JUSTIN FILIBERTO

Southern Illinois University – Carbondale
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SUMMARY:

- 39 peer-reviewed publications and 2 book chapters
- Three Active Funded Grants:
  - 1 NSF – Geophysics Grant
  - 1 NASA Mars Fundamental Research Grant
  - 1 National Geographic Grant
- Early Career Award at SIU – 2015
- Excellence in Teaching Award at SIU – 2014
- Visiting Fellow – The Open University, Milton Keynes, UK
- Associate Editor – Journal of Geophysical Research: Planets
- Guest Associate Editor – Meteoritics and Planetary Science

EDUCATION:

Ph.D. Geology, 2006, *Stony Brook University*.
Dissertation: Constraints on the Chemistry of Martian Magmas.

B.S. Geological Sciences and Marine Science, 2001, *University of Miami.*
Thesis: Volatiles in basaltic glasses from a subglacial volcano in northern British Columbia (Canada): implications for ice sheet thickness and mantle volatiles.

PROFESSIONAL EXPERIENCE:

Associate Professor, Southern Illinois University. 2016 – present
Visiting Fellow, The Open University, United Kingdom. 2015 – present
Assistant Professor, Southern Illinois University. 2011 – 2016
Visiting Scientist, Lunar and Planetary Institute. 2009 – 2011
Postdoctoral Research Associate, Rice University. 2009 – 2011
Postdoctoral Research Fellow, Lunar and Planetary Institute. 2006 – 2009
Adjunct Professional Assistant, Suffolk Community College. Spring/Summer 2006
Teaching Assistant, Stony Brook University. 2001 – 2003

AWARDS/HONORS:

Early Career Faculty Excellence Award, Southern Illinois University, 2015
Excellence in Teaching Award, Southern Illinois University chapter of the National Society of Leadership and Success, Sigma Alpha Pi, 2014
Stephen E. Dwornik Planetary Geoscience Student Paper Award (Best Poster presentation), Lunar and Planetary Science Conference, 2006
Student Travel Award, NASA Cosmochemistry Program, Meteoritical Society Meeting, 2005
GAANN Fellowship, Dept. of Geosciences, SUNY Stony Brook, 2005
Student Poster Award Overall, First Place, Undergraduate Research Day, Univ. of Miami, 2001

Student Poster Award in Physical Sciences, First Place, Undergraduate Research Day, University of Miami, 2001
Earth Science Honor Society Award, Sigma Gamma Epsilon, 2001
Departmental Honors, Geological Sciences, University of Miami, 2001
Departmental Honors, Marine Science, University of Miami, 2001

GRANTS:

Active:

Project: Noble Gas Fractionation during Aqueous Alteration of Minerals on Mars
Period of Award: June 2014 – June 2017
Program: NASA Mars Fundamental Research Program
Amount of Award: $473,881; Amount of Award to SIU: $72,458
CoI – Filiberto; PI – Mark Bullock, SWRI

Project: Collaborative Research: Identification of magnetic sources in the Upper Mantle
Program: National Science Foundation Geophysics
Period of Award: January 2014 – December 2016
Amount of Award: $225,000
CoPI – Justin Filiberto; PI – Eric Ferre

Project: Magmatic Intrusions Into Sulfur-rich Sediments: Analogs for Martian Exploration and Potential Habitability
Program: National Geographic
Period of Award: May 2016 – November 2017
Amount of Award: $14,692
PI – Justin Filiberto

Submitted:

Project: Dielectric Permittivity and Magnetic Permeability Measurements on Venus Surface Materials
Program: NASA Planetary Data Archiving, Restoration, and Tools
Period of Award: February 2017 – January 2020
Amount of Award (to SIU): $49,317
CoI – Justin Filiberto; PI – Martin Barmatz

Previous:

Project: Constraints on the Martian volatile budget
Program: NASA Mars Fundamental Research Program
Period of Award: June 2013 – June 2015
Amount of Award: $130,000
PI – Justin Filiberto

Project: Spinel-rich lithologies in the lunar highland crust
Program: NASA Cosmochemistry Program
Period of Award: February 2013 – February 2014
Amount of Award (to SIU): $13,996; total award: $291,799

CoI – Justin Filiberto; PI – Juliane Gross, AMNH

Project: Acid Fog on Mars: Experimental study of Halogens in Martian Basalts and their Fluids
Program: NASA Mars Fundamental Research Program
Period of Award: June 2009 – June 2013
Total Amount of Award: $400,000
Science PI – Justin Filiberto

INVITED TALKS AND COLLOQUIA:

COLLOQUIA:

Comparison of the Conditions of Melting in the Martian Mantle from Surface Basalts and Meteorites. University of Central Florida, Florida Space Institute, May 2016.

Comparison of the Mantle Potential Temperature of Ancient Mars and the Earth. Institute of Geophysics, ETH Zurich, April 2016.

Constraints on the Martian Volatile Budget. Arecibo Observatory, Puerto Rico, November 2015

What Can Experimental Petrology Tell Us About Martian Rocks? University of Nevada, Las Vegas, April 2015

What Can Experimental Petrology Tell Us About Martian Rocks? South West Research Institute, Boulder, CO, October, 2014

Constraints on the Martian Volatile Budget. Terra Society, University of Illinois Chicago, Chicago, IL. October 2014

Constraints on the Depth and Thermal Vigor of Melting in the Martian Mantle University of Illinois at Chicago, Chicago, IL. October 2014

What Can Experimental Petrology Tell Us About Martian Rocks? Southern Illinois University, Carbondale, IL. September, 2014

Conditions of Basalt Genesis in Mars from Surface Basalts, compared with the Martian Meteorites. Washington University, St Louis, MO. September 2013

Conditions of Basalt Genesis in Mars from Basalts in Gusev Crater and Meridiani Planum, compared with the Martian Meteorites. Lunar and Planetary Institute, Houston, TX. September 2013

Updates on collaborative studies with the Open University: Martian meteorites NWA 6234 and NWA 2737. The Open University, Milton Keynes, UK. February 2013

Comparing the Effects of Volatile Species (H_2O, F, and Cl) on Near-Liquidus Phase Equilibra of a Basalt. American Museum of Natural History. March 2012

Comparing the Effects of H_2O, F, and Cl on Near-Liquidus Phase Equilibra of a Basalt. The Open University, Milton Keynes, UK. January 2012

A Consortium Study of Olivine-phyric Shergottite NorthWest Africa 6234. The Open University, Milton Keynes, UK. January 2012

Comparing the Effects of H_2O, F, and Cl on Near-Liquidus Phase Equilibra of a Basalt: Implications for Volatile Induced Mantle Melting. Southern Illinois University at Carbondale. February 2011

Fe-Mg Partitioning between Olivine and Basaltic Melts: Applications to Genesis of Olivine-Phyric Shergottites and Conditions of Melting in the Martian Interior. Rice University. October 2010

What Experimental Petrology Can Tell Us About the Evolution of Mars. Illinois State University, Department of Geography and Geology, GGGeo Seminar. October 2010

Mars Rocks: Experimental High Pressure Investigations of Martian Basalts. University of Houston Clear Lake, Physics Seminar Series. April 2010

Experimental High Pressure Phase Equilibrium Investigations of Martian Basalts. Institute of Meteoritics, University of New Mexico. April 2010

High Pressure, Near-Liquidus Phase Equilibria of the Martian Basalt Fastball and Melting in the Martian Mantle. Rice University. February 2010

Martian Magmas Contained Abundant Chlorine, But Little Water. Mississippi State University. May 2009

Martian Magmas were Chlorine-rich and Water-poor. Institute of Meteoritics, University of New Mexico. March 2009

What Can Experimental Petrology Tell Us About Martian Rocks? University of Houston Clear Lake, Physics Seminar Series. February 2008

Ferropicrites: Terrestrial Analogues of the SNC Meteorites? Lunar and Planetary Institute Seminar Series. February 2006

CONFERENCES AND WORKSHOPS: (abstract information below)

[Key note] Crustal Differentiation on Mars: A New View of the Red Planet Forty Years after Viking, The 5th UK in the Aurora Programme Meeting. London, UK, November 2016

