for the origin of uranium isotope variation in refractory inclusions. *Lunar and Planetary Science Conference XXXXV*, #1685.
109. <sup>†</sup>Mane P., <sup>†</sup>Brennecka G. A., <sup>†</sup>Romaniello S. J., <sup>†</sup>Williams C. D. and Wadhwa M. (2014) Zr isotope systematics of Allende CAIs. *Meteoritics and Planetary Science* 49 (Suppl.), #5403.
110. <sup>†</sup>Mane P., Hervig R., Wadhwa M., and Garvie L. A. J. (2014) Hydrogen isotope composition of the Mars mantle inferred from the most recent martian meteorite fall, Tissint. *Workshop on Volatiles in the Martian Interior*, #1020.
111. Mendybaev R. A., Richter F. M., <sup>†</sup>Williams C. D., Fedkin A. V., and Wadhwa M. (2014) Evolution of chemical and isotopic compositions of FUN CAIs: Experimental modeling. *Lunar and Planetary Science Conference XXXXV*, #2782.
112. Morris M. A., Garvie L. A. J., Dock M., <sup>†</sup>Hines R., and Wadhwa M. (2014) The fruitful marriage of art and science. *Lunar and Planetary Science Conference XXXXV*, #2832.
113. <sup>†</sup>Tucker K., Hervig R., and Wadhwa M. (2014) Hydrogen isotope systematics of maskelynites in the Los Angeles shergottite. *Meteoritics and Planetary Science* 49 (Suppl.), #5399.
114. <sup>†</sup>Tucker K., Hervig R., <sup>†</sup>Mane P., <sup>†</sup>Romaniello S., and Wadhwa M. (2014) Hydrogen isotope systematics of maskelynites in the shergottites Zagami, QUE 94201 and Tissint: Terrestrial contamination or deuteric alteration? *Lunar and Planetary Science Conference XXXXV*, #2190.
115. Wadhwa M. (2014) The solar system's violent beginning recorded in refractory inclusions [INVITED]. *Goldschmidt Abstracts*, #2601.
116. Wadhwa M., Kita N. T., Nakashima D., Bullock E. S., MacPherson G. J., <sup>†</sup>Bouvier A. (2014) High precision <sup>26</sup>Al-<sup>26</sup>Mg systematics for an almost pristine refractory inclusion: Implications for the absolute age of the solar system. *Lunar and Planetary Science Conference XXXXV*, #2698.
117. <sup>†</sup>Williams C. D., <sup>†</sup>Romaniello S., and Wadhwa M. (2014) Titanium isotopic compositions of CAIs from the Axtell and Leoville carbonaceous chondrites. *Goldschmidt Abstracts*, #2712.
118. <sup>†</sup>Williams C. D., Mendybaev R. A., Ushikubo T., Bullock E. S., <sup>†</sup>Janney P. E., Kita N. T., Richter F. M., MacPherson G. J., Wadhwa M. (2014) Mass dependent Mg and Si isotopic fractionation of Allende FUN CAI CMS-1: Implications for thermal and chemical evolution of the early solar system. *Lunar and Planetary Science Conference XXXXV*, #2146.
119. <sup>†</sup>Bouvier A., <sup>†</sup>Romaniello S. J., Wadhwa M., Korotev R., and Hartmann W. K. (2013) Pb-Pb dating of Apollo 67016 and MIL 090034 lunar impact breccias. *Meteoritics and Planetary Science* 48 (Suppl.), #5312.
120. <sup>†</sup>Brennecka G., Borg L. E., Symes J. K., and Wadhwa M. (2013) The age of Tissint: Sm-Nd and Rb-Sr isotope systematics of a martian meteorite fall. *Lunar and Planetary Science Conference XXXXIV*, #1786.
121. <sup>†</sup>Brennecka G., Borg L. E., and Wadhwa M. (2013) Evidence of supernova injection into the solar nebula and decoupling of r-process nucleosynthesis. *Goldschmidt Abstracts*, DOI:10.1180/minmag.2013.077.5.2.

122. Ding S., Dasgupta R., Lee C-T., and Wadhwa M. (2013) New bulk sulfur measurements of martian meteorites – Implications for sulfur cycle on Mars. Abstract MR23B-2362 presented at 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec.
123. Goldmann A., <sup>†</sup>Brennecka G., Noordmann J., Weyer S., and Wadhwa M. (2013) The <sup>238</sup>U/<sup>235</sup>U of the Earth and Solar System. *Goldschmidt Abstracts*, DOI:10.1180/minmag.2013.077.5.7.
124. <sup>†</sup>Hines R., Garvie L. A. J., <sup>†</sup>Morris M. A., and Wadhwa M. (2013) A new and advanced curation facility for extraterrestrial materials at Arizona State University. *Meteoritics and Planetary Science* 48 (Suppl.), #5120.
125. <sup>†</sup>Mane P., Hervig R., Wadhwa M., Balta B., and McSween H. Y., Jr. (2013) Hydrogen isotopic composition of Tissint, the newest martian meteorite fall. *Lunar and Planetary Science Conference XXXIV*, #2220.
126. <sup>†</sup>Mane P., Wadhwa M., and Keller L. P. (2013) Trace element abundances in an unusual hibonite-perovskite refractory inclusion from Allende. *Meteoritics and Planetary Science* 48 (Suppl.), #5268.
127. Wadhwa M., <sup>†</sup>Bouvier A., and <sup>†</sup>Janney P. (2013) Al-Mg systematics in a CAI from the NWA 6991 CV3 chondrite. *Meteoritics and Planetary Science* 48 (Suppl.), #5253.
128. <sup>†</sup>Williams C. D., Hervig R. L., Wadhwa M., Bullock E. M., and MacPherson G. J. (2013) Rare earth element concentrations in Allende FUN CAI CMS-1. *Meteoritics and Planetary Science* 48 (Suppl.), #5108.
129. <sup>†</sup>Williams C. D., Ushikubo T., MacPherson G. J., Bullock E. S., Kita N. T., and Wadhwa M. (2013) Oxygen isotope systematics of Allende FUN CAI CMS-1. *Lunar and Planetary Science Conference XXXIV*, #2435.
130. Balta J. B., McSween H. Y., Jr., <sup>†</sup>Sanborn M. E., and Wadhwa M. (2012) Multiple lines of evidence for degassing of water from olivine-phyric shergottite LAR 06319. *Geological Society of America Abstracts with Programs*, Vol. 44, 166.
