

## **Dr. Vera Assis Fernandes**

*Founder, Manager & Scientific Consultant of Aventuras Planetárias/Planetary Adventures, Marvão, Portugal* <https://www.aventurasplanetarias.pt/>

Visiting Researcher at Instituto Dom Luiz, Faculdade de Ciência, Universidade de Lisboa, Portugal

Visiting Researcher at Zentrum für Rieskrater- und Impaktforschung Nördlingen (ZERIN), Nördlingen, Germany

Email: veraafernandes@yahoo.com

Tel.: +351 91 239 3842 or +49 151 4330 4874

Google Scholar: Citations 2026 h-index 29, i10-index 37; ORCID: 0000-0003-0848-9229

---

### **EDUCATION**

- 1999-2002 PhD. Marie Curie Fellow at the Victoria University of Manchester, England. Title:  $^{40}\text{Ar}$ - $^{39}\text{Ar}$  age determination and petrography of lunar samples: Luna missions and meteorites.
- 2002 Summer Session Program International Space University at the California Polytech University in Pomona, California, USA
- 1996-1999 MSc. In Geochemistry, State University of New York at Albany, NY, USA. Title: Major- and minor-element analysis of Apollo 14 volcanic green glasses B, and petrogenic modeling of Apollo 14 green glasses A and B.
- 1993-1996 BSc. In Geology at Syracuse University, NY, USA
- 1989-1991 Associate in Applied Science (A.A.S.) in General Horticulture, State University of New York at Morrisville, NY, USA
- 1985-1988 Techno-Professional degree in Agriculture (Secondary School) Escola Secundária D. Dinis, Paia, Lisbon, Portugal

### **EMPLOYMENT**

- 2023-present Self-Employed Lunar & Planetary Science Researcher and Educator. Manager of *Aventuras Planetárias/Planetary Adventures*, Marvão, Portugal
- 2021-2022 Horizontereignis gUG – Unternehmerinnenzentrum, Berlin, Germany
- 2018-2020 Marie Skłodowska-Curie Individual Fellowship (EU project 749815 – XeMoon), University of Manchester, United Kingdom
- Since 2017 Research Fellow of the Instituto D. Luiz, University of Lisbon, Portugal
- 2015 - 2018 DFG- Research Fellow - Museum für Naturkunde, Berlin, Germany
- Since 2014 Research Associate – Centre for Earth Evolution and Dynamics (CEED), University of Oslo, Norway, and the New University of Lisbon, Portugal
- 2011 - 2013 DFG-ICDP Research Fellow - Museum für Naturkunde, Berlin, Germany
- 2010 - 2011 Post-Doc Institute of Physics, University of Bern, Bern Switzerland
- 2007 - 2009 Post-Doc Fellow of Berkeley Geochronology Center, Berkeley, CA, U.S.A.
- 2003 – 2007 Post-Doc Fellow of Fundação para a Ciência e a Tecnologia at Instituto Geofísico da Universidade de Coimbra and University of Manchester
- 1998 Research Assistant, State University of New York at Albany, NY, USA
- 1997-8 Graduate Assistant, State University of New York at Albany, NY, USA
- 1996-8 Teaching Assistant, State University of New York at Albany, NY, USA
- 1998 Research Assistant, Matrix Environmental Technologies, Inc. Orchard Park, NY, USA

- 1996 Research Assistant, Matrix Environmental Technologies, Inc. Orchard Park, NY, USA
- 1994 Project Assistant, Matrix Environmental Technologies, Inc. Orchard Park, NY, USA
- 1993-6 Geochemistry Laboratory Assistant, Syracuse University Syracuse, NY, USA

### RESEARCH ACTIVITIES

- 2020-Present Co-Leader of Chang'e-5 samples research Consortium based at the State Key Laboratory of Lunar and Planetary Sciences, in the Macau University of Science and Technology (MUST).
- 2020-present Self-funded Lunar and Planetary Researcher
- 2014-present NASA Apollo sample Principle Investigator.
- 2012-2014 Co-Investigator on the L-DPEM study for in preparation of the ESA Lunar lander lead by the Finnish Meteorological Institute.
- 2011- 2012 Co-Investigator on the study for the L-DEPP instrument planned for the ESA Lunar Lander lead by the Finnish Meteorological Institute.
- Since 2011 Scientific Advisor for the in-situ Reflectron Time-of-Flight space, University of Bern, Switzerland
- 2010-13 NASA-LASER collaborator (PI Dr. N. Artemieva), Planetary Science Institute, Tucson, AZ, USA
- 2009–2010 Member of the Antarctic Search for Meteorites (ANSMET)
- 2007-2010 Co-Investigator of the C1XS instrument onboard ISRO Chandrayaan-1 lunar orbiter
- Since 2005 Member of Portuguese Committee for the International Polar Year (IPY)
- Since 2005 Co-Investigator of the MARS-XRD instrument in the payload of the Mars lander EXO-Mars, ESA-NASA (scheduled launch in 2018).
- 2004-5 Member of the Antarctic Search for Meteorites (ANSMET); First Portuguese person at the South Pole
- 1999-2006 Co-Investigator of the D-CIXS instrument in the payload of the SMART-1 spacecraft of ESA.

### TEACHING EXPERIENCE

- 2021 Lua: corpo planetário de mono-placa, University of Lisbon, Portugal.
- 2019 Meteorites and Planetary Materials Lecture, University of Manchester, U.K.
- 2014 Workshop in Planetary Sciences at the Cadi Ayyad University, Marrakesh, Morocco.
- 2014 Course convener for “Earth and Moon as part of a planetary system”, Museum für Naturkunde-Berlin/Frei Universität-Berlin, Spring Term
- 2008 Co-organizer and lecturer, Graduate Seminar on Meteorites Organizer University of California at Berkeley, Autumn Term
- 2000-1 Demonstrator at the University of Manchester: Planetary Science and petrology
- 1996-8 Teaching Assistant for BSc. courses: Geochemistry, Tectonics, Igneous and Metamorphic Petrology, Field Methods and Stratigraphy, Physical Geology Laboratory, and Planet Earth, State university of New York at Albany, NY, USA.

**STUDENT SUPERVISION**

One PhD student – Royal Observatory of Belgium (2021-present)

Three PhD students – University of Bern (2011-2014; 2017-present) and University of Manchester (2011-present)

Four MSc. Student – University of Manchester (2004; 2018/19), Freie Universität, Berlin (2017/19)

Five BSc. Students – University of Coimbra (2003-4), University of Lisbon (2014/15) and Freie Universität-Berlin (2012)

**AWARDS AND HONOURS**

2010 Antarctica Service Medal

1996 Thomas Cramer Award, Outstanding Senior in Geology, Syracuse University

1995 Fay M. Merriam Award, Syracuse University

1994 Thomas Cramer Award, Outstanding Junior in Geology, Syracuse University

**RESEARCH GRANTS**

2018-2020 Marie Skłodowska-Curie Individual Fellowship (Horizon 2020 project No. 749815 – XeMoon) - University of Manchester, United Kingdom. €186 000

2015-2018 German Science Foundation (DFG - FE 1523/3-1): Bridging the gap: Integrating soil particle and remote sensing analyses to constrain lunar mantle evolution. €360 650

2014 Centre for Earth Evolution and Dynamics (CEED, University of Oslo, Norway, Research Fellow Grant. €35 000

2011-2013 International Space Science Institute (ISSI) International Team (Leader): Updating the lunar chronology and stratigraphy: new laboratory and remote sensing data, and new approaches to the interpretation of old data. CHF26 000

2011 - 2013 German Science Foundation (DFG - FE 1211/1-2): The petrology, geochemistry and age determination of impact melt from the USGS-ICDP drill core Eyreville-B into the late Eocene Chesapeake Bay impact structure. €250 000

2010-2013 NASA-LASER Collaborator of project lead by Dr. N. Artemieva, Planetary Science Institute; Impact ejecta on the Moon and beyond - numerical modeling and comparison with lunar samples.

5/2010 EU Integrated Activities grant: SYNTHESYS €2 000

2008-2012 NASA-LASER Collaborator of project by Dr. B. Weiss, MIT (\$355 000)

2005-2008 PPARC Visiting Researcher of the Isotope Cosmochemistry and Geochemistry Group, School of Earth, Atm., and Environ. Sciences, Univ. of Manchester, U.K. £10,000

2004-2006 Royal Society Joint Project Grant under the Royal Society European Exchange Programme – a grant with the aim of promoting and furthering exchanges between scientists in the UK and other European countries. £23,000

2003-2007 Post-Doc Fellowship from the Fundação para a Ciência e a Tecnologia, Portugal. €132 130

**SCHOLARSHIPS AND TRAVEL GRANTS**

2003 Centre national d'études spatiales (CNES) grant, France

2002	PhD grant, Fundação para a Ciência e a Tecnologia (Science and Technology Foundation; FCT), Portugal
2002	Museo de las Ciencias de Castilla-La Mancha grant, Spain
2002	ESA Scholarship Full Grant
2002	NASA-Ames Human Exploration and Development in Space (HEDS) Enterprise Grant, USA
2002	ESA Travel Grant
2001	Brian Mason Award, Meteoritical Society, USA
2001	ESA Travel Grant
2000	ESA Travel Grant
1999-2001	Marie Curie Doctoral Fellowship
1997	Graduate Assistant Scholarship at SUNY at Albany
1996	Teaching Assistant Scholarship at SUNY at Albany

### **PUBLIC OUTREACH GRANTS**

2021	Projekt Tegel on “Planetology: Exploring & Comparing Planets”, Horizonteraignis, Berlin Germany and Ciência Viva Portugal. Private donation	€60 000
------	---	---------

### **HONORARY POSITIONS**

Since 2023	Gastwissenschaftlerin at Zentrum für Rieskrater- und Impaktforschung Nördlingen (ZERIN), Nördlingen, Germany
Since 2017	Visting academic at Instituto Dom Luiz, University of Lisbon, Portugal.
2018-2023	Gastwissenschaftlerin at the Museum für Naturkunde, Berlin, Germany
2014-2021	Research Scientists at Center of Earth Dynamics, University of Oslo
2013-2017	Research Scientist of UNINOVA Institute, New University of Lisbon
2004-2006	Honorary Researcher of the University College of London
2003-2023	Visiting Researcher at the University of Manchester

### **SERVICE TO THE SCIENTIFIC COMMUNITY**

#### Grant Reviewer:

2017-present	European Commission FETOPEN RIA proposals
2017	NASA-SSW panelist
2015	NASA-NESSF14 research grant proposals
2014	NASA-NSPIRES

#### Journal Referee:

Acta Astronomica, American Mineralogist, Australian Journal of Earth Sciences  
Comunicações Geológicas, Contributions to Mineralogy and Petrology, Earth and Planetary  
Science Letters, Geochimica et Cosmochimica Acta, Geological Society of London,  
Geosciences, Geostandards and Geoanalytical Research, Icarus, Journal of Geophysical  
Research – Planets, and Meteoritical and Planetary Sciences, Science Magazine, Chemie der  
Erde.