Geological Society of American Annual Meeting, Denver, September 2016

European Geophysical Union Conference, Vienna, April 2016

Goldschmidt Conference, Prague, August 2015

[Key note] The 4th UK in the Aurora Programme Meeting. London, UK, May 2015

46th Lunar and Planetary Science Conference, Houston, TX March 2015

Advances in Mars Research, The 3rd UK in Aurora Meeting. February 2013

COURSES TAUGHT:

- Igneous and Metamorphic Petrology
- Volcanology
- Planetary Geology
- Advanced Igneous Petrology
- History of the Earth

POSTDOC RESEARCH SUPERVISION:

Paul Giesting, Postdoc Jan 2012 – Jan 2014 *Halogens in Martian Meteorites.*

GRADUATE STUDENT RESEARCH SUPERVISION:

Jake Crandall, PhD August 2015 – present *Magmatic Intrusions into Sulfur-rich Sediments*

Chris McCoy, MS graduated August 2016 *Experimentally melting a Mg# 80 Martian Mantle at 0.5 to 1.5 GPa: Implications for basalt genesis*

Joseph Knafelc, MS graduate May 2016 *Experimental Constraints on Potential Magnetic Sources in the Upper Mantle*

Jake Crandall, MS graduated May 2015 *The Potential for Economic Mineral Deposits on Mars*

Ben Farcy, MS graduated Aug. 2015 *Effect of Chlorine on Crystallization of NWA 6234*

Zachary Chartrand, MS graduated May 2014 *Melting the Martian Mantle.*

UNDERGRADUATE STUDENT RESEARCH SUPERVISION:

Joshua Richards, Spring 2016 *Mineralogy of the Martian Mantle*

Joe Krienert, August 2013 – Dec 2014 *Experimental Constraints on Volatile Element Partitioning between Amphibole and Melt*

Chris McCoy, August 2013 – May 2014 *Crystallization of the Lunar Crust*

Kevin Walsh, August 2012 – May 2015 *The Effect of Chlorine on Crystallization of a Martian Basalt; The Effects of Oxidation and Decompression on the Magnetic Properties of Olivine*

Kelsey Manuele, August 2012 – December 2013 *Felsic Volcanics of the St Francis Mountains.*

Justin Wood, Rutgers University, summer 2008, Lunar and Planetary Institute Intern, *The Effect of Fluorine on the Liquidus of a Martian Basalt.*

Colin Jackson, University of California, Santa Cruz, summer 2007, Lunar and Planetary Institute Intern, *Ni Partitioning Behavior at Magmatic Conditions*.

PROFESSIONAL ACTIVITIES AND SERVICES

FOR MEETINGS:

Meteorical Society McKay Award Committee 2015 – present

Co-Convener – session "What lies beneath: Multi-disciplinary approaches to probing the structure and evolution of planetary interiors" at American Geophysical Union, Fall Meeting 2015, San Francisco, Ca (with M. Panning, K.K.M. Lee, and N. Tosi)

Convener – session "Volatiles in the Martian Crust" at American Geophysical Union, Fall Meeting 2014, San Francisco, Ca (with S.P. Schwenzer and P. Conrad)

Organizer and Convener, Workshop on Volatiles in the Martian Interior, Lunar and Planetary Institute, Houston, TX, November 2014

Co-Convener – session "Preparing for the Science of Mars Sample Return" at American Geophysical Union, Fall Meeting 2011, San Francisco, Ca (with M. Schmidt, C. Budney, and J.M.D. Day)

Co-Convener – session "Volatiles in Earth & Planetary Interiors" at Goldschmidt Conference 2010, Knoxville, Tennessee (with E. G. Hauri, A. Shaw, A. Jones, and R. Dasgupta)

Lunar and Planetary Science Conference Program Committee 2009-2011

Chair, Lunar and Planetary Institute 40th Anniversary Seminar Series, Jan 2008-Dec 2008

Co-Chair, Lunar and Planetary Institute Seminar Series, May 2007-Dec 2008

Organizer and Convener, Workshop on Water in Planetary Basalts, Lunar and Planetary Institute, Houston, TX, November 2007

Student Award Judge, Stephen E. Dwornik Planetary Geoscience Student Award Judge, Lunar and Planetary Science Conference 2009, 2011; Meteoritical Society Annual Meeting – Outstanding Student Paper Award Judge 2013, 2014; American Geophysical Union Fall meeting – Outstanding Student Paper Award Judge 2011 − 2013

FOR GRANTING OFFICES:

Group Chief of Grant Panel, NASA 2015, 2016

Grant Panelist, EUROPLANET 2016, NASA 2008, 2011, 2015 x 3

External Reviewer, Austrian Science Fund, Deutsche Forschungsgemeinschaft German Science Foundation, National Science Foundation: EAR, NASA Programs: Cosmochemistry, Emerging Worlds, Graduate Student Geology Fellowship, Mars 2020 Rover Science Panel, Mars Fundamental Research, Outer Planets Research, Planetary Geology and Geophysics, Solar System Workings

FOR PUBLICATIONS:

Guest Associate Editor of Meteoritics and Planetary Science for the special issue of Volatiles in the Martian Interior July 2015 – present

Associate Editor of Journal of Geophysical Research – Planets May 2013 – present
Referee for journals, American Mineralogist, Chemical Geology, Contributions to Mineralogy and Petrology, Earth and Planetary Science Letters, G-cubed, Geochimica et Cosmochimica Acta, Geology, Geophysical Research Letters, Icarus, Journal of Geophysical Research – Planets, Meteoritics and Planetary Science, Nature Communications, Nature Geosciences, Ore Geology Reviews, Polar Science, Progress in Earth and Planetary Science
Referee for books Springer Geochemistry Series; Elsevier publishing

UNIVERSITY AND DEPARTMENTAL ACTIVITIES & SERVICES:

Sigma Xi Admissions Committee, Fall 2016 – present
Early Career Faculty Excellence Award Committee, Fall 2015 – present
Economic Geology/Mineralogy Search Chair, Fall 2015 – Spring 2016
Researcher II MultiHazard Mitigation Specialist Search Committee, Spring 2016
Geology Club Advisor, Fall 2012 – present
Departmental Graduate Admissions Committee, Fall 2011 – present
Departmental Scholarship Committee, Fall 2011 – present

EDUCATIONAL AND PUBLIC OUTREACH:

Speaker, Mars Rocks: What We Have Learned about Mars from Meteorites and Robotic Exploration. Rend Lake Environmental Science Series, Benton, IL. June 2016
Speaker, Mars Exploration: Curiosity Exploration at Gale Crater. Saluki Science Ambassadors, SIU, Carbondale, IL. April 2016
Keynote Speaker, Mars Exploration: From Meteorites to Rovers. Junior Science and Humanities Symposium Award Ceremony, SIU, Carbondale, IL. March 2016
Speaker, NASA Mission and Future Missions. Total Lunar Eclipse Event at Southern Illinois University, Carbondale, IL September 2015
Speaker, Mars Rocks: What We Have Learned about Mars from Meteorites and Robotic Exploration. Science Café, Carbondale IL. April 2013
Science Mentor for LPI High School Lunar Research Projects associated with the NASA Lunar Science Institute, Belfrey High School, KY, 2011
Science Mentor for the winning team of the LPI High School Lunar Research Projects associated with the NASA Lunar Science Institute, Chenango Forks High School, NY, Spring 2010 Lunar Science Forum Abstract 121 (Conner et al. 2010)
Teacher Training Workshop/Field Course: *The Heat from Within: earthly insights into planetary volcanism,* Eugene Oregon, 2009
Rocks from Mars, Falcon Pass Elementary School, Houston, TX, 2009
Speaker, A Martian Christmas, Mendel Elementary School, Houston, TX, 2008
Speaker, Rocks from Mars, Pasadena Optimist Club, Pasadena, TX, 2008
Speaker, Mars Rocks, Seminar Day, Horace Greely High School, Chappaqua, NY, 2006