131. <sup>†</sup>Brennecka G. A., Borg L. E., and Wadhwa M. (2012) Combined stable isotope signatures in Allende CAIs: The nucleosynthetic conundrum. *Lunar and Planetary Science Conference XXXIII*, #2006.
132. <sup>†</sup>Brennecka G. A., Borg L. E., and Wadhwa M. (2012) The age of Tissint: Sm-Nd and Rb-Sr systematics. *Meteoritics and Planetary Science* 47 (Suppl.), #5157.
133. Goldman A., <sup>†</sup>Brennecka G. A., Noordmann J., Weyer S., Wadhwa M., and Zipfel J. (2012) Uranium isotope composition of the Earth and the Solar System. *European Mineralogical Conference*, Vol. 1, EMC2012-479.
134. Heber V. S., Jurewicz A. J. G., <sup>†</sup>Janney P., Wadhwa M., McKeegan K. D., and Burnett D. S. (2012) Magnesium isotopic composition of solar wind as test for isotopically fractionated solar wind. *Lunar and Planetary Science Conference XXXIII*, #2921.
135. <sup>†</sup>Sanborn M. E., Carlson R. W., and Wadhwa M. (2012) Internal Lu-Hf isochrons for the quenched and plutonic angrites and their chronological implications. *Lunar and Planetary Science Conference XXXIII*, #2039.
136. <sup>†</sup>Sanborn M. E., Wadhwa M., Balta B., and McSween H. Y., Jr. (2012) Trace element geochemistry of Tissint, the newest shergottite fall. *Meteoritics and Planetary Science* 47 (Suppl.), #5100.
137. <sup>†</sup>Spivak-Birndorf L. J., Wadhwa M., and <sup>†</sup>Janney P. E. (2012) <sup>60</sup>Fe-<sup>60</sup>Ni systematics of Chainpur chondrules and the plutonic angrites Northwest Africa 4590 and 4801. *Lunar and Planetary Science Conference XXXIII*, #2861.
138. <sup>†</sup>Spivak-Birndorf L. J., Wadhwa M., and <sup>†</sup>Janney P. E. (2012) The <sup>60</sup>Fe-<sup>60</sup>Ni systematics of chondrules from unequilibrated ordinary chondrites. *Meteoritics and Planetary Science* 47 (Suppl.), #5365.
139. <sup>†</sup>Williams C. D., Wadhwa M., <sup>†</sup>Janney P. E., <sup>†</sup>Hines R. R., Bullock E. S., and MacPherson G. J. (2012) The measurement of titanium isotope compositions of Allende refractory inclusions by LA-MC-ICPMS. *Lunar and Planetary Science Conference XXXIII*, #2523.
140. <sup>†</sup>Williams C. D., Wadhwa M., <sup>†</sup>Janney P. E., <sup>†</sup>Hines R. R., Bullock E. S., and MacPherson G. J. (2012) Ti, Si and Mg isotope systematics of FUN CAI CMS-1. *Meteoritics and Planetary Science* 47 (Suppl.), #5102.
141. Amelin Y., Yin Q.-Z., Krot A. N., <sup>†</sup>Bouvier A., Wadhwa M., Kleine T., and Nyquist L. E. (2011) Progress in the early Solar System chronology: A sketch of an ever-changing landscape. *Workshop on Formation of the First Solids in the Solar System*, #9055.
142. <sup>†</sup>Bouvier A., <sup>†</sup>Brennecka G. A., <sup>†</sup>Sanborn M. E., and Wadhwa M. (2011) U-Pb chronology of a newly recovered angrite. *Lunar and Planetary Science Conference XXXII*, #2747.
143. <sup>†</sup>Bouvier A., <sup>†</sup>Brennecka G. A., <sup>†</sup>Sanborn M. E., and Wadhwa M. (2011) The formation of the angritic crust. *Goldschmidt Abstracts, Mineralogical Magazine* 75(3), 565.

144. †Bouvier A., †Brennecka G. A., and Wadhwa M. (2011) Absolute chronology of the first solids in the Solar System. *Workshop on Formation of the First Solids in the Solar System*, #9054.
145. †Bouvier A., Wadhwa M., Korotev R. L., and Hartmann W. K. (2011) U-Pb chronology of two lunar impact melt breccias. *Meteoritics and Planetary Science* 46 (Suppl.), #5185.
146. †Brennecka G. A. and Wadhwa M. (2011) Uranium isotope compositions of mineral separates from a single refractory inclusion. *Meteoritics and Planetary Science* 46 (Suppl.), #5030.
147. †Brennecka G. A. and Wadhwa M. (2011)  $^{238}\text{U}/^{235}\text{U}$  ratios of angrites. *Goldschmidt Abstracts, Mineralogical Magazine* 75(3), 579.
148. †Brennecka G. A., Borg L. E., and Wadhwa M. (2011) Barium, neodymium and samarium isotope composition of Allende CAIs. *Lunar and Planetary Science Conference XXXXII*, #1302.
149. †Brennecka G. A., Borg L. E., and Wadhwa M. (2011) Barium, neodymium, and samarium isotopic composition of CAIs: Nucleosynthetic anomalies? *Workshop on Formation of the First Solids in the Solar System*, #9036.
150. Heber V. S., Jurewicz A. J. G., †Janney P., Wadhwa M., McKeegan K. D., and Burnett D. S. (2011) Mg isotopic composition of the solar wind by SIMS analysis of Genesis targets. *Meteoritics and Planetary Science* 46 (Suppl.), #5510.
151. †Morris M. A., †Janney P. E., †Hines R., and Wadhwa M. (2011)  $^{26}\text{Al}$ - $^{26}\text{Mg}$  systematics of selected chondrules from Allende and Semarkona. *Lunar and Planetary Science Conference XXXXII*, #2773.
152. †Sanborn M. E., Carlson R. W., and Wadhwa M. (2011)  $^{147,146}\text{Sm}$ - $^{143,142}\text{Nd}$  and  $^{87}\text{Rb}$ - $^{87}\text{Sr}$  systematics of the angrites Northwest Africa 4590, Northwest Africa 4801, and D'Orbigny. *Lunar and Planetary Science Conference XXXXII*, #2369.
153. †Sanborn M. E., Wadhwa M., Balta J. B., Mayne R., and McSween H. Y. Jr. (2011) Trace element geochemistry of the nakhlite Northwest Africa 5790. *Meteoritics and Planetary Science* 46 (Suppl.), #5122.