**CONFERENCES AND WORKSHOPS ORGANISED**

- 2022 Co-Chair of Forming and Exploring Habitable Worlds International Meeting and Member of the Scientific Steering Committee. November 7 – 13, 2022, Edinburgh, UK.
- 2020 Convener Planetary interior evolution and volcanism at XVIth Rencontres du Vietnam “Planetary Science: The Young Solar System” September 6 – 12, 2020, Quy Nhon, Vietnam.
- 2019 Initiator and Member of the Local and Scientific Organizing Committees of the “*The Moon as a ‘contact zone’ to other worlds: an interdisciplinary workshop*” Manchester, UK, 23rd-24th May, 2019.
- 2019 Member of the Local Organizing Committee of the 7<sup>th</sup> European Lunar Symposium, Manchester, U.K., 21-23 May, 2019.
- 2018 Session Co-Convener and Chair at the European Planetary Science Conference, Berlin, Germany, 16-21 Sep, 2018.
- 2017 Convener and Chair at the Goldschmidt Conference, Paris, France August 13-18, 2017.
- 2016 Convener and Chair at the Goldschmidt Conference, Yokohama, Japan, June 26 - July 1, 2016
- 2015 Co-organiser of Pre-meeting workshop “The first 1 billion years of the Solar System”, Meteoritical Society-Berkeley July 25-26, 2015
- 2013 Organiser and Leader of International Space Science Institute (ISSI) International, Team meeting 5-7 August 2013, Bern, Switzerland
- 2012 Organiser and Leader of International Space Science Institute (ISSI) International Team meeting 7-11 May 2012, Bern, Switzerland
- 2011 Organiser and Leader of International Space Science Institute (ISSI) International Team meeting 24-26 October 2011, Bern, Switzerland
- 2010 Organising committee for the session on Protecting the Lunar and Martian Environments for Scientific Research at the COSPAR Conference, 18-25 July
- 2010 Scientific Committee for the 2<sup>nd</sup> Portuguese Meeting on Polar Sciences, 26 Apr 2010
- 2009 Session Co-Convener and Chair Goldschmidt Conference, Davos, Switzerland, 21-26 Jun 2009
- 2008 Session Co-Convener and Chair Goldschmidt Conference, Vancouver, Canada, 13-18 Jul 2008
- 2006 Session Co-Convener and Chair European Planetary Science Conference, Berlin, Germany, 18-22 Sep 2006
- 2006 Session Co-Convener and Chair at the EGU-Vienna, Austria, 2-7 Apr 2006.
- 2006 Session Chair at the 37<sup>th</sup> Lunar and Planetary Sciences conference, Houston, USA, 13-17 Mar 2006
- 2005 SMART-1 mission (ESA) Science working team meeting and Public outreach events, Coimbra, Portugal, 30 Sep – 5 Oct 2005

**INVITED LECTURES**

- 2020 Macau University of Science and Technology, Macau, China (postponed to 202x).
- 2020 Royal Astronomical Observatory, Brussels, Belgium (postponed to 202x).
- 2019 Bayerisches Geoinstitut, Universität Bayreuth, Bayreuth, Germany

- 2019 Keynote speaker at the XV<sup>th</sup> Rencontres du Vietnam, LIFE3E'2019: SEARCH FOR LIFE, FROM EARLY EARTH TO EXOPLANETS, 25<sup>th</sup> – 29<sup>th</sup> March, 2019, Quy Nhon, Vietnam
- 2018 Chinese Academy of Sciences, Beijing, 30 Oct. 2018
- 2018 Nanjing University, Nanjing, China, 25 Oct. 2018
- 2018 Guilin University of Technology, Guilin, China, 16 Oct. 2018
- 2018 University of Cologne, Institute for Geology and Mineralogy, 17 Jan. 2018.
- 2017 Technical University of Freiberg, Dept. Geology, 14 Dec. 2017
- 2017 3<sup>rd</sup> Beijing International Forum on Lunar and Deep Space Exploration, 19-22 Sep. 2017.
- 2017 ETH-Zürich, Department of Earth Sciences, Institute of Geochemistry and Petrology, 1 Sep. 2017.
- 2015 Max Planck Institute for Solar System Research, Univ. Göttingen, 3 Sep. 2015.
- 2015 Geosciences Department, University of Lisboa, Portugal, 1 Jun 2015.
- 2014 Nordic Network for Astrobiology General meeting at the Centre of Geobiology, University of Bergen, Norway. Conference on Biosignatures across space and time (Solicited speaker), 21 May 2014.
- 2014 Centre for Earth Evolution and Dynamics (CEED), University of Oslo, Norway, 6 May 2014.
- 2013 Department of Earth Sciences, Syracuse University, U.S.A., 26 March 2012.
- 2012 European Lunar Science Symposium (Keynote speaker), Berlin, Germany, 19 Apr 2012.
- 2011 Museum für Naturkunde-Berlin, Germany, 8 Jun 2011.
- 2010 Physics Institut, Univ. Bern, Switzerland, 2 Jun 2010.
- 2010 Museum für Naturkunde, Berlin, Germany, 29 May 2010.
- 2009 Institute of Earth Sciences, Vrije Universiteit, Amsterdam, The Netherlands. 23 Jan 2009.
- 2008 Lunar and Planetary Institute, Houston, Texas, USA, 1 Feb 2008.
- 2008 Dept. Earth and Planetary Science, Univ. California at Berkeley, Berkeley, California, USA, 30 Jan 2008.
- 2007 John de Laeter Centre of Mass Spectrometry at the Department of Applied Geology, Curtin University of Technology, Perth, Australia, 30 Jan 2007.
- 2006 Museum für naturkunde, der Humboldt- Universität zu Berlin, Germany, 20 Dec 2006.
- 2006 Institut für Planetologie, Westfälische Wilhems-Universität Münster, Germany, 27 Nov 2006.
- 2006 Royal Astronomical Society meeting, Solar-System Exploration by Spacecraft and by Sample Analysis. London, United Kingdom, 10 Nov 2006.
- 2006 Geological Institute, University of Copenhagen, Denmark, 28 Sep 2006.
- 2006 Chautauqua Short Courses, Northern Arizona University, Flagstaff, Arizona, USA, 18 Jun 2006
- 2006 Department of Earth Sciences, Univ. Coimbra, Portugal, 19 May 2006.
- 2006 Department of Mathematics and Astronomy at University of Coimbra, Portugal, 2 Feb 2006
- 2004 Danish Lithospheric Centre in Copenhagen, Denmark, 7 Apr 2004.
- 2001 Department of Mineralogy, Division of Meteoritics and Cosmic Mineralogy Division at the Natural History Museum, London, UK, 5 Dec 2001.

**PUBLIC OUTREACH**

- 2023 “Espaço vai à Escola”, October-November 2023, at different schools across Portugal.
- 2023 “Lua: biblioteca de informação com 4500+ milhões de anos”, in *Hackthon de Professores do Espaço 2023: Regresso à Lua*. Vila do Porto, Santa Maria, Açores (10-14 Julho).
- 2022 “Espaço vai à Escola”, October-November 2022, at different schools across Portugal.
- 2022 Lunar Exploration Worksop Panel at the Summer Space Festival, Brussels, Belgium. <https://summerspacefestival.fr/en>
- 2022 Aventuras Planetárias/Planetary Adventures/Planetare Abenteuer at: Temple-Grandin-Schule and KreativitätsGrundschule Berlin-Karlshorst, Berlin, Germany.
- 2022 Aventuras Planetárias/Planetary Adventures/Planetare Abenteuer at: Agrupamento de Escolas de Elvas, Vila Boim (6<sup>th</sup> and 7<sup>th</sup> Grades).
- 2022 Aventuras Planetárias/Planetary Adventures/Planetare Abenteuer at: Agrupamento de Escolas de Castelo de Vide (7<sup>th</sup> and 9<sup>th</sup> Grade).
- 2021 Aventuras Planetárias/Planetary Adventures/Planetare Abenteuer at: Agrupamento de Escolas de Corroios (9<sup>th</sup> Grade), Escola Básica Paruque das Nações (4<sup>th</sup> Grade), and Escola Básica Vasco da Gama (1<sup>st</sup> and 2<sup>nd</sup> Grade).
- 2021 Interview for Observador Rádio programme “Convidado extra”.
- 2020 Ciência Viva, Portugal. 7<sup>a</sup> Conferência de Professores Espaciais - Convite - Painel "O que há de novo no sistema solar?"
- 2020 Ciência Viva, Portugal. “Step into Space” itinerant exhibit in partnership with Space.eu, HORIZON2020.
- 2020 Shuttleworth College, Burnley, Lancashire, UK (106 10<sup>th</sup> graders): Hunting for meteorites in the Antarctic Plateau: La Paz icefields 2004/5 and Miller Range 2009/10. Lecture and meteorites specimen presented.
- 2019 British Science Festival, Coventry. Presentation of “The Moon is NOT ours” in the session “Have we given up on the future?” organized by Dr. Alex Ball.
- 2019 Interview for the newspaper “Jornal i” on the Chang’e-4 landing on the lunar farside, 5<sup>th</sup> January, 2019, Lisbon, Portugal
- 2019 Interview at the RTP2 Evening news on the Chang’e-4 landing on the lunar farside, 3<sup>rd</sup> January, 2019, Porto, Portugal
- 2018 Lecture at the 5<sup>th</sup> Conference “Professores Espaciais” in Lisbon, Portugal, for all school levels teachers. Sponsored by ESERO. 28-29<sup>th</sup> September 2018.
- 2018 “Bluedot” Festival part of the Cosmochemistry Research Group booth at the festival. 20<sup>th</sup> July, 2018.
- 2018 Interview for 2 episodes of ARTE channel documentary “Mensch und Mond” aired in January 2019, and available online: <https://www.arte.tv/en/videos/078691-001-A/man-and-moon-1-3/>
- 2015 Hunting for meteorites in the Antarctic Plateau 2009-10 and La Paz icefields 2004-5 Miller Range 2009/10, Comenius-Schule, Berlin, 16 Oct 2015.
- 2013 Interview for the Portuguese Radio Station Antena 1 on the Ural meteor fall, Chelyabinsk meteorite, 15 Feb 2013.
- 2012 Interview for the “Mais Alentejo” regional magazine, 15 Dec 2012
- 2012 À Caça de meteoritos no planalto Antártico e montanhas Trans-Antarcticas” at Escola Sec. Emídio Navarro, Almada, Portugal, 9 Jan 2012.
- 2010 Interview for the Portuguese weekly newspaper Expresso and the online SIC-channel (TV channel) regarding my participation on the ANSMET2009-10, 13 Mar 2010.