PRESS ABOUT RESEARCH

Southern Illinois University, College of Science news release about my research http://science.siu.edu/news/2016/filiberto.html
WISU/NPR interview about water on Mars http://news.wsiu.org/post/wsiu-infocus-siu-geology-professor-discusses-water-mars#stream/0

Southern Illinois University Today news article about NSF XENOMAG grant and research http://news.siu.edu/2015/06/061015tjc15030.php

Southern Illinois University press release about Early Career Award http://news.siu.edu/2015/04/042315tew15010.php

Daily Egyptian, Southern Illinois University, news article about Early Career Award http://dailyegyptian.com/5380/news/siu-recognizes-faculty-and-staff-for-exemplary-work/

Daily Egyptian, Southern Illinois University, news article about Filiberto et al. (2015, EOS article) and the volatiles workshop http://dailyegyptian.com/5354/news/salukis-search-for-life-on-mars/

Southern Illinois University, College of Science news release about Filiberto et al. (2015; EOS article) http://www.science.siu.edu/news/2015/volatilemartians%20.html

Inside Science press release about Filiberto (2014) https://www.insidescience.org/content/thirty-year-old-data-offers-new-view-venus/1536

Daily Egyptian, Southern Illinois University, news article about Filiberto (2014) http://dailyegyptian.com/old-data-brings-new-light/

Southern Illinois University, College of Science news release about Filiberto (2014) http://www.science.siu.edu/news/2014/venus.html

Nature Geoscience Research Highlights article about Gross, Filiberto, and Bell (2013): http://www.nature.com/ngeo/journal/v6/n6/full/ngeo1846.html

WISU/NPR interview about Martian Research in advance of Science Café presentation (April, 2012) http://news.wsiu.org/post/science-cafe-mars-research

Planetary Science Research Discoveries. Taylor, G. J. and Martel, L. M. V. (October, 2012) Exploring the Mantle of Mars. http://www.psrd.hawaii.edu/Oct12/Mantle-of-Mars.html

Red Planet Report (2012), Mars Space Flight Facility at Arizona State University in Tempe, Arizona http://redplanet.asu.edu/?p=1897

Vidette Online, Illinois State University News Paper (2010): http://www.videtteonline.com/index.php/2010/10/04/reseacher-explains-chance-of-life-on-mars/

Nature News and Views article about Filiberto &Treiman (2009): McSween (2009) Volatility in Martian magmas. *Nature* **458**, 45. http://www.nature.com/nature/journal/v458/n7234/full/458045a.html

PUBLICATIONS:

H-Index: 16 (Google Scholar), 15 (Scopus), 14 (Web of Science), i10-index: 22 (Google Scholar)

[#] post-doc, * graduate student, ^ undergrad

J. Filiberto, D. Baratoux, D. Beaty, D. Breuer, B.J. Farcy*, M. Grott, J.H. Jones, W.S. Kiefer, P. Mane, F.M. McCubbin, and S.P. Schwenzer (in press) A Review of Volatiles in the Martian Interior. *Meteoritics and Planetary Science*.

J. Filiberto, J. Gross, and F. M. McCubbin (in press) Constraints on the Water, Chlorine, and Fluorine Content of the Martian Mantle. *Meteoritics and Planetary Science*.

B.J. Farcy*, J. Gross, P. Carpenter, J. Hicks*, and **J. Filiberto** (in press) Effect of Cl on Near-Liquidus Crystallization of Olivine-Phyric Shergottite NWA 6234 at 1 GPa: Implication for Volatile-induced Melting of the Martian mantle. *Meteoritics and Planetary Science*.

P. A. Giesting[#] and **J. Filiberto** (in press) Amphibole Chemistry and the Formation Environment of Potassic-chloro-hastingsite in the Nakhlites MIL 03346 and pairs and NWA 5790. *Meteoritics and Planetary Science*.

F.M. McCubbin, J.W. Boyce, P. Srinivasan, A.R. Santos, S.M. Elardo, **J. Filiberto**, A. Steele, and C.K. Shearer (in press) Heterogeneous Distribution of H_2O in the Martian Interior: Implications for the Abundance of H_2O in the Depleted and Enriched Mantle Sources. *Meteoritics and Planetary Science*.

A.H. Treiman, D.L. Bish, D.T. Vaniman, S.J. Chipera, D.F. Blake, D.W. Ming, R.V. Morris, T.F. Bristow, S.M. Morrison, M.B. Baker, E.B. Rampe, R.T. Downs, **J. Filiberto**, A.F. Glazner, R. Gellert, L.M. Thompson, M.E. Schmidt, L. Le Deit, R.C. Wiens, A.C. McAdam, C.N. Achilles, K.S. Edgett, J.D. Farmer, K.V. Fendrich, J.P. Grotzinger, S. Gupta, J.M. Morookian, M.E. Newcombe, M.S. Rice, J.G. Spray, E.M. Stolper, D.Y. Sumner, A.R. Vasavada, and A.S. Yen (2016) Mineralogy, Provenance, and Diagenesis of a Potassic Basaltic Sandstone on Mars: CheMin X-ray Diffraction of the Windjana Sample (Kimberley Area, Gale Crater). *Journal of Geophysical Research – Planets*. DOI: 0.1002/2015JE004932

W.S. Kiefer, **J. Filiberto,** C. Sandu, and Q. Li (2015) The Effects of Mantle Composition on the Peridotite Solidus: Implications for the Magmatic History of Mars. *Geochimica et Cosmochimica Acta*, 162, 247-258.

J. Filiberto, D. Beaty, and W. S. Kiefer (2015) Volatiles in Mars: Constraints, questions, and future directions. *Eos, Earth & Space Science News*, 96, doi:10.1029/2015EO027375.

P.A. Giesting[#], S.P. Schwenzer, **J. Filiberto**, N.A. Starkey, I.A. Franchi, A.G. Tindle, A.H. Treiman, and M.M. Grady (2015) Igneous and Shock Processes Affecting Chassignite Amphibole Evaluated Using Chlorine/Water Partitioning and Hydrogen Isotopes. *Meteoritics & Planetary Science*, 50, 433-460.

A. H. Treiman and **J. Filiberto** (2015) Geochemical Diversity of Shergottite Basalts: Mixing and Fractionation, and Their Relation to Mars Surface Basalts. *Meteoritics & Planetary Science* (special volume dedicated to Mike Drake), 50, 632-648. DOI:10.1111/maps.12363.

J. Filiberto and R. Dasgupta (2015) Constraints on the Depth and Thermal Vigor of Melting in the Martian Mantle. *Journal of Geophysical Research: Planets*, 120, 2014JE004745.

E. L. Walton, T. G. Sharp, J. Hu, and **J. Filiberto** (2014) Heterogeneous Mineral Assemblages in Martian Meteorite Tissint as a Result of a Recent Small Impact Event on Mars. *Geochimica et Cosmochimica Acta*, 140, 334-348.

J. Filiberto, A.H. Treiman, P.A. Giesting[#], C.A. Goodrich, and J. Gross (2014) High-Temperature Chlorine-Rich Fluid in the Martian Crust: A Precursor to Habitability. *Earth and Planetary Science Letters*, 401, 110-115.

J. Filiberto, R. Dasgupta, J. Gross, and A.H. Treiman (2014) The Effect of Chlorine on Near-Liquidus Phase Equilibria of Basalts. *Contributions to Mineralogy and Petrology*, 168, 1-13.

J. Filiberto, J. Gross, J. Trela*, and E.C. Ferré (2014) Gabbroic Shergottite Northwest Africa 6963: an Intrusive, Crustal Sample of Mars. *American Mineralogist*, 99, 601-606.

P. A. Giesting[#] and **J. Filiberto** (2014) Quantitative Models Linking Igneous Amphibole Composition with Magma Volatile Chemistry. *American Mineralogist*, 99, 852-865.

J. Filiberto (2014) Magmatic Diversity on Venus: Constraints from Terrestrial Analog Crystallization Experiments. *Icarus*, 231, 131-136.

C.A. Goodrich, A.H., Treiman, J., Filiberto, J., Gross, and M., Jercinovic (2013) K_2O-rich Trapped Melt in Olivine in the Nakhla Meteorite: Implications for Petrogenesis of Nakhlites and Evolution of the Martian Mantle. *Meteoritics & Planetary Science* 48, 2371-2405.