154. †Spivak-Birndorf L. J., Wadhwa M., and †Janney P. E. (2011)  $^{60}\text{Fe}$ - $^{60}\text{Ni}$  chronology of the D'Orbigny angrite: Implications for the initial Solar System abundance of  $^{60}\text{Fe}$ . *Lunar and Planetary Science Conference XXXXII*, #2281.
155. †Spivak-Birndorf L. J., Wadhwa M., and †Janney P. E. (2011)  $^{60}\text{Fe}$ - $^{60}\text{Ni}$  Systematics in the Angrites. *Meteoritics and Planetary Science* 46 (Suppl.), #5442.
156. †Spivak-Birndorf L. J., Wadhwa M., and †Janney P. E. (2011)  $^{60}\text{Fe}$ - $^{60}\text{Ni}$  Chronology of Angrites. *Workshop on Formation of the First Solids in the Solar System*, #9130.
157. Wadhwa M., †Bouvier A., and †Brennecka G. (2011) Concordant early Solar System timescales from Pb-Pb and extinct chronometers. *Meteoritics and Planetary Science* 46 (Suppl.), #5417.
158. Wadhwa M., Tang H., †Spivak-Birndorf L., Dauphas N., and †Janney P. (2011) Initial abundance of  $^{60}\text{Fe}$  in the inner Solar System: Evidence from differentiated asteroids. *Workshop on Formation of the First Solids in the Solar System*, #9132.
159. †Williams C. D., Wadhwa M., and Bell D. R. (2011) Lithium isotope measurements of pyroxenes and evaluation of matrix effects in SIMS analyses: Application to martian meteorites. *Lunar and Planetary Science Conference XXXXII*, #2398.
160. †Williams C. D., Wadhwa M., †Janney P. E., †Hines R. R., Bullock E. S., and MacPherson G. J. (2011) Analysis of titanium isotope ratios in refractory inclusions by LA-MC-ICPMS. *Meteoritics and Planetary Science* 46 (Suppl.), #5434.
161. †Bouvier A. and Wadhwa M. (2010) Pb-Pb isotope dating of the unique basaltic achondrite NWA 2976. *Lunar and Planetary Science Conference XXXXI*, #1489.
162. †Bouvier A., †Brennecka G., and Wadhwa M. (2010) Refining the U-Pb Chronology of the Early Solar System [INVITED]. *Goldschmidt Abstracts, Geochimica Cosmochimica Acta* 74, A111.
163. †Bouvier A., Wadhwa M., Bullock E., and MacPherson G. (2010) Pb-Pb dating of a CAI from the reduced CV3 chondrite Vigarano. *Meteoritics and Planetary Science* 45 (Suppl.), #5400.
164. †Brennecka G., Borg L., and Wadhwa M. (2010) Barium isotope compositions of Allende refractory inclusions: r-process excesses and evidence for  $^{138}\text{La}$  decay. *Meteoritics and Planetary Science* 45 (Suppl.), #5318.
165. †Brennecka G. A., Wadhwa M., and Anbar A. D. (2010) Uranium isotope variations in meteorites: Implications for high-precision chronology and short-lived radioactivities in the early Solar System. *AbGradCon* 2010.
166. †Brennecka G. A., Wadhwa M., †Janney P. E., and Anbar A. D. (2010) Towards reconciling early Solar System chronometers: The  $^{238}\text{U}/^{235}\text{U}$  ratios of chondrites and D'Orbigny pyroxenes. *Lunar and Planetary Science Conference XXXXI*, #2117.

167. †Hines R., Taylor W., Minitti M. E., and Wadhwa M. (2010) Bringing outer space into the classroom: Loanable space science modules from the Center for Meteorite Studies and Mars Education Program at Arizona State University. *Lunar and Planetary Science Conference XXXXI*, #2617.
168. Rieck K., Jurewicz A. J. G., Wadhwa M., Burnett D., Hervig R., and Wiens R. (2010) SIMS measurements of Mg isotopes in solar wind. *Lunar and Planetary Science Conference XXXXI*, #2391.
169. †Sanborn M. E. and Wadhwa M. (2010) Rare earth element geochemistry of quenched angrites Northwest Africa 1296 and Northwest Africa 1670. *Lunar and Planetary Science Conference XXXXI*, #1490.
170. †Sanborn M. and Wadhwa M. (2010) Trace element geochemistry of the basaltic shergottite Northwest Africa 2975. *Meteoritics and Planetary Science* 45 (Suppl.), #5294.
171. †Spivak-Birndorf L. J., †Bouvier A., Wadhwa M., Bland P. A., and Spurný P. (2010) Trace element geochemistry and chronology of the Bunburra Rockhole basaltic achondrite. *Lunar and Planetary Science Conference XXXXI*, #2274.
172. †Spivak-Birndorf L., Wadhwa M. and †Janney P. (2010)  $^{60}\text{Fe}$ - $^{60}\text{Ni}$  isotope systematics of bulk ureilites. *Meteoritics and Planetary Science* 45 (Suppl.), #5393.
173. †Williams C., Wadhwa M., and Bell D. R. (2010) Fluorine abundances and zonation patterns in martian pyroxenes. *Meteoritics and Planetary Science* 45 (Suppl.), #5390.
174. †Williams C., Wadhwa M., Bell D., and Hervig R. (2010) Light lithophile element microdistributions in pyroxenes of the martian meteorites. *Lunar and Planetary Science Conference XXXXI*, #2641.
175. †Bouvier A. and Wadhwa M. (2009) Synchronizing the absolute and relative clocks: Pb-Pb and Al-Mg systematics in CAIs from the Allende and NWA 2364 CV3 chondrites. *Lunar and Planetary Science Conference XXXX*, #2184.
176. †Bouvier A. and Wadhwa M. (2009)  $^{26}\text{Al}$ - $^{26}\text{Mg}$  internal isochrons for two CAIs from the Leoville CV3 chondrite. *Meteoritics and Planetary Science* 44 (Suppl.), #5408.
177. †Bouvier A., Wadhwa M., Simon S. B., and Grossman L. (2009) Magnesium isotope compositions of chondrules from the Murchison and Murray carbonaceous chondrites. *Lunar and Planetary Science Conference XXXX*, #2193.
178. †Brennecka G. A., Weyer S., Wadhwa M., †Janney P. E., and Anbar A. (2009)  $^{238}\text{U}/^{235}\text{U}$  variations in CAIs: Implications for Pb-Pb dating. *Lunar and Planetary Science Conference XXXX*, #1061.