- 2010 Interview for the Portuguese daily newspapers the daily Correio da Manhã regarding my participation on the ANSMET2009-10, 15 March 2010
- 2009 Lectures: “À Caça de meteoritos no planalto Antártico” at the National of Natural History of the University of Lisbon, Portugal, 14 April 2009.
- 2008 Participation in the collaboration between the Portuguese Committee for the International Polar Year and the Portuguese Postal Service in the elaboration of the 2008 Calendar Book (sold for the public), Aug 2008.
- 2007 Lecture for three schools from the County of Odivelas, Portugal integrated in the activities of the Portuguese Committee for the International Polar Year (IPY): How to search for meteorites in the Antarctic plateau, 13 Jun 2007
- 2006 Interview for Portuguese Radio Station Antena 1 and the newspaper Diário de Notícias for the theme of the “crash” of the ESA mission SMART-1, Sep 2006
- 2006 Two lectures at the School of Gavião, Portugal for students in the age range of 11 and 15 years. One lecture in the Town Hall of Portalegre, Portugal for school students of the city during the celebration of World Children Day: How to search for meteorites in the Antarctic plateau, May 2006
- 2006 Interview for the magazine Visão, a weekly portuguese opinion magazine, Jan 2006.
- 2005 Organized SMART-1 event at the University of Coimbra and Argoselo, Portugal with mission’s Science and technical Teams
- 2005 Lecture: À Caça de meteoritos no planalto Antártico. At the Lisbon Oceanário, Sep 2005
- 2005 Lecture: À Caça de meteoritos no planalto Antártico. At the Lisbon Geographic Society, June 2005
- 2005 Interview for the magazine Pública, an insert on the Sunday issue of the Portuguese newspaper Público, June 2005.
- 2005 Interview for the Portuguese National Geographic regarding my recent participation on the ANSMET expedition to Antarctica, Apr 2005.
- 2005 Interview for the Univ. of Coimbra newspaper, A CABRA, regarding participation on the ANSMET expedition to Antarctica, Feb 2005
- 2005 Two interviews for the Portuguese national radio (RDP) regarding participation on the ANSMET expedition to Antarctica, Feb 2005
- 2005 Two interviews for the Portuguese national television (RTP) regarding participation on the ANSMET expedition to Antarctica, Feb 2005.
- 2004 Lecture: Aspectos Éticos e Sociais de um possível retorno à Lua – uma perspectiva Geológica. At Arte-Ciência meeting organised by the Univ. of Azores at Angra do Heroísmo, June 2004
- 2004 Review of chapters of book: Como respiram os astronautas: e outros problemas de física biomédica, by Prof. Manuel Paiva of the Free University of Brussels, May 2004.
- 2003 Collaboration with Miguel Almeida, ESA, for Portuguese website Portal do Astrónomo, [http://www.portaldoastronomo.org/tema\\_17.php](http://www.portaldoastronomo.org/tema_17.php), Sep 2003.
- 2003 Poster: D-CIXS Detecção remota de raios-X reflectidos da superfície da Lua para o estudo da sua composição química. For the event to celebrate the launch of the ESA mission to the Moon SMART-1. Organised by Planetário Calouste Gulbenkian, Sep 2003
- 2003 Interview for the portuguese newspaper Diário de Notícias on the SMART-1 mission and lunar science, Aug 2003.



- 2003 Interview for the portuguese FOCUS magazine on the SMART-1 mission and lunar science, Aug 2003.
- 2003 Lecture: O Sistema Solar: um lugar incrivelmente diverso. Organised by the Physics/Astronomy student organisation at the University of Coimbra, Apr 2003.
- 2003 Lecture: O Sistema Solar: um lugar incrivelmente diverso. Organised by NUCLIO at the Biblioteca República e Resistência, Jan 2003
- 2002 Popular Science article, Northwest Africa 032: a young lunar basalt, Published in the Magazine Meteorite.

### **SPECIAL SKILLS**

$^{40}\text{Ar}$ - $^{39}\text{Ar}$  Mass-Spectrometry, Scanning-Electron Microscopy (SEM), Electron Microprobe geochemical analysis (EMPA); use of geochemical clean-lab (Sr-Nd column chemistry including column calibration); familiar with Thermal Ionization Mass Spectrometry; familiar with X-Ray Fluorescence; familiar with X-Ray Diffraction, and familiar with the use of LA-ICP-MS.

### **COMPUTER SKILLS**

Microsoft Office Package, Mass-Spec, Origin, iSpec application for Igor-Pro.

### **MEMBERSHIPS**

Committee on Space Research (COSPAR)

### **OTHER ACTIVITIES**

- 2017-18 Member of the Women Council Team at the Museum für Naturkunde, Berlin, Germany.
- 2015 Collaboration in an art exhibit titled "Dead wasps fly further produced" by Dr. Tahani Nadim and artist Åsa Sonjasdotter.
- 2004 First Portuguese at the South Pole (December 13<sup>th</sup>).
- 2003-6 Simultaneous contacts with the Portuguese Minister of Science and Technology, the Vice-rector for research at the University of Coimbra, and the President of the main research funding Agency (Fundação para a Ciência e a Tecnologia – FCT) for the improvement of the situation of the Post-Docs (e.g. work conditions, recognition of the post-docs existence in the institutions) in Portugal.

**PUBLISHED ARTICLES**

- [45] Werner, S. C., Bultel B., Rolf T. and **Assis Fernandes V.** (2022) Orientale Ejecta at the Apollo 14 Landing Site Implies a 200-million-year Stratigraphic Time Shift on the Moon. *Planet. Sci. J.* 3, 65. <https://iopscience.iop.org/article/10.3847/PSJ/ac54a6>
- [44] Fritz J., Greshake A., Klementova M., Wirth R., Palatinus L., Trønnes R.G., **Assis Fernandes V.**, Böttger U. and Ferrière L. (2020) Donwilhelmsite,  $[(Ca_xNa_{1-x})Al_{3+x}Si_{3-x}O_{11}]$ , a new lunar high-pressure Ca-Al-silicate with relevance for subducted terrestrial sediments. <https://doi.org/10.2138/am-2020-7393>  
*Green-Open Access:*
- [43] Fritz J., **Assis Fernandes V.**, Greshake A., Holzwarth A. and Böttger U. (2019) On the formation of diaplectic glass: Shock and thermal experiments with plagioclase of different chemical compositions. *Meteoritical and Planetary Science* 54, 1533-1547. <https://doi.org/10.1111/maps.13289>  
*Green-Open Access:*  
[https://www.research.manchester.ac.uk/portal/files/174917589/Fritz\\_et\\_al\\_2019MPS\\_diaplectic\\_glass\\_AAM.pdf](https://www.research.manchester.ac.uk/portal/files/174917589/Fritz_et_al_2019MPS_diaplectic_glass_AAM.pdf)
- [42] **Assis Fernandes V.**, Hopp J., Schwarz W.H., Fritz J.P., and Trieloff M. (2019)  $^{40}\text{Ar}$ - $^{39}\text{Ar}$  step heating of North American tektites and of impact melt rock samples from the Chesapeake Bay impact structure. *Geochimica et Cosmochimica Acta* 255, 289-308. <https://doi.org/10.1016/j.gca.2019.03.004>  
*Green-Open Access:*  
[https://www.research.manchester.ac.uk/portal/files/174917078/Assis\\_Fernandes\\_GCA\\_2019\\_AAM.pdf](https://www.research.manchester.ac.uk/portal/files/174917078/Assis_Fernandes_GCA_2019_AAM.pdf)
- [41] Fritz, J., Greshake, A., Klementova, M., Wirth, R., Palatinus, L., **Assis Fernandes, V.**, Böttger, U. and Ferrière, L. (2019) Donwilhelmsite, IMA 2018-113. *CNMNC Newsletter* No. 47, February 2019, page 201; *European Journal of Mineralogy*, 31: 199–204.  
*Open Access:*  
[https://www.schweizerbart.de/papers/ejm/detail/31/90540/IMA\\_Commission\\_on\\_New\\_Minerals\\_Nomenclature\\_and\\_CI?af=crossref](https://www.schweizerbart.de/papers/ejm/detail/31/90540/IMA_Commission_on_New_Minerals_Nomenclature_and_CI?af=crossref)
- [40] Amelin Y., Koefoeda P., Izukab T., **Fernandes V.A.**, Huyskens M.H., Yin Q.-Z., Irving A.J. (2019) U-Pb age and extant radionuclide systematics of the ungrouped achondrites NWA 6704 and NWA 6693. DOI: 10.1016/j.gca.2018.09.021  
*Green-Open Access:*  
[https://www.research.manchester.ac.uk/portal/files/82721323/GCA\\_D\\_17\\_00805R2\\_AAM.pdf](https://www.research.manchester.ac.uk/portal/files/82721323/GCA_D_17_00805R2_AAM.pdf)
- [39] **Assis Fernandes V.** (2019) Ethical and Social aspects of a Return to the Moon – A Geological perspective. *Geosciences* 2019, 9(1), 12.  
*Open Access:* <https://doi.org/10.3390/geosciences9010012>
- [38] Schiller M., Bizzarro M. and **Assis Fernandes V.** (2018) Isotopic evolution of the protoplanetary disk and the building blocks of Earth and the Moon. *Nature* 555, 507–510. doi:10.1038/nature25990  
*Open Access:*  
<http://europepmc.org/backend/ptpmcrender.fcgi?accid=PMC5884421&blobtype=pdf>

- [37] Fritz J. P., Greshake A. and **Fernandes V. A.** (2017) Revising the shock classification of meteorites. *Meteor. and Planet. Sci.* 52, 1-17. DOI: 10.1111/maps.12845  
Green-Open Access:  
[https://www.research.manchester.ac.uk/portal/files/84778688/Fritz\\_et\\_al\\_MaPS\\_2017\\_AAM.pdf](https://www.research.manchester.ac.uk/portal/files/84778688/Fritz_et_al_MaPS_2017_AAM.pdf)
- [36] McLeod C. L., Brandon A. D., **Fernandes V. A.**, Lapen T. J., Shafer J. T. and Peslier A. H., Irving A. J. (2016) Constraints on Formation and Evolution of the Lunar Crust from Feldspathic Granulitic Breccias NWA 3163 and 4881. *Geoch. et Cosmoch. Acta* 178, 350-374. <https://doi.org/10.1016/j.gca.2016.04.032>
- [35] Schwarz W.H., W.H. Trieloff W.H., Bollinger K., Gantert N., Fernandes V.A., Meyer H.-P., Povenmire H., Storzer D., Jessberger E.K. and Koeberl C. (2016) Coeval ages of Australasian, Central American and Western Canadian tektites reveal multiple impacts 790 ka ago. *Geoch. et Cosmoch. Acta*, 178, 307–319. <https://doi.org/10.1016/j.gca.2015.12.037>
- [34] Kalio E, Alho M., Alvarez F., Barabash S., Dyadechkin S., **Fernandes V.A.**, Futaana Y., Harri A.-M., Haunia T., Heilimo J., Holmström M., Jarvinen R., Lue C., Makela J., Porjo N., Schmidt W., Shahab F., Siili T. and Wurz P. (2016) Kinetic Modeling of the Lunar Dust-Plasma Environment. *Planetary and Space Science* 120, 56-69. doi: 10.1016/j.pss.2015.11.006
- [33] Claydon J. L., Crowther S. A., **Fernandes V. A.** and Gilmour J. D. (2015) Noble gases and halogens in the feldspathic asteroidal crust represented by Graves Nunataks 06129. *Geoch. et Cosmoch. Acta*, 159, 177–189. doi: 10.1016/j.gca.2015.03.013
- [32] Zhu M.-H., Chang J., Xie M., Fritz J., **Fernandes V.**, Ip W.-H., Ma T., Xu A. (2015) The Uniform K Distribution of the Mare Deposits in the Orientale Basin: Insights from Chang'E-2 Gamma-ray Spectrometer. *Earth & Planetary Science Letters* 418, 172-180. DOI: 10.1016/j.epsl.2014.11.009
- [31] Elardo S. M., Shearer C. K., Fagan A. L., Borg L. E., Gaffney A. M., Burger P.V., Neal C. R., **Fernandes V. A.** and McCubbin F. M. (2014) The origin of young mare basalts inferred from lunar meteorites Northwest Africa 4734, 032, and LaPaz Icefield 02205. *Meteor. and Planet. Sci.* 49. 261-291. DOI: 10.1111/maps.12239. <https://doi.org/10.1111/maps.12239>
- [30] Fritz J., Bitsch B., Kührt E., Morbidelli A., Tornow C., Wünnemann K., **Fernandes V.A.**, Grenfell L.J., Rauer H., Wagner R. and Werner S.C. (2014) Earth-like habitats in planetary systems. *Planetary and Space Science* 98, 254–267. <https://doi.org/10.1016/j.pss.2014.03.003>
- [29] **Fernandes V. A.**, Fritz J., Weiss B., Garrick-Bethel I. and Shuster D. (2013) The bombardment history of the Moon as recorded by  $^{40}\text{Ar}$ - $^{39}\text{Ar}$  chronology. *Meteor. and Planet. Sci.* 48, 241–269.  
Open Access: <https://doi.org/10.1111/maps.12054>.
- [28] Kalio E., Jarvinen R., Dyadechkin S., Wurz P., Barabash S., Alvarez F., **Fernandes V. A.**, Yoshifumi F., Harri A.-M., Heilimo J., Lue C., Mäkelä J., Porjo N., Schmidt W. and Siili T. (2012) Kinetic effects on Lunar plasma environment on global scale, mesoscale and microscale. *Planetary and Space Science* 74, 146-155.
- [27] Wurz P., Abplanalp D., Tulej M., Iakovleva M., **Fernandes V.A.**, Chumikov A. and Managadze G. (2012) *In Situ* Mass Spectrometric Analysis in Planetary Science. *Sol. Sys. Res.* 46 (2012) 442-459. DOI: 10.1134/S003809461206007X