J. Filiberto and S.P. Schwenzer (2013) Alteration Mineralogy of Home Plate and Columbia Hills—Formation Conditions in Context to Impact, Volcanism, and Fluvial Activity. *Meteoritics & Planetary Science*, 48, 1937-1957.

J. Gross, **J. Filiberto,** and A. Bell (2013) Water in the Martian Interior: Evidence for Terrestrial-MORB Mantle like Volatile Contents from Hydroxyl-Rich Apatite in Olivine-Phyric Shergottite NWA 6234. *Earth and Planetary Science Letters,* 369-370,120-128.

J. Gross, **J. Filiberto,** C. D. K. Herd, M. Melwani Daswani, S. P. Schwenzer and A. H. Treiman (2013) Petrography, Mineral Chemistry, and Crystallization History of Olivine-Phyric Shergottite NWA6234: a New Intermediate Melt Composition. *Meteoritics and Planetary Science,* 48, 854-871.

J. Filiberto, E. Chin, J.M.D. Day, I.A. Franchi, J. Gross, R.C. Greenwood, S. Penniston-Dorland, S.P. Schwenzer, and A.H. Treiman (2012) Geochemistry of Intermediate Olivine-Phyric Shergottite NorthWest Africa 6234 with Similarities to Basaltic Shergottite NorthWest Africa 480 and Olivine-Phyric Shergottite NorthWest Africa 2990. *Meteoritics and Planetary Science,* 47, 1256-1273.

S.P. Schwenzer, O. Abramov, C.C. Allen, J.C. Bridges, S. Clifford, **J. Filiberto**, D. A. Kring, J. Lasue, P.J. McGovern, H.E. Newsom, A.H. Treiman, D.T. Vaniman, R.C. Wiens, A. Wittmann (2012) Gale Crater: Formation and Post-Impact Hydrous Environments. *Planetary and Space Science,* 70, 84-95.

S.P. Schwenzer, O. Abramov, C.C. Allen, S.M. Clifford, C.S. Cockell, J**. Filiberto**, D. A. Kring, J. Lasue, P.J. McGovern, H.E. Newsom, A.H. Treiman, D.T. Vaniman, R.C. Wiens (2012) Puncturing Mars: How Impact Craters Interact with the Martian Cryosphere. *Earth and Planetary Science Letters,* 335–336, 9–17.

J**. Filiberto**, J. Wood^, R. Dasgupta, N. Shimizu, L. Le, and A.H.Treiman (2012) Effect of Fluorine on Near-Liquidus Phase Equilibria of an Fe-Mg Rich Basalt. *Chemical Geology,* 312–313, 118-126.

J. Filiberto and R. Dasgupta (2011) Fe^{2+}-Mg Partitioning Between Olivine and Martian Magmas: Application to Genesis of Olivine-Phyric Shergottites and Conditions of Melting in the Martian Interior. *Earth and Planetary Science Letters*, 304, 527-537.

J. Gross, A.H. Treiman, **J. Filiberto**, and C.D.K. Herd (2011) Primitive Olivine-phyric Shergottite NWA 5789: Petrography, Mineral Chemistry and Cooling History Imply a Magma Similar to Yamato-980459. *Meteoritics & Planetary Science,* 46, 116-133.

J. Filiberto, D.S. Musselwhite, J. Gross, K. Burgess, L. Le and A.H. Treiman (2010) Experimental Petrology, Crystallization History, and Parental Magma Characteristics of Olivine-phyric Shergottite NWA 1068: Implications for the Petrogenesis of "Enriched" Olivine-phyric Shergottites. *Meteoritics & Planetary Science*, 45, 1258-1270.

J. Filiberto, R. Dasgupta, W.S. Kiefer, and A.H. Treiman (2010) High Pressure, Near-liquidus Phase Equilibria of the Home Plate Basalt Fastball and Melting in the Martian Mantle. *Geophysical Research Letters*, 37(L13201), doi:10.1029/2010GL043999.

J. Filiberto and A.H. Treiman (2009) Martian Magmas Contained Abundant Chlorine, but Little Water. *Geology,* 37, 1087-1090.

J. Filiberto and A.H. Treiman (2009) The Effect of Chlorine on the Liquidus of Basalt: First Results and Implications for Basalt Genesis on Mars and Earth. *Chemical Geology,* 263, 60-68.

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

J. Filiberto, A.H. Treiman, L. Le (2008) Crystallization Experiments on a Gusev Basalt Composition. *Meteoritics & Planetary Science,* 43, 1137-1146.

J. Filiberto (2008) Similarities between the Shergottites and Terrestrial Ferropicrites. *Icarus*, 197, 52-59.

J. Filiberto (2008) Experimental Constraints on the Parental Liquid of the Chassigny Meteorite: A Possible Link between the Chassigny Meteorite and a Gusev Basalt. *Geochimica et Cosmochimica Acta*, 72, 690-701.

H. Nekvasil, **J. Filiberto**, F. McCubbin, and D.H. Lindsley (2007) Alkalic Volcanism on Mars: New Insights from the Chassigny Meteorite. *Meteoritics & Planetary Science*, 42, 979-992.

J. Filiberto, H. Nekvasil, D.H. Lindsley (2006) The Earth/Mars Dichotomy in Mg/Si and Al/Si Ratios: Is it real? *American Mineralogist*, 91, 471-474.

H. Nekvasil, A. Dondolini, J. Horn, **J. Filiberto**, H. Long, D.H. Lindsley (2004) The Origin and Evolution of Silica-saturated Alkalic Suites: An Experimental Study. *Journal of Petrology*, 45, 693-721.

J.E. Dixon, **J.R. Filiberto**, J.G. Moore, and C.J. Hickson (2002) Volatiles in Basaltic Glasses from a Subglacial Volcano in Northern British Columbia (Canada): Implications for Ice Sheet Thickness and Mantle Volatiles. *In* Smellie, J.L. & Chapman, M.G. (eds) *Volcano-Ice Interaction on Earth and Mars*. Geological Society, London, Special Publications, 202, 255-271.

SUBMITTED

P.H. Edwards, J.C. Bridges, R. Wiens, R. Anderson, M.D. Dyar, M. Fisk, L. Thompson, P. Gasda, **J. Filibert**o, S.P. Schwenzer, D. Blaney, and I. Hutchinson (June 2016) Basalt-Trachybasalt Samples from Gale Crater, Mars. *Meteoritics and Planetary Science*.

S. Presswood, S.M. Rimmer, K.B. Anderson, and **J. Filiberto** (July 2016) Geochemical and Petrographic Alteration of Rapidly Heated Coals from the Herrin (No. 6) Coal seam, Illinois Basin. *International Journal of Coal Geology*.

J. R. Crandall and **J. Filiberto** (to be submitted Summer 2016) Potential mineral resources on Mars: Ore processes and mechanisms. *Icarus*.

BOOKS AND BOOK CHAPTERS:

J. Filiberto and S.P. Schwenzer (eds.) (in prep) Volatiles in the Martian Crust. Elsevier publishing.

J. Filiberto (2015) Volcaniclastic Deposits *In* Hargitai, H. & Kereszturi Á. (eds) *Encyclopedia of Planetary Landforms*. Springer Reference, New York. pp. 1-3, DOI: 10.1007/978-1-4614-9213-9_562-1.

J. Filiberto (2015) Pyroclastic Deposits *In* Hargitai, H. & Kereszturi Á. (eds) *Encyclopedia of Planetary Landforms*. Springer Reference, New York. pp. 1-11, DOI: 10.1007/978-1-4614-9213-9_284-1.