179. †Brennecka G. A., Weyer S., Wadhwa M., †Janney P. E., Anbar A. D., and Zipfel J. (2009)  $^{238}\text{U}/^{235}\text{U}$  variations in meteoritic materials: Evidence for  $^{247}\text{Cm}$  in the early Solar System and implications for Pb-Pb dating. *Meteoritics and Planetary Science* 44 (Suppl.), #5303.
180. †Hines R., †Stopar J., Taylor W., Minitti M. E. and Wadhwa M. (2009) Enhancing and expanding educational outreach programs at the Center for Meteorite Studies, Arizona State University. *Lunar and Planetary Science Conference XXXX*, #1875.
181. †Janney P. E., Richter F. M., Mendybaev R., and Wadhwa M. (2009) Characterization of matrix effects during in situ Mg and Si isotope measurements by LA-MC-ICPMS. *Eos Trans. AGU* 90, Fall Meeting Suppl., V34B-04.
182. Jurewicz A. J. G., Hervig R., Burnett D. S., Wiens R., Wadhwa M., and Rieck K. (2009) Fractionation of Mg isotopes between the Sun's photosphere and the solar wind. *Meteoritics and Planetary Science* 44 (Suppl.), #5422.
183. †Sanborn M. and Wadhwa M. (2009) Rare earth element geochemistry of angrites Northwest Africa 4590 and Northwest Africa 4801. *Lunar and Planetary Science Conference XXXX*, #1345.
184. †Sanborn M. E., Carlson R., and Wadhwa M. (2009)  $^{87}\text{Rb}$ - $^{87}\text{Sr}$  and  $^{147,146}\text{Sm}$ - $^{143,142}\text{Nd}$  systematics in the angrite Northwest Africa 2999. *Meteoritics and Planetary Science* 44 (Suppl.), #5399.
185. †Spivak-Birndorf L. and Wadhwa M. (2009)  $^{26}\text{Al}$ - $^{26}\text{Mg}$  systematics in Brachina and the unique achondrite GRA 06129. *Lunar and Planetary Science Conference XXXX*, #2131.
186. †Spivak-Birndorf L. and Wadhwa M. (2009)  $^{26}\text{Al}$ - $^{26}\text{Mg}$  chronology of the unique basaltic achondrite Northwest Africa 2976. *Meteoritics and Planetary Science* 44 (Suppl.), #5390.
187. Wadhwa M. and †Bouvier A. (2009) The age of the Solar System revisited. *Eos Trans. AGU* 90, Fall Meeting Suppl., P12B-03.
188. Wadhwa M., †Janney P. E., and Krot A. N. (2009) Evidence of disturbance in the  $^{26}\text{Al}$ - $^{26}\text{Mg}$  systematics of the Efremovka E60 CAI: Implications for the high-resolution chronology of the early Solar System. *Lunar and Planetary Science Conference XXXX*, #2495.
189. Wadhwa M., †Janney P. E., and Krot A. N. (2009) Al-Mg isotope systematics in the Efremovka E60 CAI: Evidence of re-equilibration. *Meteoritics and Planetary Science* 44 (Suppl.), #5431.

190. Weyer S., <sup>†</sup>Brennecke G., Zipfel J., Wadhwa M., and Anbar A. D. (2009) U isotope variations in CAIs: Implications for the age of the Solar System. *Goldschmidt Abstracts, Geochimica Cosmochimica Acta* 73, A1433.
191. Weyer S., <sup>†</sup>Brennecke G., Montoya Pino C., Noordman J., Shauble E. A., Wadhwa M., and Anbar A. D. (2009) Natural Variation of <sup>238</sup>U/<sup>235</sup>U in Geo- and Cosmochemistry. *Eos Trans. AGU* 90, Fall Meeting Suppl., V54C-05.
192. Amelin Y., <sup>†</sup>Janney P., Chakrabarti R., Wadhwa M., and Jacobsen S. B. (2008) Isotopic analysis of small Pb samples using MC-ICPMS: The limits of precision and comparison to TIMS. *Eos Trans. AGU* 89, Fall Meeting Suppl., V13A-2088.
193. <sup>†</sup>Bouvier A., Wadhwa M., and <sup>†</sup>Janney P. (2008) Pb-Pb systematics in an Allende chondrule. *Goldschmidt Conference Abstracts, Geochimica Cosmochimica Acta* 72, A106.
194. <sup>†</sup>Bouvier A., Wadhwa M., and <sup>†</sup>Janney P. (2008) <sup>26</sup>Al-<sup>26</sup>Mg and <sup>207</sup>Pb-<sup>208</sup>Pb systematics in an Allende inclusion. *Meteoritics and Planetary Science* 43 (Suppl.), #5299.
195. Dauphas N., <sup>†</sup>Cook D., Sacarabany A., Fröhlich C., Davis A. M., Wadhwa M., Pourmand A., Rauscher T., and Gallino R. (2008) Iron-60 injection in the protosolar nebula: How early and how well mixed? *Lunar and Planetary Science Conference XXXIX*, #1170.
196. Dauphas N., <sup>†</sup>Cook D., Sacarabany A., Fröhlich C., Davis A. M., Wadhwa M., Pourmand A., Rauscher T., and Gallino R. (2008) Iron-60 in the cosmic blender [MEDAL]. *Geochimica et Cosmochimica Acta*, 72(12) Supplement 200.
197. <sup>†</sup>Hines R., Taylor W., and Wadhwa M. (2008) Space Rocks! Increasing the impact of educational initiatives at the Center for Meteorite Studies, Arizona State University. *Lunar and Planetary Science Conference XXXIX*, #2513.
198. <sup>†</sup>Sanborn M. E., Wadhwa M., Hervig R., and Irving A. J. (2008) Rare earth element geochemistry of angrite Northwest Africa 2999. *Lunar and Planetary Science Conference XXXIX*, #1395.
199. <sup>†</sup>Sanborn M. E., Wadhwa M., Usui T., and McSween H. Y., Jr. (2008) REE distributions in shergottites RBT 04261 and 04262. *Geochimica et Cosmochimica Acta*, 72(12) Supplement 821.
200. <sup>†</sup>Spivak-Birndorf L. J., Wadhwa M., and Williams L. B. (2008) The boron isotopic composition of Nakhla iddingsite. *Lunar and Planetary Science Conference XXXIX*, #1904.