- [26] Fonseca J. M., Grieger B., Morat A., Almeida M., Costa M., Antunes L., **Fernandes V. A.** (2012) SMARTIC – EXPLORING SMART-1 IMAGES. *In Proceedings of The Global Space Exploration Conference*, Washington.
- [25] Weider S.Z., Kellett B.J., Swinyard B.M., Joy K.H., Crawford I.A., Grande M., Howe C.J., Sreekumar P., Huovelin J., Narendranath S., Alha L., Anand M., Athiray P.S., Bhandari N., Carter J., Cook A.T., d’Uston L.C., **Fernandes V.A.**, Gasnault O., Goswami J.N., Gow J., Holland A., Koschny D., Lawrence D., Maddison B.J., Maurice S., McKay D.J., Okada T., Pieters C., Rothery D., Russell S.S., Shrivastava A., Smith D. and Wieczorek M. (2012). The Chandrayaan-1 X-ray Spectrometer: First Results. *Planetary and Space Science* 60, 217-228. <https://doi.org/10.1016/j.pss.2011.08.014>
- [24] Narendranath S., Athiray P. S., Sreekumar P., Kellett B. J., Alha L., Howe C. J., Joy K. H., Grande M., Huovelin J., Crawford I. A., Unnikrishnan U., Lalita S., Subramaniam S., Weider S. Z., Nittler L. R., Gasnault O., Rothery D., **Fernandes V. A.**, Bhandari N., Goswami J. N., Wieczorek M. A., and the C1XS team (2011) Lunar X-ray fluorescence observations by the Chandrayaan-1 X-ray Spectrometer (C1XS): results from a lunar highland region. *Icarus* 214, 53-66. doi:10.1016/j.icarus.2011.04.010
- [23] Joy K. H., Burgess R., Hinton R., **Fernandes V. A.**, Crawford I. A., Kearsley A. T., Irving A. J. and EIMF (2011) Petrogenesis and Chronology of Lunar Meteorite North West Africa 4472: A KREEPy regolith breccia from the Moon. *Geoch. et Cosmoch. Acta*, 75, 2420-2452. doi:10.1016/j.gca.2011.02.018
- [22] Shuster D.L., Balco G., Cassata W. S., **Fernandes V.A.**, Garrick-Bethell I., Weiss B.P. (2010) A record of impacts preserved in the lunar regolith. *Earth and Plan. Sci. Lett.* 290, 155-165. doi:10.1016/j.epsl.2009.12.016.
- [21] Shearer C.K., Burger P.V., Neal C., Sharp Z., Spivak-Birndorf L., Borg L., **Fernandes V.A.**, Papike J.J., Karner J., Wadhwa M., Gaffney A., Shafer J., Geissman J., Atudorei N-V., Herd C., Weiss B.P., and King P. (2010): Non-basaltic asteroidal melting during the earliest stages of solar system evolution. A view from Antarctic achondrites Graves Nunatak 06128 and 06129. *Geochimica et Cosmochimica Acta*, 74, 1172-1199. doi:10.1016/j.gca.2009.10.029
- [20] **Fernandes V.A.**, Burgess R. and Morris A. (2009) Ar-Ar age determinations of lunar basalt meteorites: Asuka 881757, Yamato 793169, Miller Range 05035, La Paz 02205, North West Africa 479 and Elephant Moraine 96008. *Met. And Planet. Sci.* vol. 44, 805-821. doi:10.1111/j.1945-5100.2009.tb00770.x
- [19] Bottke W.F., Allen C., Anand M., Barlow N., Bogard D., Barnes G., Chapman C., Cohen B.A. Crawford I.A., Daga A., Dones L., Eppler D., **Assis Fernandes V.**, Foing B.H., Gaddis L.R., Head J.N., Horz F. P., Jolliff B., Koeberl C., Kirchoff M., Kring D., Levison H.F., Marchi S., Meyer C., Minton D.A., Mojzsis S.J., Neal C., Nyquist L.E., Nesvorny D., Peslier A., Petro N., Pieters C., Plescia J., Robinson M., Schmidt G., Schmitt H.H., Spray J., Stewart-Mukhopadhyay S., Swindle T., Taylor L., Taylor R., Wieczorek M., Zellner N. and Zuber M. (2009) Exploring the bombardment history of the Moon. NASA Community White Paper to the Planetary Decadal Survey, 2011-2020.
- [18] Haloda J., Tycova P., Korotev R.L., **Fernandes V.A.**, Burgess R., Jakes P., Gabzdyl P. and Kosler J. (2009) Petrology, geochemistry, and age of low-Ti mare-basalt meteorite Northeast Africa 003-A: A possible member of the Apollo 15 mare basaltic suite. *Geoch. et Cosmoch. Acta*, 73, 3450-3470. doi.org/10.1016/j.gca.2009.03.003

- [17] Grande M., Maddison B.J., Howe C.J., Kellett B.J., Sreekumar P., Huovelin J., Crawford I.A., d'Uston C.L., Smith D., Anand M., Bhandari N., Cook A., **Fernandes V.**, Foing B., Gasnault O., Goswami J.N., Holland A., Joy K.H., Kochney D., Lawrence D., Maurice S., Okada T., Narendranath S., Pieters C., Rothery D., Russell S.S., Shrivastava A., Swinyard B., Wilding M., Wieczorek M. (2009) The C1XS X-ray Spectrometer on Chandrayaan-1. *Planetary and Space Science*, 57, 717-724. doi:10.1016/j.pss.2009.01.016
- [16] Crawford I. A., Joy K. H., Kellett B. J., Grande M., Anand M., Bhandari N., Cook A. C., d'Uston L., **Fernandes V. A.**, Gasnault O., Goswami J., Howe C. J., Huovelin J., Koschny D., Lawrence D. J., Maddison B. J., Maurice S., Narendranath S., Pieters C., Okada T., Rothery D. A., Russell S. S., Sreekumar P., Swinyard B., Wieczorek M., Wilding M.. (2009): The Scientific Rationale for the C1XS X-Ray Spectrometer on India's Chandrayaan-1 Mission to the Moon. *Planetary and Space Science*, 57, 725-734 . doi:10.1016/j.pss.2008.12.006.
- [15] Swinyard B. M., Joy K. H., Kellett B. J., Crawford I. A., Grande M., Howe C. J., **Fernandes V. A.**, Gasnault O., Lawrence D. J., , Russell S. S., Wieczorek M. A., and Foing, B.H. and the SMART-1 team (2009) X-ray Fluorescence Observations of the Moon by SMART-1/D-CIXS and the First Detection of Ti K $\alpha$  From the Lunar Surface. *Planetary and Space Science*, 57, 744-750. doi:10.1016/j.pss.2009.01.009.
- [14] Grande M., Maddison B. J., Sreekumar P., Huovelin J., Kellett B.J., Howe C. J., Crawford I.A., Smith D. R. and **the C1XS Team**\_(2009) The C1XS X-ray spectrometer on Chandrayaan-1. *The Chandrayaan-1 X-ray Spectrometer. Current Issue (Indian Academy of Sciences)*, 96, 517-519.
- [13] Shearer C.K., Burger P.V., Neal C.R., Sharp Z., Borg L.E., 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. *Amer. Mineral.*, 93, 1937–1940. <https://doi.org/10.2138/am.2008.3056>
- [12] Sokol A.K., **Fernandes V. A.**, Schulz T., Bischoff A., Burgess R., Clayton R.N., Münker C., Nishiizumi K., Palme H., Schultz L., Weckwerth G., Mezger K. (2008) Geochemistry, petrology and ages of the lunar meteorites Kalahari 008 and 009: new constraints on early lunar evolution. *Geoch. et Cosmoch. Acta*, 72, 4845-4873. doi.org/10.1016/j.gca.2008.07.012
- [10] Grande M., Kellett B., Howe C., Perry C. H., Swinyard B., Dunkin S., Huovenin J., d'Uston L. C., Maurice S., Gasnault O., Couturier-Doux S., Barabash S., Joy K., Crawford I., Lawrence D., **Fernandes V.**, Casanova I., Wieczorek M., Thomas N., Mall U., Foing B., Hughes D., Alleyne H., Russell S., Grady M., Lundin R., Baker D., Murray C. D., Guest J. (2007) The D-CIXS X-ray spectrometer on the SMART-1 mission to the Moon; First Results. *Planetary and Space Science*, 55, 494-502. <http://dx.doi.org/10.1016/j.pss.2011.08.014>
- [9] **Fernandes V.A.** and Burgess R. (2005): Volcanism in Mare Fecunditatis and Mare Crisium: Ar-Ar studies. *Geoch. et Cosmoch. Acta*, 69, 4919-4934. <https://doi.org/10.1016/j.gca.2005.05.017>

- [8] Grande M., Browning R., Waltham N., Parker D., Dunkin S.K., Kent B., Kellett B., Perry C.H., Swinyard B., Perry A., Feraday J., Howe C., McBride G., Phillips K., Huovelin J., Muhli P., Hakala P.J., Vilhu O., Laukkanen J., Thomas N., Hughes D., Alleyne H., Grady M., Lundin R., Barabash S., Baker D., Clark P.E., Murray C.D., Guest J., Casanova I., d'Uston L.C., Maurice S., Foing B., Heather D.J., **Fernandes V.**, Muinonen K., Russell S.S., Christou A., Owen C., Charles P., Koskinen H., Kato M., Sipila K., Nenonen S., Holmstrom M., Bhandari N., Elphic R., Lawrence D. (2003): The D-CIXS X-ray mapping spectrometer on SMART-1. *Planetary and Space Science*, 51, 427-433. [https://doi.org/10.1016/S0032-0633\(03\)00020-5](https://doi.org/10.1016/S0032-0633(03)00020-5)
- [7] Dunkin S.K., Grande M., Casanova I., **Fernandes V.**, Heather D.J., Kellett B., Muinonen K., Russell S.S., Browning R., Waltham N., Parker D., Kent B., Perry C.H., Swinyard B., Perry A., Feraday J., Howe C., Phillips K., McBride G., Huovelin J., Muhli P., Hakala P.J., Vilhu O., Thomas N., Hughes D., Alleyne H., Grady M., Lundin R., Barabash S., Baker D., Clark P.E., Murray C.D., Guest J., d'Uston L.C., Maurice S., Foing B., Christou A., Owen C., Charles P., Laukkanen J., Koskinen H., Kato M., Sipila K., Nenonen S., Holmstrom M., Bhandari N. Elphic., R., Lawrence D. (2003): Scientific rationale for the D-CIXS X-ray spectrometer on board ESA's SMART-1 mission to the Moon. *Planetary and Space Science*, 51, 435-442. [https://doi.org/10.1016/S0032-0633\(03\)00019-9](https://doi.org/10.1016/S0032-0633(03)00019-9)
- [6] **Fernandes V.A.**, Burgess R. and Turner G. (2003): Ar-Ar chronology of lunar meteorites Northwest Africa 032 and 773. *Met. and Planet. Sci.*, 38, 555-564. <https://doi.org/10.1111/j.1945-5100.2003.tb00026.x>
- [5] **Fernandes V.A.** (2002) Northwest Africa 032: A young lunar basalt. *Meteorite*, 8, 36-38.
- [4] Fagan T.J., Taylor G.J., Keil K., Bunch T.E., Wittke J.H., Korotev R.L., Jolliff B.L., Gillis J.J., Haskin L.A., Jarosewich E., Clayton R.N., Mayeda T.K., **Fernandes V.A.**, Burgess R., Turner G., Eugster O. and Lorenzetti S. (2002) Northwest Africa 032: Product of Lunar Volcanism. *Met. And Planet. Sci.*, 37, 371-394. <https://doi.org/10.1111/j.1945-5100.2002.tb00822.x>
- [3] **Fernandes V.A.**, Burgess R. and Turner G. (2000) Laser  $^{40}\text{Ar}/^{39}\text{Ar}$  age studies of Dar al Gani 262 Lunar meteorite. *Met. And Planet. Sci.*, 35, 1355-1364. <https://doi.org/10.1111/j.1945-5100.2000.tb01521.x>
- [2] Elkins L.T., **Fernandes V.A.**, Delano J.W. and Grove T.L. (2000) Origin of lunar ultramafic green glasses: Constraints from phase equilibrium studies. *Geoch. Et Cosmoch. Acta*, 64, 2339-2350. [doi.org/10.1016/S0016-7037\(00\)00365-3](https://doi.org/10.1016/S0016-7037(00)00365-3)
- [1] Fernandes V.A. (1998) Major- and minor-element analysis of Apollo 14 volcanic green glasses B, and petrogenic modeling of Apollo 14 green glasses A and B. Master in Sciences Thesis, University at Albany, NY, USA. <http://www.atmos.albany.edu/geology/theses/fernandesmstxt.pdf>