WHITE PAPERS:

S. Penniston-Dorland, B. Hacker, H. Marschall, M. Feineman, T. John, P. Agard, P. van Keken, G. Abers, **J. Filiberto**, T. Zack, J. Gross, J. Ague, E. Baxter, J. Alt, and M. Cloos (2010) Metamorphic Processes Implementation Strategy *NSF - GeoPRISMS SCD White Papers.*

S. Penniston-Dorland, J. Ague, G. Bebout, **J. Filiberto**, J. Gross, B. Hacker, G. Harlow, C. Manning, J. Ryan, K. Simons, and T. Zack (2010) Metamorphic processes in the subducting slab and overlying mantle wedge *NSF-Margins Planning and Review White Papers.*

S.P. Schwenzer, O. Abramov, C.C. Allen, S. Clifford, **J. Filiberto**, D.A. Kring, J. Lasue, P.J. McGovern, H.E. Newsom, A.H. Treiman, and A. Wittmann (2010) The importance of

(Noachian) impact craters as windows to the subsurface and as potential hosts of life *NASA Decadal Survey-MEPAG White Papers.*

ABSTRACTS:

2016

J. Filiberto [Key Note] (2016) Geochemistry of Martian Basalts with Constraints on Magma Genesis. *Crustal Differentiation on Mars: A New View of the Red Planet Forty Years after Viking, The 5th UK in the Aurora Programme Meeting.*

J. Filiberto [Invited] (2016) Constraints on the Halogen Content of Martian Magmas and Degassing of Chlorine-rich Fluids. *Geological Society of America, 2016 annual meeting, GSA Abstracts with Programs*

J. Filiberto [Invited] (2016) Geochemistry of Martian Basalts with Constraints on Magma Genesis. *Geological Society of America, 2016 annual meeting, GSA Abstracts with Programs*

C. McCoy*, Z. Chartrand*, P. Carpenter, J. Gross, and **J. Filiberto** (2016) Experimentally Melting an Mg#80 Martian Mantle at 0.5 to 2.0 GPa: Implications for Basalt Genesis. *Geological Society of America, 2016 annual meeting, GSA Abstracts with Programs*

P.A. Giesting[#], **J. Filiberto,** and A. Patchen (2016) Chlorine's Role in the Petrogenesis of the Nakhlites (Martian Cumulate Clinopyroxenites). *Geological Society of America, 2016 annual meeting, GSA Abstracts with Programs.*

J. Gross and **J. Filiberto** (2016) Granitic Compositions in a Gabbroic Martian Meteorite NWA 6963: Extreme Fractional Crystallization of a Hydrous Magma? *Geological Society of America, 2016 annual meeting, GSA Abstracts with Programs.*

F.M. McCubbin, J.W. Boyce, P. Srinivasan, A.R. Santos, S.M. Elardo, **J. Filiberto**, A. Steele, and C.K. Shearer (2016) Evidence for a Heterogeneous Distribution of Water in the Martian Interior. *Geological Society of America, 2016 annual meeting, GSA Abstracts with Programs.*

J.C. Bridges, P.H. Edwards, **J. Filiberto**, S.P. Schwenzer, P. Gasda and R. Wiens (2016) Basalt-Trachybasalt Fractionation in Gale Crater, Mars. *79th Annual Meeting of the Meteoritical Society* Abstract #6391.

S.P. Schwenzer, G. Barnes, J.C. Bridges, M.A. Bullock, C.L. Chavez, **J. Filiberto,** S. Herrmann, L.J. Hicks, S.P. Kelley, M.A. Miller, J.M. Moore, U. Ott, H.D. Smith, E.D. Steer, T.D. Swindle, and A.H. Treiman (2016) Fractionated (Martian) Noble Gasses – EFA, Experiments, and Meteorites. *79th Annual Meeting of the Meteoritical Society* Abstract #6099.

J. Filiberto and R. Dasgupta [**Invited**] (2016) Comparison of the Mantle Potential Temperature of Ancient Mars and the Earth. *European Geophysical Union Conference* Abstract #EGU2016-2390.

J. Filiberto, J. Knafelc*, M. D. Dyar, E. C. Ferré, S.A. Friedman, K. Walsh^, and J.M. Feinberg (2016) Olivine Oxidation and Implications for Planetary Surface Processes. *The 47th Lunar and Planetary Science Conference* Abstract #2171.

J.C. Bridges, P.H. Edwards, R. Anderson, M.D. Dyar, M. Fisk, L. Thompson, P.Gasda, S.P. Schwenzer, W. Goetz, D. Blaney, **J. Filiberto**, and R.C. Wiens (2016) Igneous Differentiation of Mars: Trachybasalts in Gale Crater. *The 47th Lunar and Planetary Science Conference* Abstract #2160.

S. P. Schwenzer, M. A. Bullock, J. C. Bridges, C. Chavez, **J. Filiberto**, L. J. Hicks, S. P. Kelley, M. A. Miller, J. M. Moore, H. Smith, T. D. Swindle, A. H. Treiman (2016) Noble Gas

Fractionation in Hydrous Rock Alteration under Diagenetic Pressure and Temperature Conditions. *The 47th Lunar and Planetary Science Conference* Abstract # 1889.

W.S. Kiefer, J.F. Rapp, T. Usui, D.S. Draper, **J. Filiberto** (2016) Constraints on Mantle Plume Melting Conditions in the Martian Mantle Based on Improved Melting Phase Relationships of Olivine-Phyric Shergottite Yamato 980459. *The 47th Lunar and Planetary Science Conference* Abstract #1817.

A.H. Treiman and **J. Filiberto** (2016) How Good is Good Enough? Major Element Chemical Analyses of Basalt by Spacecraft Instruments. *The 47th Lunar and Planetary Science Conference* Abstract #1029.

2015

J. Filiberto, J. Bridges, R. Dasgupta, P. Edwards, S.P. Schwenzer, and R. Wiens (2015) Formation Conditions of Basalts at Gale Crater, Mars from ChemCam Analyses. *AGU Fall Meeting*. Abstract # 79807

E. Ferré, S. A Friednam*, J. Conder, F. Demory, J. M. Feinberg, **J. Filiberto,** E. Khakhalova, J. Knafelc, F. Martin-Hernandez, C. Neal, P. Rochette, J. Till, K. Walsh, and F. El Astrassi (2015) Deep crust vs shallow mantle: sources of long wavelength magnetic anomalies. *AGU Fall Meeting*.

S. Presswood*, S. Rimmer, K. Anderson, and **J. Filiberto** (2015) Geochemical and Petrographic Alteration of Rapidly Heated Coals from the Herrin (No. 6) Coal Sea, Illinois Basin. *Geological Society of America, 2015 annual meeting, GSA Abstracts with Programs* Vol. 47, No. 7, p.392 Paper No. 151-6.

J.L. Bishop, M.A. Velbel, and **J. Filiberto** (2015) Determining Martian Aqueous Mineralogy through Analyses of Orbital Remote Sensing & Martian Meteorite Geochemistry. *78th Annual Meeting of the Meteoritical Society* Abstract #5113.

J. Filiberto, R. Dasgupta, A.H. Treiman, and J. Bridges [**Key note**] (2015) Martian Basalts: Meteorites, MER and MSL, Comparison of the Chemistry and Conditions of Formation. *4th UK in the Aurora Programme Meeting*

J. Knafelc*, **J. Filiberto,** K. B. Walsh^, S. A Friednam*, E. C. Ferré, B. E. Strauss, J. M. Feinberg, and C. R. Neal (2015) The oxidation of olivine and implications for mantle magnetism *Goldschmidt Conference Abstractions, Geochimica et Cosmochimica Acta* Abstract.

J. Filiberto and R. Dasgupta [**Invited**] (2015) Comparison of the Conditions of Melting in the Martian Mantle from Surface Basalts and Meteorites. *Goldschmidt Conference Abstractions, Geochimica et Cosmochimica Acta* Abstract # 2100.

J. Filiberto and R. Dasgupta (2015) Constraints on the Depth and Temperature of Melting in the Martian Mantle. *The 46th Lunar and Planetary Science Conference* Abstract # 1518.

J. Filiberto, D. Baratoux, D. Beaty, D. Breuer, B. J. Farcy*, M. Grott, J.H. Jones, W. Kiefer, P. Mane, F. McCubbin, and S. P. Schwenzer [**Invited**] (2015) Constraints, Questions, and Future Directions on Volatiles in the Martian Interior: A Summary of the Workshop. *The 46th Lunar and Planetary Science Conference* Abstract # 2064.