201. <sup>†</sup>Spivak-Birndorf L. J., Wadhwa M., and Williams L. B. (2008) Boron isotopic composition of igneous minerals and secondary alteration products in Nakhla. *Workshop on Ground Truth from Mars: Science Payoff from a Sample Return Mission*, LPI Contribution No. 1401, 95-96.
202. <sup>†</sup>Spivak-Birndorf L. J., Wadhwa M. and Williams L. B. (2008) Boron isotopes in nakhlites: Implications for crustal fluids on Mars [INVITED]. *Geochimica et Cosmochimica Acta*, 72(12) Supplement 889.
203. Usui T., <sup>†</sup>Sanborn M., Wadhwa M. and McSween H. Y., Jr. (2008) Petrogenesis of geochemically enriched Iherzolitic shergottites RBT 04261 and RBT 04261. *Meteoritics and Planetary Science* 43 (Suppl.), #5052.
204. <sup>†</sup>Cook D. L., Clayton R. N., Wadhwa M., <sup>†</sup>Janney P. E., and Davis A. M. (2007) Nickel isotope systematics in troilite from magmatic and non-magmatic iron meteorites. *Lunar and Planetary Science Conference XXXVIII*, #2287.
205. MacPherson G. J., Bullock E. S., <sup>†</sup>Janney P., Davis A. M., Wadhwa M., and Krot A. N. (2007) High-precision Al-Mg isotope studies of condensate CAIs. *Lunar and Planetary Science Conference XXXVIII*, #1378.
206. <sup>†</sup>Qin L., Dauphas N., Wadhwa M., Markowski A., Gallino R., and <sup>†</sup>Janney P. E. (2007) Tungsten nuclear anomalies in iron meteorites and implications for Hf-W chronology. *Lunar and Planetary Science Conference XXXVIII*, #1771.
207. <sup>†</sup>Qin L., Dauphas N., Wadhwa M., Masarik J., and <sup>†</sup>Janney P. (2007) Combining Hf-W ages, cooling rates and thermal models to estimate the accretion time of iron meteorite parent bodies. *Eos Trans. AGU* 88 (52), Fall Meeting Suppl., V32B-07.
208. <sup>†</sup>Teng F.-Z., Wadhwa M., <sup>†</sup>Janney P. E., Grossman L., Simon S., and Dauphas N. (2007) Magnesium isotopic systematics of chondrules and CAIs from Allende, Murchison, Murray and Bjurböle. *Lunar and Planetary Science Conference XXXVIII*, #1837.
209. <sup>†</sup>Teng F.-Z., Wadhwa M., Helz R. T., and Richter F. M. (2007) The absence of magnesium isotope fractionation during basalt differentiation. *Geochimica et Cosmochimica Acta*, 71(15) Supplement 1014.
210. Wadhwa M. (2007) Advances in isotope cosmochemistry and high-resolution chronology using extinct radionuclides [INVITED]. *Eos Trans. AGU* 88 (52), Fall Meeting Suppl., V32B-08.



211. Amelin Y., Wadhwa M., and Lugmair G. W. (2006) Pb-isotopic dating of meteorites using the  $^{202}\text{Pb}$ - $^{205}\text{Pb}$  double-spike: Comparison with other high-resolution chronometers. *Lunar and Planetary Science Conference XXXVII*, #1970.
212. Borg L. and Wadhwa M. (2006)  $\epsilon^{142}\text{Nd} - \epsilon^{143}\text{Nd}$  isotopic evidence for protracted lunar differentiation. *Lunar and Planetary Science Conference XXXVII*, #1154.
213. <sup>†</sup>Cook D. L., Wadhwa M., Davis A. M., and Clayton R. N. (2006) Heterogeneity of the Hoba IVB iron meteorite: Implications for its use as an analytical standard. *Lunar and Planetary Science Conference XXXVII*, #2116.
214. <sup>†</sup>Cook D. L., Wadhwa M., Clayton R. N., <sup>†</sup>Janney P. E., Dauphas N., and Davis A. M. (2006) Mass dependent fractionation of nickel isotopes in IIIAB irons. *Meteoritics and Planetary Science* 41 (Suppl.), #5167.
215. Dauphas N., Cates N. L., Mojzsis S. J., van Zuilen M., Wadhwa M., <sup>†</sup>Janney P. E., Busigny V., and Davis A. M. (2006) The iron isotopic composition of 3.7-3.8 Ga chemical sediments: Comparison between Isua (Greenland) and Nuvvuagittuq (Northern Québec). *Lunar and Planetary Science Conference XXXVII*, #1053.
216. <sup>†</sup>Qin L., Dauphas N., Wadhwa M., <sup>†</sup>Janney P. E., Davis A. M., and Mazarik J. (2006) Evidence of correlated cosmogenic effects in iron meteorites: Implications for the timing of metal-silicate differentiation in asteroids. *Lunar and Planetary Science Conference XXXVII*, #1771.
217. <sup>†</sup>Qin L., Dauphas N., Wadhwa M., and <sup>†</sup>Janney P. E. (2006) High precision tungsten isotope measurements of iron meteorites. *Meteoritics and Planetary Science* 41 (Suppl.), #5267.
218. Richter F. M., <sup>†</sup>Janney P. E., Mendybaev R., Davis A. M., and Wadhwa M. (2006) Recondensation reconsidered: Effects in evaporation experiments and in natural settings. *Lunar and Planetary Science Conference XXXVII*, #2353.
219. Wadhwa M. and Borg L. (2006) Trace element and  $\epsilon^{142}\text{Nd}$  systematics in the nakhlite MIL 03346 and the orthopyroxenite ALH 84001: Implications for the martian mantle. *Lunar and Planetary Science Conference XXXVII*, #2045.
220. <sup>†</sup>Cook D. L., Wadhwa M., Clayton R. N., <sup>†</sup>Janney P. E., Dauphas N., and Davis A. M. (2005) Nickel isotopic composition of Fe-Ni metal from iron meteorites and the Brenham pallasite. *Lunar and Planetary Science Conference XXXVI*, #1779.
221. <sup>†</sup>Cook D. L., Wadhwa M., Clayton R. N., <sup>†</sup>Janney P. E., Dauphas N., and Davis A. M. (2005) Nickel isotopic composition of meteoritic metal: Implications for the initial  $^{60}\text{Fe}/^{56}\text{Fe}$  ratio in the early solar system. *Meteoritics and Planetary Science* 40 (Suppl.), A33.