### Submitted

**Assis Fernandes V.**, Artemieva N., Fritz J., Jutzi M. and Werner S.C. (*submitted Astrobiology*) The first 600 million years of Earth-Moon history: How spiky was the impact bombardment?

### In preparation

Werner S.C., Bultel B., **Assis Fernandes V.** and Rolf T. (*in preparation EPSL*) Lunar Time Scale – A Critical Review and the Revision of Lunar Cratering Chronology

- Assis Fernandes V.**, Czaja P., Fawcett L., Khan A., Mata J., Nemchin A., Sliwinski J., Snape J. and Whitehouse M. (*in preparation*) Chronology and Heterogeneity of the Lunar Mantle under Mare Serenitatis.
- Assis Fernandes V.**, Czaja P., Fawcett L., Fonseca R.O.C., Khan A., Liebske C., Mata J., Nemchin A., Sliwinski J., Snape J. and Whitehouse M. (*in preparation*) Chronology and Heterogeneity of the Lunar Mantle under Mare Imbrium.
- Greshake A., **Fernandes V.A.** and Fritz J. and Korotev R. (*in preparation*) A petrologic, impact shock and  $^{40}\text{Ar}$ - $^{39}\text{Ar}$  systematics study of lunar basaltic meteorites Northwest Africa 3160, 4898 and 8632 and Dhofar 287.
- Fernandes V. A.**, Hopp J., Schwarz W., and Trieloff M. (*in preparation*) A comprehensive  $^{40}\text{Ar}$ - $^{39}\text{Ar}$  step heating study of seven Popigai impact structure impact melts.
- Fernandes V.A.**, Burgess R. and Turner, G. (*in preparation*)  $^{40}\text{Ar}$ - $^{39}\text{Ar}$  studies of two martian meteorites: Shergotty and Dar al Gani 476.
- Fernandes V. A.**, Anand M., Burgess R. and Taylor L. A. (*in preparation*) Ar-Ar studies of clast-rich feldspathic meteorites: Dhofar 025, 026, 280, 303.

### CONFERENCE ABSTRACTS

- Fritz J. and Assis Fernandes V. (2022) Heavy Bombardment Eon. Forming Habitable Worlds Meeting, Edinburgh, UK, abst.#
- Assis Fernandes V. (2022) The fragility of the Moon and other planetary bodies: The need to consider Human and robotic impact on these unknown environments. Forming Habitable Worlds Meeting, Edinburgh, UK, abst.#
- Assis Fernandes V., Pfänder J.A., Bizzarro M., Hoefnagels B., Khan A. and Zhang A.-C. (2022)  $^{40}\text{Ar}/^{39}\text{Ar}$  ages for lunar basaltic meteorites Northwest Africa 8632 AND 12008. Forming Habitable Worlds Meeting, Edinburgh, UK, abst. Page 128.
- Lawton T.P., Gilmour J.D., Crowther S.A. and Assis Fernandes V. (2022) Xenon Isotopes in Individual Lunar Volcanic glasses of Apollo 15 and 17. European Lunar Symposium, abst.#
- Assis Fernandes V., Burgess R. and Pfänder J.A. (2021) The complexities in interpreting extra-terrestrial Ar-isotopes: Chock-full of components. Virtual DINGUE2021, p. 23. <https://dingue2021.wordpress.com/program/>
- Fritz J., Greshake A., Klementova M., Wirth R., Palatinus L., Trønes R.G., Assis Fernandes V., Böttger U. and Ferrière L. (2020) Raman spectroscopic studies of donwilhelmsite in shock melt pockets within the lunar meteorite Oued Awlitis 001. GeoRaman 2020 – Bilbao, abst#.
- Vorburger A., Wurz P., Scherf M., Lammer H., Galli A. and Assis Fernandes V. (2020) Chemical composition of the Moon's 'primary' crust – a clue at a terrestrial origin. European Geophysical Union annual meeting, Vienna, Austria. Abst.# EGU2020-4495.
- Bultel B., Werner S.C., Assis Fernandes V. and Rolf T. (2020) Spectral analysis and mapping of all Apollo/Luna landing sites to assist re-evaluation of lunar cratering chronology models. 34<sup>th</sup> Nordic Geological Winter 2020, abst#
- Werner S.C., Bultel B., Assis Fernandes V. and Rolf T. (2020) Lunar Cratering Chronology – review and revision. 34<sup>th</sup> Nordic Geological Winter 2020, abst#
- Assis Fernandes V., Czaja P., Fawcett L., Fonseca R.O.C., Khan A., Liebske C., Mata J., Nemchin A., Sliwinski J., Snape J., Whitehouse M. & Willbold M. (2020) A systematic study of basaltic regolith fragments from Imbrium and Serenitatis Basins offers potential insights into new basalt types. 34<sup>th</sup> Nordic Geological Winter 2020, abst#

- Klementova M., Palatinus L., Fritz J., Greshake A., Wirth R., Assis Fernandes V. and Ferrière L. (2019) Structure Determination of Donwilhelmsite by Electron Diffraction Tomography. *Microscopy and Microanalysis* 25 (Suppl 2), 2450-2451.
- Assis Fernandes V. and Meyer C. (2019) Ethical and Social Aspects of a Return to the Moon—A Geological Perspective. The Moon as a ‘contact zone’ to other worlds: an interdisciplinary workshop, Manchester, U.K.
- Zhang A.-C., Assis Fernandes V. and Hoefnagels B. (2019) Shock metamorphism of the new basaltic lunar meteorite Northwest Africa 12008. Meteoritical Society Meeting, abstr.# 6617.
- Assis Fernandes V., Czaja P., Fawcett L., Fonseca R.O.C., Khan A., Liebske C., Nemchin A., Sliwinski J., Snape J., Whitehouse M. and Willbold M. (2019) Investigating volcanism within Imbrium and Serenitatis Basin: a systematic study of basaltic regolith fragments. Meteoritical Society Meeting in Sapporo, abstr.#6067.
- Assis Fernandes V. (2019) Earth-Moon impact bombardment history: how does it fit with that of the inner Solar System? LIFE3E’2019: Search for Life, from Early Earth to Exoplanets, March 25-29, 2019, Quy Nhon, Viet Nam.
- Werner S. C., Bultel B., Assis Fernandes V. and Rolf T. (2018) Lunar Cratering Chronology – Review and Revision. 2018 AGU Fall Meeting, abstr. ID# 373256.
- Assis Fernandes V., Czaja P. And Fawcett L. (2018) Preliminary petrographic characterization,  $^{40}\text{Ar}/^{39}\text{Ar}$  and CRE ages of Apollo 15 regolith basaltic fragments. European Planetary Science Congress, Berlin, abstr.#EPSC2018-243.
- van der Bogert C. H., Hiesinger H., Spudis P., Fernandes V. A., Runyon K. D. and Denevi B. W. (2018) Constraining the age of the Crisium impact basin. European Lunar Symposium, abstr.#
- Bultel B., Werner S.C., Fernandes V.A. and Rolf T. (2018) Spectral mapping and crater statistics reevaluated for all Apollo landing sites. European Lunar Symposium, abstr.#
- Werner S.C., Bultel B., Fernandes V.A. and Rolf T. (2018) Lunar Cratering Chronology – Revisited. European Lunar Symposium, abstr.#
- Bultel B., Werner S. C., Fernandes V. A. and Rolf T. (2018) Spectral mapping and crater statistics reevaluated for all Apollo landing sites. European Geophysical Union annual meeting, Vienna, Austria. Abstr.# EGU2018-17492.
- Assis Fernandes V., Crowther S., Gilmour J., Greshake A., Khan A., Lawton T., Liebske C., Sliwinski J. and Zhu M.-H. (2017) Combined use of analytical techniques to unravel lunar bombardment and volcanism. 3rd Beijing International Forum on Lunar and Deep Space Exploration, 19-22 Sep. 2017.
- Assis Fernandes V., Czaja P., Fawcett L., Khan A., Liebske C., Neal C. and Sliwinski J. (2017)  $^{40}\text{Ar}$ - $^{39}\text{Ar}$ , chemistry and mantle source modelling of Apollo 17 basalts. Goldschmidt Conference-Paris, abstr.#.
- Schiller M., Bizzarro M. and Fernandes V.A. (2017) Rapid Isotopic Evolution of the Protoplanetary Disk and the Building Blocks of the Earth-Moon System. Goldschmidt Conference-Paris, abstr.#.
- Assis Fernandes V., Burgess R., Cooper L., P Czaja P., Khan A., Liebske C., Neal C., Sliwinski J., and Zhu M.-H. (2017) Type, chemistry, Ar-isotopes and magma generation of NEW Apollo 17 Basaltic regolith fragments. New Views of the Moon-2 Europe, Münster, Germany. Abstr.#.