J. R. Crandall* and **J. Filiberto** (2015) Potential mineral resources on Mars: Ore processes and Mechanisms. *The 46th Lunar and Planetary Science Conference* Abstract # 1491.

P. A. Giesting# and **J. Filiberto** (2015) Constraints on the Possible Formation Mechanisms of the Potassic-Chloro-Hastingsite in MIL03346 and Paired Stones. *The 46th Lunar and Planetary Science Conference* Abstract # 2396.

V.E. Hamilton and **J. Filiberto** (2015) Crystallinity and Preferred Orientation of Phases in Gabbroic Shergottite NWA 6963 *The 46th Lunar and Planetary Science Conference* Abstract # 2712.

A.H. Treiman; D. Bish, J. Farmer, D. W. Ming, J. Grotzinger; D. Vaniman, M. B. Baker, S. Chipera, R. T. Downs, R. V. Morris, E. Rampe, D. F. Blake, J. Berger, P. D. Cavanagh, R. Gellert, A. F. Glazner, M. Schmidt, A. S. Yen **J. Filiberto**, and the rest of the APXS and CheMin teams (2015) Mineralogy and Genesis of the Windjana Sandstone, Kimberley Area, Gale Crater, Mars. *The 46th Lunar and Planetary Science Conference* Abstract #2620

M. A. Bullock, S. P. Schwenzer, J. C. Bridges, C. Chavez, **J. Filiberto**, S. P. Kelley, M. Miller, J. M. Moore, H. Smith, T. D. Swindle, and A. H. Treiman (2015) Noble Gas Fractionation During Low Temperature Alteration – An Experimental Approach *The 46th Lunar and Planetary Science Conference* Abstract # 1235.

2014

P. A. Giesting and **J. Filiberto** (2014) Constraints on Possible Formation Mechanisms of the Potassic-Chlorohastingsite. *Workshop on Volatiles in the Martian Interior*. Abstract # 1017.

J. Gross and **J. Filiberto** (2014) Granitic Compositions in Gabbroic Martain Meteorite NWA 6963: Evidence for Extreme Fractional Crystallization of a Hydrous Magma. *Workshop on Volatiles in the Martian Interior*. Abstract # 1015.

J. Filiberto and J. Gross (2014) Continued Evidence for Chorine-Rich Martian Magmas: Constraints on the Chlorine Content of the Martian Mantle. *Workshop on Volatiles in the Martian Interior*. Abstract # 1009.

B.J. Farcy* and **J. Filiberto** (2014) Effect of Cl on Near-Liquidus Crystallization of Olivine-Phyric Shergottite NWA 6234: Implication for Volatile-Induced Melting of the Mantle. *Workshop on Volatiles in the Martian Interior*. Abstract # 1005.

J. Filiberto and J. Gross (2014) Continued Evidence for Input of Chlorine into the Martian Crust from Degassing of Chlorine-Rich Martian Magmas with Implications for Potential Habitability. *AGU Fall Meeting*. Abstract # 8675.

K. B. Walsh^, **J. Filiberto**, S. A. Friedman*, J. Knafelc*, E. C. Ferré, J. A. Conder, E. Khakhalova, J. M. Feinberg, C. Neal (2014) Magnetite nucleation in mantle xenoliths during quasi-adiabatic ascent. *AGU Fall Meeting*. Abstract # 16035.

B.J. Farcy* and **J. Filiberto** (2014) Effect of Cl on Near-Liquidus Crystallization of Olivine-Phyric Shergottite NWA 6234: Implication for Volatile-Induced Melting of the Martian Mantle. *AGU Fall Meeting*. Abstract # 28013.

A.H. Treiman and **J. Filiberto** (2014) Geochemical Diversity of Shergottite Basalts: Mixing, Fractionation, and Mars Surface Basalts. *77th Annual Meeting of the Meteoritical Society* Abstract # 5393.

J. Filiberto, J. Gross, J. Trela, K. M. Cannon, S. Penniston-Dorland, A. Wittmann, B. Jolliff, P. Carpenter, E. C. Ferré, J. Mustard (2014) Gabbroic Shergottite NorthWest Africa 6963. *77th Annual Meeting of the Meteoritical Society* Abstract # 5064.

M. D. Dyar, A. H. Treiman, S. M. Clegg, R. C. Wiens, **J. Filiberto**, and S. Sharma. (2014) In Situ Measurements on Venus Plains, Domes, Cananli, and Tessera: Choices and Constraints for Mineralogical and Geochemical Measurements. *Workshop on Venus Exploration Targets* Abstract # 6010.

J. Filiberto, C. A. Goodrich, A. H. Treiman, J. Gross, and P. A. Giesting# (2014) Evidence for Magmatic-Hydrothermal Activity on Mars from Cl-Rich Scapolite in Nakhla. *Lunar and Planetary Science Conference XLV* Abstract # 1620.

R. J. Selin, J. Gross, and **J. Filiberto (2014)** Water, Fluorine, and Chlorine Fugacity Ratios of the Martian Interior derived from Apatite in Gabbroic Shergottite NWA 6963. *Lunar and Planetary Science Conference XLV* Abstract # 1462.

J. Gross, and **J. Filiberto (2014)** Granitic Compositions in Gabbroic Martian Meteorite NWA 6963 and a Possible Connection to Felsic Compositions on the Martian Surface. *Lunar and Planetary Science Conference XLV* Abstract # 1440.

K. M. Cannon, J. F. Mustard, C. D. K. Herd, and **J. Filiberto** (2014) Melting Mars with Impacts: Proximal Melt Deposits and Their Compositions as Determined by Remote Sensing. *Lunar and Planetary Science Conference XLV* Abstract # 1954.

A. Ody, K. M. Cannon, F. Poulet, J. F. Mustard, C. Quantin, and J. Filiberto (2014) Search for Analogue Sites of New Martian Shergottite Spectra Using NIR Data. *Lunar and Planetary Science Conference XLV* Abstract # 2207.

2013

J. Filiberto (2013) Constraints on Magmatic Diversity on Venus from Terrestrial Analog Crystallization Experiments with Data Implications for Future Missions. *AGU Fall Meeting*.

P.A. Giesting[#] and **J. Filiberto** (2013) Crystal Chemical Controls on Halogen and Hydroxyl Partitioning into Igneous Amphiboles *Geological Society of America Annual Meeting.*

J. Gross, P. Isaacson, **J. Filiberto** and A.H. Treiman (2013) Spinel-rich Lithologies on the Moon: Linking Samples, Experiments, and Remote Sensing. *Meteoritical Society Annual Meeting Abstracts, Meteoritics and Planetary Sciences* Abstract number.

J. Filiberto, C. A. Goodrich, S. P. Schwenzer, A. G. Tindle, M. M. Grady (2013) Constraints on the Origin of the Olivine-Megacrysts and the Parental Magma of NWA 1068 from Melt Inclusions. *Meteoritical Society Annual Meeting Abstracts, Meteoritics and Planetary Sciences* Abstract number 5030.

R. Burgess, J.A. Cartwrich, **J. Filiberto** (2013) Halogen abundances of the martian mantle. *Goldschmidt Conference Abstractions, Geochimica et Cosmochimica Acta*.

J. Filiberto (2013) Constraints on the igneous and alteration history at the Home Plate and surrounding Columbia Hills region in Gusev Crater (MER Spirit) [**Invited**] *Advances in Mars Research, The 3rd UK in Aurora Meeting*.

P.A. Giesting[#], and **J. Filiberto** (2013) Halogen Systematics during Crystallization of the Chassignites. *Lunar and Planetary Science Conference XLIV* Abstract # 3087.

J. Gross, A. S. Bell, and **J. Filiberto** (2013) Water in the Martian Interior: Evidence from Hydroxyl-rich Apatite in Olivine-Phyric Shergottite NWA 6234. *Lunar and Planetary Science Conference XLIV* Abstract # 2208.