222. Davis A. M., Richter F. M., Mendybaev R. A., <sup>†</sup>Janney P. E., Wadhwa M., and McKeegan K. D. (2005) Isotopic mass fractionation laws and initial solar system  $^{26}\text{Al}/^{27}\text{Al}$  ratio. *Lunar and Planetary Science Conference XXXVI*, #2334.
223. Dauphas N., <sup>†</sup>Foley C. N., Wadhwa M., Davis A. M., <sup>†</sup>Janney P. E., <sup>†</sup>Qin L., Göpel C., and Birck J.-L. (2005) Protracted core differentiation in asteroids from  $^{182}\text{Hf}$ - $^{182}\text{W}$  systematics in the Eagle Station pallasite. *Lunar and Planetary Science Conference XXXVI*, #1110.
224. <sup>†</sup>Janney P. E., Richter F. M., Davis A. M., Mendybaev R. A., and Wadhwa M. (2005) Silicon isotope ratio variations in CAI evaporation residues measured by laser ablation multicollector ICPMS. *Lunar and Planetary Science Conference XXXVI*, #2123.
225. <sup>†</sup>Qin L., Dauphas N., <sup>†</sup>Janney P. E., Wadhwa M., and Davis A. M. (2005) High precision W isotope measurements (180, 182, 183, 184, and 186) of iron meteorites. *Meteoritics and Planetary Science* 40 (Suppl.), A124.
226. Richter F. M., <sup>†</sup>Janney P. E., Mendybaev R. A., Davis A. M., and Wadhwa M. (2005) On the temperature dependence of the kinetic isotope fractionation of Type B CAI-like melts during evaporation. *Lunar and Planetary Science Conference XXXVI*, #2124.
227. <sup>†</sup>Spivak-Birndorf L., Wadhwa M., <sup>†</sup>Janney P. E., and <sup>†</sup>Foley C. N. (2005) Al-Mg isotopic systematics in the angrite Sahara 99555 and the primitive achondrite Brachina. *Lunar and Planetary Science Conference XXXVI*, #2201.
228. <sup>†</sup>Spivak-Birndorf L., Wadhwa M., and <sup>†</sup>Janney P. E. (2005)  $^{26}\text{Al}$ - $^{26}\text{Mg}$  chronology of the D'Orbigny and Sahara 99555 angrites. *Meteoritics and Planetary Science* 40 (Suppl.), A145.
229. Wadhwa M. (2005) From dust to planets: Timescales of accretion and differentiation in the early solar system [INVITED]. *Geochimica et Cosmochimica Acta*, 69(10) Supplement 385.
230. Wadhwa M., Amelin Y., Bogdanovski O., Lugmair G. W., and <sup>†</sup>Janney P. E. (2005) High precision relative and absolute ages for Asuka 881394, a unique and ancient basalt. *Lunar and Planetary Science Conference XXXVI*, #2126.

231. Corrigan C., Wadhwa M., and Harvey R. P. (2004) Rare earth element measurements of multi-generational (?) carbonate in martian meteorite Allan Hills 84001. *Lunar and Planetary Science Conference XXXV*, #1611.
232. <sup>†</sup>Dauphas N., <sup>†</sup>Foley N., Wadhwa M., Davis A. M., Gopel C., Birck J.-L., <sup>†</sup>Janney P. E., and Gallino R. (2004) Testing the homogeneity of the solar system for iron (54, 56, 57, and 58) and tungsten (182, 183, 184, and 186) isotopic abundances. *Lunar and Planetary Science Conference XXXV*, #1498.
233. <sup>†</sup>Dauphas N., Davis A. M., Mendybaev R., Richter F. M., Wadhwa M., <sup>†</sup>Janney P. E., and <sup>†</sup>Foley N. (2004) Iron isotopic fractionation during vacuum evaporation of molten wustite and solar compositions. *Lunar and Planetary Science Conference XXXV*, #1585.
234. <sup>†</sup>Foley C. N., Wadhwa M., Borg L. E., and <sup>†</sup>Janney P. E. (2004) The differentiation history of mantle reservoirs on Mars from W and Nd isotopic compositions of SNC meteorites. *Lunar and Planetary Science Conference XXXV*, #1879.
235. Foley C. N., Wadhwa M., Borg L. E., and Janney P. E. (2004) Implications of isotopic and redox heterogeneities in silicate reservoirs on Mars. *Workshop on Oxygen in the Terrestrial Planets*, #3006.
236. <sup>†</sup>Janney P. E., Mendybaev R., <sup>†</sup>Dauphas N., Davis A. M., Richter F. M., and Wadhwa M. (2004) "Nonideal" isotopic fractionation behavior of magnesium in evaporation residues. *Lunar and Planetary Science Conference XXXV*, #2092.
237. Wadhwa M., <sup>†</sup>Foley C. N., and <sup>†</sup>Janney P. E. (2004) <sup>26</sup>Al-<sup>26</sup>Mg systematics in eucrites: Implications for <sup>26</sup>Al as a chronometer and heat source for planetesimal differentiation. *European Geosciences Union 1<sup>st</sup> General Assembly*, #EGU04-A-06981.
238. Wadhwa M., <sup>†</sup>Foley C. N., <sup>†</sup>Janney P. E., and <sup>†</sup>Spivak-Birndorf L. (2004) Mg isotopic Systematics in eucrites: Implications for the <sup>26</sup>Al-<sup>26</sup>Mg chronometer. *Lunar and Planetary Science Conference XXXV*, #1843.
239. <sup>†</sup>Dauphas N., Rouxel O., Davis A. M., Lewis R. S., Wadhwa M., Marty B., Reisberg L., <sup>†</sup>Janney P., and Zimmermann C. (2003) Iron and selenium isotopic homogeneity in the protosolar nebula? *Lunar and Planetary Science Conference XXXIV*, #1807.
240. <sup>†</sup>Foley C. N., Wadhwa M., and <sup>†</sup>Janney P. E. (2003) Tungsten isotopic composition of the SNC meteorite Los Angeles: further implications for early differentiation history of Mars. *Lunar and Planetary Science Conference XXXIV*, #2117.
241. <sup>†</sup>Foley C. N., Wadhwa M., and <sup>†</sup>Janney P. E. (2003) Tungsten isotopic compositions of the SNC meteorites: further implications for early differentiation history of Mars. *Sixth International Conference on Mars*, #3163.
242. <sup>†</sup>Janney P. E., Davis A. M., Wadhwa M., Mendybaev R. A., and Richter F. M. (2003) High precision magnesium isotopic measurement of CAI evaporation residues. *Lunar and Planetary Science Conference XXXIV*, #1940.