- Assis Fernandes V., Burgess R., Liebske C., Neal C., Sliwinski J. and Zhu M.-H. (2017) Type, chemistry,  $^{40}\text{Ar}$ - $^{39}\text{Ar}$  and cosmic ray exposure age of new Apollo 17 basaltic regolith fragments. 48<sup>th</sup> Lunar and Planetary Science Conference, abst.# 1282.
- Ferrière L., Meier M. 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 crowd-funded Oued Awlitis 001 lunar meteorite – A consortium. 48<sup>th</sup> Lunar and Planetary Science Conference, abst.# 1621.
- Assis Fernandes V. (2016) New Apollo 17 2-4 mm basaltic regolith fragments: petrography and chemical diversity. UK Extraterrestrial Materials Research Meeting, University of Manchester, 1<sup>st</sup> Nov., 2016.
- Fritz J., Greshake A. and Fernandes V. A. (2016) Revisiting the Shock Pressure Barometry of Shocked Meteorites. Workshop “Shock Metamorphism”, Berlin, Germany, abst.# 6328.
- Assis Fernandes V. and Cooper L. (2016) Petrologic and Chemical Diversity of New Apollo 17 2-4 mm Basaltic Regolith Fragments. Goldschmidt Conference in Yokohama, Japan, abst.#1760.
- Lourenço D.L, Tackley P.J, Liebske C., Golabek G.J. and Fernandes V.A. (2016) Early Evolution and Dynamics of the Moon from a Molten Initial Stage. Goldschmidt Conference in Yokohama, Japan, abst.#4426.
- Grange M. L., Norman M. and Fernandes V. A. (2016) Clues to the origin of gabbroic lunar meteorite NWA 5000. LPSC XLVII, abst.# (CD-ROM).
- Fernandes V. A., Storey M. and Zhu M.-H. (2016) Report on initial characterization of new Apollo 17 basaltic regolith fragments. LPSC XLVII, abst.# 1020 (CD-ROM).
- Fritz J., Greshake A. and Fernandes V. A. (2015) Proposal of a revised shock pressure classification scheme. “Bridging the gap” Conference, Freiburg, Germany, Sept. 2015.
- Schiller M., Fernandes V.A. and Bizzarro M. (2015) Planetary scale Ca-isotope heterogeneity and the formation history of the Earth-Moon system. Goldschmidt Conference Abstracts 2015, 2324.
- Fritz J. and Fernandes V. A. (2015) On Experimentally and Naturally Produced Shock Effects in Rock Forming Minerals. Workshop “The First 1 Ga of Impact Records: Evidence from Lunar Samples and Meteorites”, Berkeley CA, USA, abst.#6017.
- Fernandes V. A., Fritz J. and Werner S. C. (2015) The Heavy Bombardment Eon of the Earth-Moon System. Workshop “The First 1 Ga of Impact Records: Evidence from Lunar Samples and Meteorites”, Berkeley CA, USA, abst.#6015.
- Zhu M. -H., Chang J., Xie M. G., Fritz J., Fernandes V., Ip W.-H., Ma T. and Xu A. A. (2015) The Uniform K Distribution of the Mare Deposits in the Orientale Basin: Insights from Chang’E-2 Gamma ray Spectrometer. LPSC XLVI, abst.# 1207 (CD-ROM).
- Fernandes V.A., Burgess R. and Irving A. J. (2014)  $^{40}\text{Ar}$ - $^{39}\text{Ar}$  systematics of anomalous potassic LL metachondrite Northwest Africa 7030. 77<sup>th</sup> Met. Soc. Conf., Casablanca, Morocco. Abst#5073.
- Fernandes V.A., Werner S. C. and Fritz J.P. (2014) Updating the lunar Cratering Chronology Model: correction of the anchor ages. 77<sup>th</sup> Met. Soc. Conf., Casablanca, Morocco. Abst#5011.
- Trüninger M., Walsh J. and Fernandes V.A. (2014) Reconfiguring Outer Space Policy: Vulnerabilities and Responsibilities in Humanizing the Universe. XVIII ISA World Conf. of Sociology, Yokohama, Japan. Abst.#140.09.

- Fritz J., Greshake A., Fernandes V. A. and Holzwarth A. (2014) From plagioclase to maskelynite via shock. 77<sup>th</sup> Met. Soc. Conf., Casablanca, Morocco. Abst# 5337.
- Fritz J., Greshake A. and Fernandes V.A. (2014) Shock experimental investigations on the formation of diaplectic glasses. Polish Meteoritical Society Meeting, VIII Meteoritical Conference in Warsaw, Poland.
- Fritz J., Greshake A., Fernandes V. A., Wünnemann K. and Reimold W.U. (2014) Shock experimental investigation of the formation mechanism for maskelynite. 21<sup>st</sup> General meeting of the international Mineralogical Association, Santon, South Africa.
- Fernandes V.A., Werner S.C and Fritz P. (2014) The first 1 billion years of Earth-Moon history: how spiky was the impact bombardment. Biosignatures Conference, The Nordic Network of Astrobiology annual conference, Bergen, Norway-
- Fernandes V. A.S.M., Hopp J., Schwarz W., Trieloff M., Reimold W. U. and Fritz, J. (2014) Progress report on the re-evaluation of the Chesapeake Bay and Popigai crater impact ages: New <sup>40</sup>Ar/<sup>39</sup>Ar step heating results from Popigai impactites. LPSC XLV, abst.# 1274 (CD-ROM).
- Kallio, E., Alho, M., Alvarez, F., Barabash, S., Dyadechkin, S., Fernandes, V. A., Futaana, Y., Harri, A-M, Haunia, T., Heilimo, J., Holmström, M., Jarvinen, R., Lue, C., Makela, J., Porjo, N., Schmidt, W., Shahab, F., Siili, T. and Wurz, P. (2014) Lunar Dust-Plasma Environment in Kinetic Models. Science and Challenges of Lunar Sample Return Workshop, abst#
- Assis Fernandes V., Alibert Y, Artemieva N., Fritz J., Jutzi M. and Werner S. C. (2014) ISSI Team: Updating the lunar chronology and stratigraphy. Science and Challenges of Lunar Sample Return Workshop, ESA-Noordwijk, abst#
- McLeod C. L., Brandon A. D., Fernandes V. A., Peslier A. H., Lapen T. J. and Irving A. J. (2013) Constraints on the composition and evolution of the lunar crust from meteorite NWA 3163. *Eos Trans. AGU Fall Meet. Suppl.*, Abst.#.
- Jepson L., Burgess R., Fernandes V., Murphy D. and Ballentine C. (2013) Halogens in Basalts of the Azores, Canaries and Tristan da Cunha. *Goldschmidt Conf.*, Florence. Mineralogical Magazine, 77(5) 1385
- Fernandes V. A. and Fritz J. (2013) <sup>40</sup>Ar-<sup>39</sup>Ar chronology of thermally reset extra-terrestrial rocks and the spiky bombardment timeline of the inner Solar System. 2013 William Smith meeting of the Geological Society of London: The first century of Isotope Geochronology: the legacy of Frederick Soddy and Arthur Holmes.
- Palasse L., Berlin J., Goran D., Tagle R., Hamers M., Fernandes V. A., Deutsch A., Schulte P. and Salge T. (2013) Insights to Meteorites and Impact Processes provided by Advanced EBSD Analysis. EGU General Assembly, abst.# EGU2013-10538-2.
- Fernandes V. A., Burgess R., Crowther S. A., Fritz J. P., Gilmour J. D., Irving A., Meier M. M., Nottingham M. and R. Wieler (2013) Ar-Ar and Noble gas systematics of the ungrouped achondrite Northwest Africa 6704. LPSC XLIV, abst.# 1956 (CD-ROM).
- Schwarz W.H., Trieloff M., Bollinger K., Gantert N., Fernandes V. A., Meyer H.-P., Povenmire H., Jessberger E.K. and Koeberl C. (2013) Coeval ages of Australasian, Western Canadian and Belize tektites. LPSC XLIV, abst.# 1888 (CD-ROM).
- Fonseca J. M., Grieger B., Morat A., Almeida M., Costa M., Antunes L., Fernandes V. A. (2012) Calibration and Mosaicing of SMART-1 Images. EPSC-
- Fernandes V. A. S. M. and Fritz J. P. (2012) The early Moon: impact record and other parameters. European Lunar Symposium, 4-5.

- Fernandes V. A., Hopp J., Schwarz W., Trieloff M. and Reimold W. U. (2012) Detailed  $^{40}\text{Ar}/^{39}\text{Ar}$  step heating study of Chesapeake Bay crater impactites: tektites and impact melt from USGS-ICDP drill core Eyreville-B. IODP/ICDP-Kolloquium 2012 in Kiel, Germany.
- Fernandes V. A., Hopp J., Schwarz W., Trieloff M. and Reimold W. U. (2012) Re-evaluation of the Chesapeake Bay crater impact age: New  $^{40}\text{Ar}$ - $^{39}\text{Ar}$  step-heating results for North American Tektites. LPSC XLIII, abst.# 1775 (CD-ROM).
- Fernandes V. A. and Artemieva N. (2012) Impact ejecta temperature profile on the Moon – what are the effects on the Ar-Ar dating method? LPSC XLIII, abst.# 1367 (CD-ROM).
- Walsh J., Trüninger M. and Fernandes V. A. (2012) Expanding the Definition of “Planetary Protection”: Ethical Space Exploration from an Environmental and Socio-Cultural Perspective. LPSC XLIII, abst.# 1910 (CD-ROM).
- Fritz J. P. and Fernandes V. A. S. M. (2012) The Heavy Bombardment of the Moon. Workshop on the Early Solar System Bombardment II, abst. 4044.
- Kallio E., Alvarez F., Barabash S., Dyadechkin S., Fernandes V. A., Futaana Y., Heilimo J., Jarvinen R., Lue C., Mäkelä J., Porjo N., Schmidt W., Siili T. and Wurz, Peter (2012) On the Modeling of the Lunar Dust-Plasma Environment. Scientific. *In* Preparations for Lunar Exploration Conf., ESTEC, Noordwijk, the Netherlands.
- Schmidt W., Alvarez F., Barabash S., Dyadechkin S., Fernandes V. A., Futaana Y., Heilimo J., Jarvinen R., Kallio E., Lue C., Mäkelä J., Porjo N., Siili T. and Wurz, Peter (2012) Instrument Proposal for the Lunar Dust-Plasma Environment. *In* Preparations for Lunar Exploration Conf., ESTEC, Noordwijk, the Netherlands.
- Fernandes V. A., Reimold W. U., Trieloff M. and Fritz J. (2011) The petrology, geochemistry, and age determination of impact melt from the USGS-ICDP drill core Eyreville-B into the late Eocene Chesapeake Bay impact structure. 2<sup>nd</sup> Arab Impact Cratering and Astrogeology Conference (AICAC II), Casablanca, Morocco,
- Marinangeli L., Hutchinson I.B., Stevoli A., Adami G., Ambrosi R., Amils R., Assis Fernandes V., Baliva A., Basilevsky A.T., Benedix G., Bland P., Böttger A.J., Bridges J., Caprarelli G., Cressey G., Critani F., d'Alessandro N., Delhez R., Domeneghetti C., Fernandez-Remolar D., filippone R., Fioretti A.M., Garcia Ruiz J.M., Gilmore M., Hansford G.M., Iezzi G., Ingley R., Ivanov M., Marseguerra G., Moroz L., Pellicciari C., Petrinca P., Piluso E., Pompilio L., Sykes J., Westall F. and the MARS-XRD Team (2011) The mineralogy and chemistry analyser (MARS-XRD) for the ExoMars 2018 mission. EPSC-DPS2011-1232
- Artemieva N. and Fernandes V. A. (2011) Impact ejecta temperature profile on the Moon - what are the effects on the Ar-Ar dating method? 74<sup>th</sup> Met. Soc. Conf, abst#5137.
- Fernandes V. A. S. M., Trieloff M., Artemieva N. A., Fritz J. P. and Reimold W. U. (2011) Need to re-evaluate the age of Chesapeake Bay and Popigai Craters and their relevance for the Eocene/Oligocene boundary, European Geosciences Union General Assembly 2011, EGU2011-4573.
- Riedo A., Fernandes V. A. S. M., Yakovleva M., Tulej M. and P. Wurz (2011) A miniaturized laser ablation mass spectrometer for space research. LPSC XLII, abst.# 1880 (CD-ROM).
- Fritz J., Wünnemann K., Greshake A., Fernandes V.A.S.M., Boettger U. and Hornemann U. (2011) Shock pressure calibration for lunar plagioclase. LPSC XLII, abst.# 1196 (CD-ROM).

