

Publications

...in refereed journal

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 (submitted) X-ray Fluorescence Observations of the Moon by SMART-1/ D-CIXS and the First Detection of Ti K α From the Lunar Surface.

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. (*submitted*): The Scientific Rationale for the C1XS X-Ray Spectrometer on India's Chandrayaan-1 Mission to the Moon. Planetary and Space Science

Docobo J. A., Trigo-Rodríguez J.Ma, 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.

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, vol. 55, pp. 494-502.

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. J. Planetary and Space Science, vol. 51, pp. 427-433.

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. J. Planetary and Space Science, vol. 51, pp. 435-442.

...in preparation

Fernandes, V.A., Burgess, R. and Turner, G. (*in preparation*) ^{40}Ar - ^{39}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.

Abstracts

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.#3029

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.# A652.

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. 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. N. 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. 70th 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., Huvelin, 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 Erastotherian II: NWA 479. 69th 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. 69th Met. Soc. Conf, abst#5308.

Fernandes, V. A., Burgess, R., Bischoff, A. and Sokol, A. K. (2006) Lunar volcanism during the Erastotherian I: Kalahari 009. 69th 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. 69th Met. Soc. Conf, abst#5257.

Grande, M., Kellet, B. & 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, D. el Pilar M. (2006) Características Litológicas das Unidades Estratigráficas da Ilha das Flores, Açores. XLIII Congresso Brasileiro de Geologia, Aracaju, 3 -8 September, 2006.

Kellet, B.J.; Grande, M.; 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; 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) ⁴⁰Ar/³⁹Ar 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 21st Century, Royal Astronomical Society, London, Nov. 11th 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 ⁴⁰Ar-³⁹Ar em amostras basálticas obtidas pelas sondas Soviéticas Luna 16, 20 e 24 e de meteoritos lunares. Congresso Nacional de Ciências da Terra, June 24th-27th, 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, 24th-26th 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 27th EGS Conference, Nice, France.

Fernandes, V.A., Burgess, R. and Turner, 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. 1st Convention of the Lunar Explorers Society, 8th – 10th March, Paris, France.

Fernandes, V.A., Burgess, R. and Turner, G. (2001): Basaltic Lunar meteorite North West Africa 032 (NWA032): ⁴⁰Ar/³⁹Ar age studies. Abst. for 26th 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. 63th 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 4th ICEUM, Noordwijk, The Netherlands.

Dunkin, S.K., Grande, M., Heather, D. J., Alleyne, H., Casanova, I., Christou, A., P. E. Clark, Fernandes, V.A., Foing, B. H., Huovenin, J., Kaukanen, 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., 31st, 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. Abst. for EGS Conference, Nice, France.

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 25th EGS Conference, Nice, France.

Fernandes, V.A., Burgess, R. and Turner, G. (2000): Luna 16 and Luna 20 regolith cores: Petrology and ⁴⁰Ar-³⁹Ar age studies. Abst. For EGS Congerence, Nice, France.

Fernandes, V.A., Burgess, R. and Turner, G. (1999): Laser ⁴⁰Ar-³⁹Ar 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. Sc. Conf., 29th Abstract # 1177 , Lunar and Planetary Institute, Houston (CD-ROM).