243. Leshin L. A., Clark B., Forney L., Jones S., Jurewicz A., Greeley R., Richardson M., Sharp T., Thiemens M., Wadhwa M., Wiens R., Yen A., and Zolensky M. (2003) Scientific return of a Mars dust sample capture and earth return with SCIM. *Lunar and Planetary Science Conference XXXIV*, #1288.
244. McCoy T. J., Wilson L., Benedix G. K., Ketcham R. A., Wadhwa M., Davis A., and Carlson W. D. (2003) Vesicular eucrites: Where and how did they form and why are they so rare? *Lunar and Planetary Science Conference XXXIV*, #1187.
245. Simon S. B., Wacker J. F., Clayton R. N., Mayeda T. K., Schwade J. R., Sipiera P. P., Grossman L., and Wadhwa M. (2003) The fall, recovery and classification of the Park Forest meteorite. *Meteoritics and Planetary Science* 38 (Suppl.), A139.
246. Wadhwa M. and Crozaz G. (2003) Trace element geochemistry of new nakhlites from the Antarctic and the Saharan desert: Further constraints on nakhlite petrogenesis on Mars. *Lunar and Planetary Science Conference XXXIV*, #2075.
247. Wadhwa M., <sup>†</sup>Foley C. N., and <sup>†</sup>Janney P. E. (2003) High precision Mg isotopic analyses of achondrites: Is the <sup>26</sup>Al-<sup>26</sup>Mg chronometer concordant with other high resolution chronometers? *Geochimica et Cosmochimica Acta*, 67(18) Supplement 517.
248. Wadhwa M., <sup>†</sup>Foley C. N., <sup>†</sup>Janney P. E. and Beecher N. A. (2003) Magnesium isotopic composition of the Juvinas eucrite: implications for concordance of the Al-Mg and Mn-Cr chronometers and timing of basaltic volcanism on asteroids. *Lunar and Planetary Science Conference XXXIV*, #2055.
249. Crozaz G., Floss C., and Wadhwa M. (2002) Chemical alteration of hot and cold desert meteorites. *Geochimica et Cosmochimica Acta*, 66 Supplement 1 158.

250. Wadhwa M. (2002) What martian meteorites can and cannot tell us about Mars: The context for sample return [INVITED]. *Eos Trans. AGU* 83, Spring Meeting Suppl., P51A-07.
251. Wadhwa M. and Crozaz G. (2002) Trace element abundances in minerals of two new and distinct basaltic shergottites, NWA 856 and NWA 1068. *Meteoritics and Planetary Science* 37 (Suppl.), A145.
252. Wadhwa M. and Grove T. L. (2002) Archean cratons on Mars?: Evidence from trace elements, isotopes and oxidation states of SNC magmas. *Geochimica et Cosmochimica Acta*, 66 Supplement 1 816.
253. Wadhwa M., Sutton S. R., Flynn G. J., and Newville M. (2002) Microdistributions of Rb and Sr in ALH84001 carbonates: Chronological implications for secondary alteration on Mars. *Lunar and Planetary Science Conference XXXIII*, #1362.
254. Crozaz G., Wadhwa M., and Barrat J. A. (2001) Trace elements in NWA 480: Still more diversity in the basaltic shergottite group. *Meteoritics and Planetary Science* 36 (Suppl.), A45.
255. Davis A. M., Dufek J. D., and Wadhwa M. (2001) Euhedral phosphate grains in vugs and vesicles in ordinary chondrites, lunar samples and the Ibitira eucrite: Implications for trace element transport processes. *Meteoritics and Planetary Science* 36 (Suppl.), A47.
256. Gillet Ph., Barrat J. A., Crozaz G., Deloule E., Jambon A., Neuville D., Sautter V., and Wadhwa M. (2001) Aqueous alteration in the NWA 817 martian meteorite. *Meteoritics and Planetary Science* 36 (Suppl.), A66.
257. Wadhwa M. (2001) Geochemical effects of alteration on Mars: Insights from trace element distributions in Martian meteorites [INVITED]. *Eos Trans. AGU*, 82 (47), Fall Meeting Suppl., P51A-05.
258. Wadhwa M., Barrat J. A., and Crozaz G. (2001) Petrogenesis of a new nakhlite from rare earth and other trace element microdistributions. *Meteoritics and Planetary Science* 36 (Suppl.), A217-A218.
259. Wadhwa M., Crozaz G., Lentz R. C. F., and McSween H. Y., Jr. (2001) Trace element microdistributions in Los Angeles: A new basaltic shergottite similar to, yet distinct from, the others. *Lunar and Planetary Science Conference XXXII*, #1106.
260. Wadhwa M. (2000) Quantitative constraints on the redox states of Martian magmas from Eu anomalies in pyroxenes of basaltic shergottites. *Lunar and Planetary Science Conference XXXI*, #1966.
261. Wadhwa M., Lentz R. C. F., McSween H. Y., Jr., and Crozaz G. (2000) Dar al Gani 476 and Dar al Gani 489, twin shergottites from Mars. *Lunar and Planetary Science Conference XXXI*, #1413.
262. Crozaz G. and Wadhwa M. (1999) Chemical alteration of hot desert meteorites: The case of shergottite Dar al Gani 476. *Workshop on extraterrestrial materials from hot and cold deserts*, LPI Contribution No. 997, 25-27.
263. Heim N., Wadhwa M., and Davis A. M. (1999) Rare earth element abundances in vapor deposited minerals in Ibitira vesicles. *Lunar and Planetary Science Conference XXX*, #1908.
264. Wadhwa M., Crozaz G., Lentz R., and McSween H. Y., Jr. (1999) Trace element distributions in the new Saharan martian meteorite Dar al Gani 476: Another bridge between lherzolitic and basaltic shergottites. *Meteoritics and Planetary Science* 34 (Suppl.), A117-A118.
265. Wadhwa M., Shukolyukov A., Davis A. M., and Lugmair G. W. (1999) Origin of silicate clasts in mesosiderites: Trace element distributions and Mn-Cr systematics tell the tale. *Lunar and Planetary Science Conference XXX*, #1707.
266. Wadhwa M. and Davis A. M. (1998) Vapor deposited mineral assemblages in vesicles of the eucrite Ibitira. *Lunar and Planetary Science Conference XXIX*, #1931.
267. Wadhwa M., Shukolyukov A., and Lugmair G. W. (1998)  $^{53}\text{Mn}$ - $^{53}\text{Cr}$  systematics in Brachina: A record of one of the earliest phases of igneous activity on an asteroid. *Lunar and Planetary Science Conference XXIX*, #1480.