- Fernandes V. A. S. M. and Fritz J. P. (2011),  $^{40}\text{Ar}/^{39}\text{Ar}$  ages vs. shock features in Apollo 16 and 17 samples. LPSC XLII, abst.# 1189 (CD-ROM).
- Fernandes V. A. S. M. and Fritz J. P. (2010) Need to re-evaluate the age of the Popigai Crater and the relevance for the Eocene/Oligocene boundary. The first Moscow Solar System Symposium (1M-S<sup>3</sup>), Splinter-meeting Popigai.
- Leya I., Fernandes V. A. and Wurz P. (2010) A critical comparison: in-situ and laboratory instruments. The first Moscow Solar System Symposium (1M-S<sup>3</sup>), abstr.# 1MS3-PS-46.
- Fernandes V. A. S. M., Fritz J. P., Wünnemann K., Hornemann U. (2010) K-Ar ages and shock effects in lunar meteorites. European Planetary Science Congress 2010, EPSC2010-237.
- Fernandes V. A. S. M., Fritz J. P., Wünnemann K., Hornemann U. (2010) Lunar meteorites: shock effects vs.  $^{40}\text{Ar}$ - $^{39}\text{Ar}$  ages. Nördlingen 2010: The Ries Crater, the Moon, and the Future of Human Space Exploration, abst.#7033.
- Fernandes V. A. S. M., Abreu N. M., Fritz J., Knapmeyer M., Smeenk L., ten Kate I. L. and Trüninger M. (2010) Proposal for revisions of the United Nations Moon Treaty. COSPAR 2010, Abst.#5593.
- Fernandes V.A.S.M. and Shearer C.K. (2010)  $^{40}\text{Ar}$ - $^{39}\text{Ar}$  ages of metamorphism preserved in the Achondrite GRA 06129. LPSC XLI, abst.# 1008 (CD-ROM).
- Fernandes V. A. (2009)  $^{40}\text{Ar}$ - $^{39}\text{Ar}$  age for gabbroic lunar meteorite Northwest Africa 5000 (abstract), Goldschmidt Conference Abstracts 2009, A365.
- Joy K. H., Burgess R., Hinton R., Fernandes V. A., Crawford I. A., Kearsley A., Irving A., and EIMF (2009) Petrography and chronology of lunar meteorite NWA 4472 (abstract), Goldschmidt Conference Abstracts 2009, A607.
- Shuster D. L., Weiss B. P. and Fernandes V. A. (2009) Identifying a lunar impact at ~3.3 Ga using  $^{40}\text{Ar}$ - $^{39}\text{Ar}$  thermochronometry (abstract), Goldschmidt Conference Abstracts 2009, A1218.
- Fernandes V. A., Korotev R.L. and Renne P.R (2009)  $^{40}\text{Ar}$ - $^{39}\text{Ar}$  ages and chemical composition for lunar mare basalts: NWA 4734 and NWA 4898. LPSC XL, abst.# 1045 (CD-ROM).
- Fernandes V. A., Irving A. J., Kuehner S. M., Gellissen M., Korotev R. L. and Bandfield J. L. (2009) Petrology, bulk composition, Ar-Ar age and IR emission spectrum of lunar meteorite Northwest Africa 4881. LPSC XL, abst.# 2009 (CD-ROM).
- Joy K. H., Burgess R., Hinton R., Fernandes V. A., Crawford I. A., Kearsley A. T., Irving A. J. and EIMF (2009) U-Pb and Ar-Ar chronology of lunar meteorite Northwest Africa 4472. LPSC XL, abst.# 1708 (CD-ROM).
- Shuster D. L., Garrick-Bethell, I., Fernandes V. A. and Weiss B. P. (2008) An Impact Event on the Lunar Surface at ~3 Ga Inferred from  $^{40}\text{Ar}/^{39}\text{Ar}$  Thermochronometry of Multiple Samples in Apollo 16 Soil 63503. *Eos Trans. AGU*, 88(52), Fall Meet. Suppl., Abst.# 1002.
- Humayun M., Turner S., Beier C., Widom E. and Fernandes V. A. (2008) Fe-Mn Geochemistry of OIB from the Azores. *Eos Trans. AGU*, 88(52), Fall Meet. Suppl., Abst.# .
- Fernandes V.A., Garrick-Bethell I., Shuster D.L. and Weiss B. (2008) Apollo 16 and 17 2-4 mm samples: common 4.2 Ga impact age in samples from the two sites. Early Solar System Impact Bombardment Workshop, abst.#3028.
- Garrick-Bethell I., Fernandes V.A., Shuster D.L., Weiss B. And Becker T. (2008) 4.2 Billion year old ages from Apollo 16, 17 and the lunar farside: Age of the South Pole Aitken? Early Solar System Impact Bombardment Workshop, abst.#.

- Garrick-Bethell I., Weiss B. P., Becker, T. A., Fernandes V. A., and Shuster D. L. (2008) Evidence for Magnetic Fields on the Early Moon. 2008 Joint Meeting of The Geological Society of America, abst.# 151309.
- Wittmann A., Kring D. A., Reimold U., Hecht L., Schmitt R. -T., Fernandes V. A. (2008) Petrology of impact melt rocks from the Chesapeake Bay crater, USA. GSA abstract id # 149564.
- Garrick-Bethell I., Weiss B., Fernandes V., Shuster D. and Becker T. (2008) New argon ages from the Cayley Plains: and absolute age for the South Pole Aitken Basin. NLSI Lunar Science Conference, abst.#2131.
- Wittmann A., Fernandes V. A., Renne P. R., Schmitt R. T., Reimold W. U., Hecht L., Povenmire H. (2008) Preliminary age of impact melts from the Chesapeake Bay impact structure. Large Meteorite Impacts and Planetary Evolution IV, Vredefort Dome, South Africa, abst.#3093.
- Fernandes V., Becker T., Renne P. and Burgess R. (2008) Preliminary Ar-Ar Studies of Lunar Basaltic Meteorite Dhofar 287-A. Goldschmidt Conf. 2008, Vancouver, Canada, abst.# A264.
- Garrick-Bethell I., Weiss B., Shuster D., Fernandes V. and Becker T. (2008) Early Lunar Magnetic Fields Recorded Before the Late Heavy Bombardment. Goldschmidt Conf. 2008, Vancouver, Canada, abst.#. A297.
- Morris A., Fernandes V. and Burgess R. (2008) Ar-Ar Ages for Lunar Basalt Meteorites: A 881757, Y 793169, MIL 05035, LAP 02205, NWA479 and EET 96008. Goldschmidt Conf. 2008, Vancouver, Canada, abst.#.
- Fernandes V. A., Wittmann A., Reimold U., Hecht L., Schmitt R.-T., Povenmire H. (2008) Petrology of impact melts from the USGS-ICDPcore Eyreville-B, Chesapeake Bay, USA. LPSC XXXIX, abst.# 2383 (CD-ROM).
- Joy K.H., Crawford I.A., Kearsley A.T., Fernandes V.A., Burgess R. and Irving A. J. (2008) The petrography and composition of lunar meteorite Northwest Africa 4472. LPSC XXXIX, abst.# 1132 (CD-ROM).
- Joy K.H., Crawford I.A., Kellett B., Grande M.N. and the C1XS Science Team (2008) The scientific case for the Chandrayaan-1 X-Ray spectrometer. LPSC XXXIX, abst.# 1070 (CD-ROM).
- Shearer C.K., Papike J.J., Burger P.V., Karner J., Borg L., Gaffney A., Neal C., Shafer J, Fernandes V.A., Sharp Z., Weiss B., and Geissman J. (2008) A meteorite from a new asteroidal geochemical reservoir or Venus? GRA 06129. LPSC XXXIX, abst.# 1825 (CD-ROM).
- Fernandes V.A., Sokol A.K., Burgess R., Bischoff A., Schultz T. and Münker C. (2007) Kalahari 009: One of the Oldest Lunar Mare Basalts - Chronology, Chemical and Petrological Composition, and Source Region. *Eos Trans. AGU*, 88(52), Fall Meet. Suppl., Abst.# 7082.
- Haloda J., Fernandes V.A., Burgess R. and Thöni M. (2007) Lunar Mare Basalt Meteorite NEA003-A: Chronology, Chemical and Petrological Composition. *Eos Trans. AGU*, 88(52), Fall Meet. Suppl., Abst.# 7133.
- Fernandes V.A., Cohen B.A., Fritz J. and Jessberger E.K. (2007) Return to the Moon: Ethical, cultural and social aspects – initial approaches to these complex themes with a geological perspective. LEAG Workshop, abst.#3035.

- Joy K. H., Crawford I. A., Kellett B., Grande M. and the C1XS Science Team (2007) The Scientific Case for the Chandrayaan-1 X-Ray Spectrometer. ILEWG\_C1XS\_ScienceCase, abst.#
- Joy K. H., Fernandes V.A., Burgess R., Crawford I.A., Irving A.J., Kearsley A.T. (2007) The clast inventory of KREEPy lunar meteorite Northwest Africa 4472. 70<sup>th</sup> Met. Soc. Conf, abst#5223.
- Docobo J. A., Trigo-Rodríguez J.M., Borovicka J., Tamazian V. S., Fernandes V.A., Llorca J. (2007) March 1, 2005 Daylight Fireball over Galicia (NW of Spain) and Minho (N. Portugal). Meteoroids Intern. Conf., Barcelona, Abst.#P27.
- Fernandes V.A., Burgess R., Bischoff A., Sokol A.K. and Haloda J. (2007) Kalahari 009 and North East Africa 003: Young (<2.5 Ga) lunar mare basalts. LPSC XXXVIII, abst.# 1611 (CD-ROM).
- Burgess R., Fernandes V. A., Irving A.J. and Bunch T.E. (2007) Ar-Ar ages of NWA 2977 and NWA 3160 – Lunar meteorites paired with NWA 773. LPSC XXXVIII, abst.# 1603 (CD-ROM).
- Haloda J., Gabzdy P., Tycova P. and Fernandes V.A. (2007) Lunar meteorite Northeast Africa 003-A: Microstructures, crystallization modeling and possible lunar source areas. LPSC XXXVIII, abst.# 1768 (CD-ROM).
- Grande M., Kellett B.J., Howe C., Perry C.H., Swinyard B., Dunkin S., Huovelin J., Alha L., D’Uston L.C., Maurice S., Gasnault O., Barabash S., Joy K.H., Crawford I.A., Lawrence D., Fernandes V., Casanova I., Wieczorek M., Thomas N., Mall U., Foing B., Hughes D., Alleyne H., Russell S., Grady M., Lundin R., Baker D., Murray C. D., Guest J. and Christou A. (2007) Observations of past lunar landing sites by the D-CIXS X-ray spectrometer on SMART-1. LPSC XXXVIII, abst.# 1768 (CD-ROM).
- Fernandes V. A. and Burgess R. (2006) Importance of lunar meteorites in understanding the evolution of the Moon. EUROPLANET Congress #1, abst.# EPSC2006-A-00131
- Fernandes V. A. and Burgess R. (2006) Lunar volcanism during the Erastothonian II: NWA 479. 69<sup>th</sup> Met. Soc. Conf, abst#5312.
- Fernandes, V. A., Burgess, R., Bischoff, A. and Metzler K. (2006) Ar composition of the melt lithology within the NWA 2457 breccia. 69<sup>th</sup> Met. Soc. Conf, abst#5308.
- Fernandes V. A., Burgess R., Bischoff A. and Sokol A. K. (2006) Lunar volcanism during the Erastothonian I: Kalahari 009. 69<sup>th</sup> Met. Soc. Conf, abst#5297.
- Anand M., Burgess R., Fernandes V., and Grady M. M. (2006) Ar-Ar age and halogen characteristics of nakhlite MIL 03346: records of crustal processes on Mars. 69<sup>th</sup> Met. Soc. Conf, abst#5257.
- Grande M., Kellet B., and D-CIXS Team (2006) First Lunar results of the D-CIXS X-ray spectrometer. COSPAR-Beijing, China, abst.#2006-A-03207.
- Machado A., Azevedo J., Fernandes V. A. and Almeida P. M. D. (2006) Características Litológicas das Unidades Estratigráficas da Ilha das Flores, Açores. XLIII Congresso Brasileiro de Geologia, Aracaju, 3 -8 September, 2006.
- Kellett B.J., Grande M., and D-CIXS Team (2006) The SMART-1/D-CIXS Observations of Lunar Basins. European Geophysical Union General Assembly, Vienna, Austria, abst. # EGU06-A-10162.
- Grande M., Kellett B. J., and The D-CIXS Team (2006) First Lunar results of the D-CIXS X-ray spectrometer on SMART-1. European Geophysical Union General Assembly, Vienna, Austria, abst. # EGU06-A-06373.