J. Filiberto, J. Gross, J. Trela*, and E. C. Ferré (2013) Constraints on Fabric-Forming Mechanisms in Shergottite NWA 6963: Results from Mineralogy and Shape-Preferred Orientation. *Lunar and Planetary Science Conference XLIV* Abstract # 2124.

E. L. Walton, T. G. Sharp, J. Hu, and **J. Filiberto** (2013) Shock metamorphism of the Tissint Martian meteorite I: Constraints on shock conditions and post-shock thermal history. *Lunar and Planetary Science Conference XLIII* Abstract # 1039.

2012

P.A. Giesting[#], **J. Filiberto**, N. Starkey, I.A. Franchi, S.P. Schwenzer, A. Tindle, and A.H. Treiman (2012) Acidic, High D/H Magmatic Fluids in the Deep Martian Interior: Evidence from Martian Amphibole and Glass Compositions. *GSA Fall Meeting.* Abstract ID#: 212114

J. Filiberto and S.P. Schwenzer (2012) Thermochemical Constraints For the Formation Conditions of the Hydrothermal Alteration Mineralogy of Home Plate and Columbia Hills. *AGU Fall Meeting*.

W. S. Kiefer, **J. Filiberto** and C. Sandu (2012) The Thermochemical Evolution of the Martian Mantle: Alkali Abundances and Their Effects on the Mantle Solidus and Magma Production Rate over Time. *Workshop on the Mantle of Mars: Insights from Theory, Geophysics, High-Pressure Studies, and Meteorites.* Abstract # 6034.

J. Filiberto and R. Dasgupta (2012) Constraints on the Depths and Thermal Vigor of Basalt Formation in the Martian Mantle. *Workshop on the Mantle of Mars: Insights from Theory, Geophysics, High-Pressure Studies, and Meteorites.* Abstract # 6019.

M. Melwani Daswani, **J. Filiberto,** F. Abernethy, M. Grady, J. Gross, S.P. Schwenzer, I.P. Wright, and the NWA 6234 Consortium (2012) Microprobe Analyses in the Framework of the Consortium to Study 3.3 g of the NorthWest Africa 6234 Shergottite. *UK Planetary Forum 9th Early Career Planetary Scientists' Meeting.* Abstract.

J. Gross, **J. Filiberto,** A. H. Treiman, C. D. K. Herd, M. Melwani Daswani, and S. P. Schwenzer (2012) Petrography, Mineral Chemistry, and Crystallization History of Olivine-Phyric Shergottite NWA6234: a New Intermediate Melt Composition. *Lunar and Planetary Science Conference XLII* Abstract #2693.

C.A. Goodrich, A. H. Treiman, **J. Filiberto,** and J. Gross (2012) K_2O-Rich Melt From The Martian Mantle? *Lunar and Planetary Science Conference XLII* Abstract #1276.

J. Filiberto, E. J. Chin, J.M. Day, J. Gross, S.C. Penniston-Dorland, S.P. Schwenzer, and A.H. Treiman (2012) Geochemistry of Intermediate Olivine-Phyric Shergottite NorthWest Africa 6234. *Lunar and Planetary Science Conference XLII* Abstract #1139.

2011

J. Filiberto, F. Abernethy, I.B. Butler, J. Cartwright, E.J. Chin, J.M. Day, C. Goodrich, M. Grady, J. Gross, I. Franchi, C.D.K. Herd, S.P. Kelley, U. Ott, S.C. Penniston-Dorland, S.P. Schwenzer, and A.H. Treiman (2011) Maximizing the science return from 3.3 g of martian meteorite: A consortium study of olivine-phyric shergottite NorthWest Africa 6234. *AGU Fall Meeting*.

J. Filiberto, A.H. Treiman, and R. Dasgupta (2011) Comparing the Effects of H_2O, F, and Cl on Near-Liquidus Phase Equilibria of a Model High-Fe Basalt: Implications for Volatile Induced Mantle Melting. *Lunar and Planetary Science Conference XLII* Abstract #2064.

J. Filiberto and S.P. Schwenzer (2011) Hydrothermal Alteration Mineralogy of Home Plate: Thermochemical Constraints for their Formation Conditions. *Lunar and Planetary Science Conference XLII* Abstract #2072.

J. Gross, A. H. Treiman, and **J. Filiberto** (2011) Constraints on the geochemical variations and evolution of the lunar crust and mantle as revealed by Fe, Mn and Cr concentrations in olivine. *Lunar and Planetary Science Conference XLII* Abstract #2805.

J. Filiberto (2010) Geochemical Differences between Surface Basalts and Martian Meteorites: The Need for Martian Sample Return. *The Importance of Solar System Sample Return Missions to the Future of Planetary Science Workshop* Abstract #5004.

2010

J. Filiberto, J. Wood^, L. Le., R. Dasgupta, N. Shimizu, A.H. Treiman (2010) Effect of Fluorine on Near-Liquidus Phase Equilibria of Basalts. *AGU Fall Meeting* V34C-07.

W.S. Kiefer, Q. Li, **J. Filiberto** and C. Sandu (2010) The Importance of Mantle Composition in Controlling Magma Production Rates on Mars and Venus. *AGU fall meeting* DI33B-05.

J. Filiberto and R. Dasgupta (2010) Fe-Mg Partitioning Between Olivine and Martian Magmas: Application to Genesis of Olivine-Phyric Shergottites and Conditions of Melting in the Martian Interior. *Annual METSOC Meeting* Abstract #5259, *Meteoritics and Planetary Sciences 45* (Supplement), A54.

T. Conner, S. Andrus, B. Daniels, S. Hartzell, J. Haskell, S. Maximowicz, S. Laine, **J. Filiberto,** and A. Pagano (2010) Examination of Lunar Maria Ages Based on Cratering Densities. *Lunar Science Forum 2010* Abstract #121.

J. Filiberto, R. Dasgupta, and A.H. Treiman (2010) Effect of Chlorine on Near-Liquidus Phase Equilibria of Basalts. *Goldschmidt Conference Abstractions, Geochimica et Cosmochimica Acta*.

J. Filiberto, R. Dasgupta, W.S. Kiefer, and A.H. Treiman (2010) High Pressure Phase Equilibrium Investigation of the Home Plate Pyroclastic Basalt Fastball and Application to Melting in the Martian Mantle. *Lunar and Planetary Science Conference XLI* Abstract #1238.

J. Filiberto, J. Gross, and A.H. Treiman (2010) Basaltic Pyroclastic Deposits on Earth and Mars: Constraints for Robotic Exploration of Martian Pyroclastic Deposits. *Lunar and Planetary Science Conference XLI* Abstract #1936.

J. Gross, A.H. Treiman, **J. Filiberto**, and K. Robinson (2010) Primitive olivine-phyric shergottite NWA 5789: Petrography, mineral chemistry and cooling history imply a magma similar to Yamato 980459. *Lunar and Planetary Science Conference XLI* Abstract #1813.

C.A. Goodrich, A.H. Treiman, **J. Filiberto**, and M.J. Jercinovic (2010) The Nakhla Parent Magma: Old Problems, New Approaches. *Lunar and Planetary Science Conference XLI* Abstract #1387.

S. P. Schwenzer, O. Abramov, C. C. Allen, S. Clifford, **J. Filiberto,** D. A. Kring, J. Lasue, P. J. McGovern, H. E. Newsom, A. H. Treiman, D. T. Vaniman, R. C. Wiens, and A. Wittmann (2010) The importance and exploration of Noachian impact craters as windows into the subsurface and as potential habitats for early Martian life. *Lunar and Planetary Science Conference XLI* Abstract #1589.

S. P. Schwenzer, O. Abramov, C. C. Allen, S. Clifford, **J. Filiberto,** D. A. Kring, J. Lasue, P. J. McGovern, H. E. Newsom, A. H. Treiman, D. T. Vaniman, R. C. Wiens, and A. Wittmann (2010) Exploring Martian Impact Craters: Why They are Important for the Search for Life. *Astrobiology Science Conference 2010* Abstract #5527.

2009

A.H. Treiman, S.S. Shipp, W.S. Kiefer, and **J. Filiberto** (2009) Using Field Experience to Build Understanding of Planetary Volcanology. *Geological Society of America, 2009 annual meeting,* GSA Abstracts with Programs.