268. Wadhwa M., Zipfel J., and Davis A. M. (1998) Constraints on the formation history of brachinites from rare earth element distributions. *Meteoritics and Planetary Science* 33 (Suppl.), A161.
269. Wadhwa M., Weisberg M. K., Crozaz G., and Prinz M. (1998) Did fayalites in the Kaba CV3 chondrite form in an asteroidal or a nebula environment?: Constraints from Mn-Cr systematics. *Lunar and Planetary Science Conference XXIX*, #1484.
270. Wadhwa M. and Davis A. M. (1997) Effects of varying degrees of metamorphic equilibration on trace element distributions in three basaltic clasts from Vaca Muerta. *Lunar and Planetary Science Conference XXVIII*, 1483-1484.

271. Wadhwa M. and Lugmair G. W. (1997) The controversy of young vs. old age of formation of carbonates in ALH84001. *Conference on Early Mars: Geologic and hydrologic evolution, physical and chemical environments, and the implications for life*, LPI Contribution No. 916, 79-80.
272. Wadhwa M., Davis A. M., and Mittlefehldt D. W. (1997) Trace element distributions as indicators of magmatic vs. impact origin: A case study of three Vaca Muerta clasts. *Meteoritics and Planetary Science* 32 (Suppl.), A134.
273. Wadhwa M., McKay G. A., and Crozaz G. (1997) Trace element distributions in Yamato 793605, a chip off the "Martian lherzolite" block. *National Institute of Polar Research 22<sup>nd</sup> Symposium on Antarctic Meteorites*, 197-199.
274. Wadhwa M., Shukolyukov A., and Lugmair G. W. (1997) The relationship between basaltic clasts in mesosiderites and the HED meteorites: Clues from Mn-Cr systematics of two Vaca Muerta clasts. *Lunar and Planetary Science Conference XXVIII*, 1487-1488.
275. Wadhwa M., Zinner E. K., and Crozaz G. (1997) Mn-Cr systematics in sulfides of unequilibrated enstatite chondrites: Parent body vs. nebular processing and implications for accretion times. *Workshop on parent body and nebular modification of chondritic materials*, LPI Technical Report No. 97-02, Part I, 62-63.
276. Wadhwa M., Crozaz G., McSween H. Y., Jr., and Taylor L. A. (1997) Martian basalt QUE94201 and lunar basalt 15555: A tale of two pyroxenes. *Lunar and Planetary Science Conference XXVIII*, 1485-1486.
277. Wadhwa M. and Crozaz G. (1996) QUE94201: A new and different shergottite. *Lunar and Planetary Science Conference XXVII*, 1365-1366.
278. Wadhwa M. and Lugmair G. W. (1996) The formation age of carbonates in ALH84001. *Meteoritics and Planet. Sci.* 31 (Suppl.), A145.
279. McCoy T. J., Wadhwa M., and Keil K. (1995) Zagami: Another new lithology and a complex near-surface magmatic history. *Lunar and Planetary Science Conference XXVI*, 925-926.
280. Wadhwa M. and Crozaz G. (1995) Constraints on the rare earth element characteristics of metasomatizing fluids in the martian meteorite ALH84001. *Lunar and Planetary Science Conference XXVI*, 1451-1452.
281. Wadhwa M. and Lugmair G. W. (1995) Sm-Nd systematics of the eucrite Chervony Kut. *Lunar and Planetary Science Conference XXVI*, 1453-1454.
282. Wadhwa M. and Lugmair G. W. (1995) Samarium-neodymium and manganese-chromium systematics of the eucrite Caldera. *Meteoritics* 30, 592.
283. Wadhwa M. and Crozaz G. (1994) Rare earth element distributions in the Chassigny meteorite: Clues to its petrogenesis and relation to the nakhlites. *Lunar and Planetary Science Conference XXV*, 1451-1452.
284. Wadhwa M. and Crozaz G. (1994) First evidence of infiltration metasomatism in a martian meteorite, ALH84001. *Meteoritics* 29, 545.
285. Wadhwa M. and Crozaz G. (1993) Rare earth elements in individual minerals in shergottites. *Lunar and Planetary Science Conference XXIV*, 1473-1474.
286. Wadhwa M. and Crozaz G. (1993) An ion microprobe study of trace element microdistributions in martian (?) igneous rocks (SNC meteorites). *Geological Society of America Abstracts with Programs* 25, No. 6, A316.
287. Wadhwa M., McCoy T. J., Keil K., and Crozaz G. (1993) The chemical and physical evolution of late-stage melt in Zagami. *Meteoritics* 28, 453.
288. El Goresy A., Wadhwa M., Nagel H.-J., Zinner E. K., Janicke J., and Crozaz G. (1992) <sup>53</sup>Cr-<sup>53</sup>Mn systematics of Mn-bearing sulfides in four enstatite chondrites. *Lunar and Planetary Science Conference XXIII*, 331-332.
289. El Goresy A., Wadhwa M., Zinner E. K., Nagel H.-J., Janicke J., and Crozaz G. (1992) Mn-Cr systematics in sphalerites and niningerites from Qingzhen and Yamato69001: Implications regarding their formation histories. *Meteoritics* 27, 218.
290. Jolliff B. L. and Wadhwa M. (1992) The distribution of rare earth elements between lunar apatite and whitlockite. *Lunar and Planetary Science Conference XXIII*, 625-626.
291. Wadhwa M. and Crozaz G. (1992) REE in minerals in Nakhla and Lafayette: A comparative study of trace element microdistributions. *Lunar and Planetary Science Conference XXIII*, 1483-1484.
292. Wadhwa M. and Crozaz G. (1992) Trace element characteristics of the new shergottite LEW88516. *Meteoritics* 27, 302.
293. Wadhwa M. and Crozaz G. (1992) Trace element microdistributions in the nakhlites: Implications for parent melt compositions. *Meteoritics* 27, 302.

294. Wadhwa M., McSween H. Y., Jr., and Crozaz G. (1991) Trace element distributions in minerals of EETA79001: Clues to the petrogenesis of a unique shergottite. *Meteoritics* 26, 404.

**THESIS**

Wadhwa M. (1994) Geochemical studies of two unusual groups of meteorites: Trace elements in SNC meteorites and Mn-Cr systematics in unequilibrated enstatite chondrites. Ph.D. dissertation, Washington University in St. Louis.