- Wieczorek M. A., Fernandes V. A., Joy K. H., Crawford I. A., Grande M., Kellett B., The D-CIXS Science Investigation Team (2006) Methods for interpreting D-CIXS X-ray fluorescence data. European Geophysical Union General Assembly, Vienna, Austria, abst. # EGU06-A-04032.
- Burgess R. and Fernandes V.A. (2006) Lunar chronology from lunar meteorites. European Geophysical Union General Assembly, Vienna, Austria, abst. # EGU06-A-05133.
- Fernandes V.A. and Burgess, R. (2006)  $^{40}\text{Ar}/^{39}\text{Ar}$  age studies Basaltic Lunar meteorite La Paz 02205. European Geophysical Union General Assembly, Vienna, Austria, abst. # EGU06-A-00818.
- Fernandes V.A. and Burgess, R. (2006) Ar-Ar studies of two lunar mare rocks: LAP02205 and EET96008. LPSC XXXVII, abst.# 1145 (CD-ROM).
- Fernandes V.A. (2005): Lunar volcanism: what have we learnt....and what do we still need to learn...Exploring the Moon in the 21<sup>st</sup> Century, Royal Astronomical Society, London, Nov. 11<sup>th</sup> 2005.
- Fernandes V.A. (2005): Importance of lunar meteorites in understanding the evolution of the Moon. Lunar Science: The next decade Workshop, Bad Honnef, Germany, 6-10 June, 2005.
- Fernandes V.A., Morris A. and Burgess R. (2005): New Ar-Ar age determinations for the lunar mare basalts Asuka 881757 and Yamato 793169. LPSC XXXVI, abst.# 1002 (CD-ROM).
- Fernandes V.A., Anand M., Burgess R. and Taylor L.A. (2004): Ar-Ar studies of Dhofar clast-rich feldspathic highland meteorites: 025, 026, 280, 303. LPSC XXXV, abst.# 1514 (CD-ROM).
- Fernandes V.A. (2003): Melhoramento da Cronologia Lunar: Utilização do método de  $^{40}\text{Ar}-^{39}\text{Ar}$  em amostras basálticas obtidas pelas sondas Soviéticas Luna 16, 20 e 24 e de meteoritos lunares. Congresso Nacional de Ciências da Terra, June 24<sup>th</sup>-27<sup>th</sup>, 2003 in Lisbon, Portugal
- Fernandes V.A. (2002): Can the Period of Lunar Mare Volcanism Be Extended? Congresso Ibérico de Meteoritos e Geologia Planetária. Cuenca, Spain, 24<sup>th</sup>-26<sup>th</sup> of October, 2002.
- Fernandes V.A., Burgess, R. and Turner, G. (2002): North West Africa 773 (NWA773): Ar-Ar Studies of Breccia and Cumulate Lithologies. The Moon Beyond 2002: Next Steps in Lunar Science and Exploration Workshop. LPI, Abts.#3033.
- Alves A., Alves E. I., Azevedo J. M. M., Baptista A. R., Barata T., Branco J., Conde L. E. N., Fernandes V. A., Hormigo T., Luz D., Neves L., Pina P., Serote M.R. and Webb M. E. (2002): Project MAGIC – Portuguese Contribution for the Mars Express Mission. Abst. for 27<sup>th</sup> EGS Conference, Nice, France.
- Fernandes V.A., Burgess R. and Turne, G. (2002): Age determination of lunar regolith samples from the Luna 16 and 24 cores using IR-step heating. LPSC XXXIII, Abst.# 1756.
- Fernandes V.A., Burgess, R. and Turner, G. (2001): Age determination of Luna 24 core fragments using laser Ar-Ar step heating. New Views of the Moon IV Workshop-Europe, LPI, Abst.#
- Fernandes V.A., Burgess, R. and Turner, G. (2001): North West Africa 032 (NWA032): Evidence for lunar volcanism at 2.80 Ga. 64th Met. Soc. Conf., Abst.# 5304.
- Fernandes V.A. (2001): Return to the Moon: Ethical, Cultural and Social aspects – initial approaches to these complex themes. 1<sup>st</sup> Convention of the Lunar Explorers Society, 8<sup>th</sup> – 10<sup>th</sup> March, Paris, France.

- Fernandes V.A., Burgess R. and Turner G. (2001): Basaltic Lunar meteorite North West Africa 032 (NWA032):  $^{40}\text{Ar}/^{39}\text{Ar}$  age studies. Abst. for 26<sup>th</sup> EGS Conference, Nice, France.
- Dunkin S.K., Grande M., Casanova I., Fernandes V.A., Heather D.J., Kellett B., Muinonen K. and Russell S. S. (2000): Science objectives of the D-CIXS X-Ray spectrometer on ESA SMART-1 mission to the Moon. New Views of the Moon III Workshop, LPI
- Fernandes V.A., Burgess R. and Turner G. (2000): Age determination of lunar regolith samples from the Luna 16 core using IR-step heating. 63<sup>th</sup> Met. Soc. Conf., Abst.# 5244.
- Burgess R., Holland G., Fernandes V. and Turner G. (2000): New Ar-Ar data of Nakhla minerals. Goldschmitt Conference.
- Fernandes V.A., Burgess R. and Turner G. (2000): Petrologic and chemical studies of samples from Luna 16 and Luna 20 regolith cores. Abstract for 4<sup>th</sup> ICEUM, Noordwijk, The Netherlands.
- Dunkin S.K., Grande M., Heather D. J., Alleyne H., Casanova I., Christou A., Clark P. E., Fernandes V.A., Foing B. H., Huovenin J., Kaukkanen J., Kellett B., Muinonen K. and Russell S.S. (2000): The D-CIXS X-Ray spectrometer on ESA's SMART-1 mission to the Moon: Science objectives. Proc. Lunar and Plan. Sc. Conf., 31<sup>st</sup>, Abstract # 1648, Lunar and Planetary Institute, Houston (CD-ROM).
- Heather D. J., Dunkin S. K., Fernandes V. A., Kellet B. J. and Russell, S. (2000): The use of D-CIXS in studies of lunar basins. EGS Conference, Nice, France, Abst#.
- Fernandes V.A., Burgess R. and Turner G. (2000): The potential of D-CIXS to study the chemical composition of the lunar maria. Abst. for 25<sup>th</sup> EGS Conference, Nice, France.
- Fernandes V.A., Burgess R. and Turner G. (2000): Luna 16 and Luna 20 regolith cores: Petrology and  $^{40}\text{Ar}$ - $^{39}\text{Ar}$  age studies. EGS Congerence, Nice, France, Abst#.
- Fernandes V.A., Burgess R. and Turner G. (1999): Laser  $^{40}\text{Ar}$ - $^{39}\text{Ar}$  age studies of Dar Al Gani 262 lunar meteorite. New Views of the Moon II Workshop, LPI, Abst. 8031.
- Burdick K., Hartnett J., Adhya S. and Fernandes V. (1998): How to popularize geological sciences among secondary school students: Fututre educator's viewpoints. HMPGA Second Ann. Tech. Symp.
- Delano J.W. and Fernandes V.A. (1998): Deep-seated magmatic processes reflected by compositional trends within the Apollo 14 glasses. Proc. Lunar and Plan. Sci. Conf., 29<sup>th</sup> Abstract # 117, Lunar and Planetary Institute, Houston (CD-ROM).

## Book Chapter

- Assis Fernandes V., Burgess R. and Sumino H. (2024) The complexities in interpreting argon isotopes: Chock-full of components. In "Methods and Applications in Geochronology", Elsevier, Editors: J. Gregory Shellnutt, Steven W. Denyszyn, Kenshi Suga, 297-343.
- Shearer C, Neal C.R., Glotch T.D., Prissel T. C., Bell A.S., Assis Fernandes V., Gaddis L.R., Jolliff B.L., Laneuville M., Magna T., Simon J., Taylor J. (2023) Magmatic Evolution II: A New View of Post-Differentiation Magmatism. *Reviews in Mineralogy and Geochemistry* 2023;; 89 (1): 147–206. doi: <https://doi.org/10.2138/rmg.2023.89.04>



Docobo J. A., Trigo-Rodríguez J. M., Borovicka J., Tamazian V.S., Fernandes V.A. and Llorca J. (2007) March 1, 2005 Daylight Fireball Over Galicia (NW of Spain) and Minho (N. Portugal). *Earth, Moon and Planets* 102, 537-542. DOI: 10.1007/978-0-387-78419-9\_69

### **Technical reports**

Fernandes V. A. and Wurz P. (2013) Review of the harmful effects of lunar dust: on humans and instrumentation: *In* ESA-DPEM study.

Fernandes V. A. and Wurz P. (2012) Review to establish characteristics of dust particles close to the Lunar Surface. *In* Study report for L-DEPP instrument planned for ESA Lunar Lander.

Alves E.I., Gilmour J., Azevedo J.M., Bridges J.C., Costa M.S., Fernandes V.A., Figueiredo F.P.O., Gomes C.R., Hegymegy L., Kejik P., Madeira V.M.C., Marinangeli L., Ori G.G., Pais M.A., Popovic R.S., Ripka R.S., Veiga N.A. and Wieczorek M.A. (2003): A magnetic gradiometer on Mars. ESA document MOI-Pasteur-2003, Iss. 1, 71-74.

Marinangeli L., Alves E.I., Baliva A., Bressan M., Ori G.G., Fernandes V.A., Bonanno G., Piluso E., Ponzoni C., Fernández-Remola D., Martínez-Frias J., Gago J.A.M., Moroz L., Basilevsky A.T., Krassilnikov A.S., Basu A. and Gilmore M.S. (2003): A miniaturized X-ray diffractometer of mineralogical analysis of martian soils and rocks. ESA document MOI-Pasteur-2003, Iss. 1, 93-96.

### **Editorial**

Fernandes V.A. (2002): New Views on The Moon – Europe: Future Lunar Exploration, Science Objectives and Integration of Datasets. DLR-Berlin, Germany, January 14-16<sup>th</sup>, 2002. *Met. And Planet. Sci.*, vol. 37, No. 3.

### **Industry Application Tutorial**

Scheller S. (2012): Specific small particle search by mineral grain feature analysis and chemical evaluation using QUANTAX. Bruker Nano GmbH Application Note # EDS-05. – supplied sample and advised on search criteria.