J. Filiberto and A.H. Treiman (2009) Comparing the effect of volatiles (H_2O, F, Cl) on liquidus depression of a basalt. *MARGINS TEI Workshop: Volatiles in the Subduction Factory*.

J. Filiberto and A.H. Treiman (2009) Chlorine-Rich, Water-Poor Martian Magmas. *Goldschmidt Conference Abstractions, Geochimica et Cosmochimica Acta* A376.

J. Filiberto and A.H. Treiman (2009) Martian Magmas: Water-poor but Chlorine-rich. *Lunar and Planetary Science Conference. XL* Abstract #1449.

J. Wood^, **J. Filiberto**, and A.H. Treiman (2009) The Effect of Fluorine on the Liquidus of an Adirondack-Class Martian Basalt. *Lunar and Planetary Science Conference.XL* Abstract #1105.

J. Filiberto (2009) Magmatic Diversity on Venus: Constraints from terrestrial analog experiments. *Workshop on Venus Geochemistry: Progress, Prospects, and New Missions* Abstract #2017.

W.S. Kiefer and **J. Filiberto** (2009) Melting Venus: Potential Geochemical Diagnostics of Mantle Source Depth. *Workshop on Venus Geochemistry: Progress, Prospects, and New Missions* Abstract #2005.

P. J. McGovern and **J. Filiberto** (2009) Interactions of Mechanical Controls on Magma Emplacement with the Petrology of Volcanic Edifice-building Flows on Venus. *Workshop on Venus Geochemistry: Progress, Prospects, and New Missions* Abstract #2023.

2008

J. Filiberto, M.R. Kirchoff, S.P. Schwenzer, W. Kiefer, and A.H. Treiman (2008) High-Fe, low-Al basalts: evidence of extensive mantle processing on the Earth, Moon, Mars, Vesta, Venus, and Io. *Geological Society of America, 2008 annual meeting,* GSA Abstracts with Programs.

J. Filiberto and A.H. Treiman (2008) Experimental Investigation on the Effect of Cl in Martian Basaltic Systems. EGU Abstract # EGU2008-A-02906.

J. Filiberto and A.H. Treiman (2008) The Effect of Chlorine on Phase Relations of a Martian Basalt: Implications for Mantle Volatiles. *Lunar and Planetary Science Conference. XXXIX* Abstract #1431.

C. Jackson^, **J. Filiberto**, A.H. Treiman, and L. Le (2008) Phase Equilibria Effects and Partitioning of Nickel Using the Humphrey Composition. *Lunar and Planetary Science Conference XXXIX* Abstract #1495.

H. Elkinton^, J. H. Jones, M. D. Dyar, L. Le., and **J. Filiberto** (2008) Differentiation of the HED Parent Body and an Evaluation of the MELTS Computational Program. *Lunar and Planetary Science Conference XXXIX* Abstract #2093.

2007

J. Filiberto, A.H. Treiman, W.S. Kiefer, and Q. Li (2007) The Effect of Water on Liquidus Temperatures. *Workshop on Water in Planetary Basalts* Abstract #2010.

W.S. Kiefer, Q. Li, and **J. Filiberto** (2007) Parameterizations of Magma Production in a Water-Undersaturated Martian Mantle: A Plea for Improved Experimental Petrology Constraints. *Workshop on Water in Planetary Basalts* Abstract # 2016.

C. Jackson^, **J. Filiberto**, A.H. Treiman, and L. Le (2007) Partitioning and Phase Effects of Ni for the Martian Basalt Humphrey Composition. *Eos. Trans. AGU,* 88 (52), Fall Meet. Suppl., Abstract V13D-1594.

J. Filiberto and A.H. Treiman (2007) An Experimental Investigation Into The Effect Of Chlorine On Crystallization Of A Gusev Basalt. *70th Annual METSOC meeting* Abstract #5266.

J. Filiberto and A.H. Treiman (2007) Experimental Investigation Into The Effect Of Chlorine In A Martian Basaltic System. *7th International Conference on Mars* Abstract # 3191.

J. Filiberto and A.H. Treiman (2007) Crystallization Experiments On A Gusev Basalt Composition. *Lunar and Planetary Science Conference XXXVIII* Abstract #1341.

J. Filiberto (2007) A New Martian Basalt Source Region Model Composition Calculated Based On Terrestrial Ferropicrites As Analogs To Martian Basalts. *Lunar and Planetary Science Conference XXXVIII* Abstract #1338.

2006

H. Nekvasil, F.M. McCubbin, **J. Filiberto**, L. Beavon, and D.H. Lindsley (2006) Linking Martian Rocks from Gusev Crater and the Chassignite Meteorites. *Geological Society of America, 2006 annual meeting,* GSA Abstracts with Programs Vol. 38, No. 7.

J. Filiberto, H. Nekvasil, F.M. McCubbin, and D.H. Lindsley (2006) Are Terrestrial Ferropicrites Analogues of Martian Rocks? *Lunar and Planetary Science Conference XXXVII* Abstract #1081.

H. Nekvasil, F.M. McCubbin, and **J. Filiberto**. (2006) Terrestrial Ferropicritic Dunites: Implications for the Chassignites. *Lunar and Planetary Science Conference* XXXVII Abstract #1096.

F.M. McCubbin, H. Nekvasil, D.H. Lindsley, **J. Filiberto** (2006) The Chemical Nature of Kaersutite Experimentally Produced at 0 Kbar *Lunar and Planetary Science Conference XXXVII* Abstract #1097.

2005

J. Filiberto and H. Nekvasil. (2005) Are the SNC Meteorites Clearly Distinct from Terrestrial Rocks? *68th Annual METSOC Meeting* Abstract #5189.

H. Nekvasil, **J. Filiberto**, F. McCubbin, and D.H. Lindsley (2005) Combining Chassigny and Diderot: New Constraints on Possible Parental Magmas and Crystallization Histories. *68th Annual METSOC Meeting* Abstract #5259.

J. Filiberto, H. Nekvasil, D.H and Lindsley (2005) An experimental crystallization study of a proposed high-Fe, low-Al Martian parental liquid at elevated pressure. *Lunar and Planetary Science Conference XXXVI,* Abstract #1359.

H. Nekvasil and **J. Filiberto** (2005) The Earth/Mars dichotomy in Mg/Si and Al/Si ratios: is it real? *Lunar and Planetary Science Conference XXXVI.* Abstract#1413.

2004

J. Filiberto, H. Nekvasil, and D.H. Lindsley (2004) Problems with a Low-Pressure Tholeiitic Magmatic History for the Chassigny Dunite. *Lunar and Planetary Science Conference 35* Abstract #1285.

H. Nekvasil, **J. Filiberto**, and D.H. Lindsley (2004) Alkalic Volcanism on Mars? *Lunar and Planetary Science Conference 35,* Abstract #1280.

2003-2000

J. Filiberto and H. Nekvasil (2003) Linking Tholeiites and Silica-undersaturated Alkalic Rocks: an Experimental Study. *Geological Society of America, 2003 annual meeting,* GSA Abstracts with Programs Vol. 35, No. 6.

H. Nekvasil, D.H. Lindsley, M.L. Whitaker, **J. Filiberto**, N. Difrancesco, L. Rossier, and J. Horn (2003) Tholeiites, anorthosites, potassic granites, sodic trachytes, and tephriphonolites: is there a link? *Geological Society of America, 2003 annual meeting,* GSA Abstracts with Programs Vol. 35, No. 6.

H. Nekvasil, **J. Filiberto**, M. Whittaker, and D.H. Lindsley (2003) Magmas Parental to the Chassigny Meteorite: New Considerations. *6th International Conference on Mars* Abstract # 3041.

J.E. Dixon, **J.R. Filiberto**, J.G. Moore, and C.J. Hickson (2000) Volatiles in basaltic glasses from a subglacial volcano in northern British Columbia (Canada): implications for mantle volatiles and ice sheet thickness. *Volcano-Ice Interaction on Earth and Mars Conference*, 2000.