

**Dr Louisa J. Preston**  
UK Space Agency Aurora Research Fellow  
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## Employment

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UK Space Agency Aurora Research Fellow – Birkbeck, University of London (July 2016 – present)

Author – Bloomsbury Publishing (Sabbatical January 2015 – June 2016)

Popular science book on Astrobiology covering the origins of the Universe, habitability, life on Earth, the search for life in the Solar System, exoplanets, and human colonisation of the Moon and Mars.

Postdoctoral Research Associate – The Open University (November 2011 – December 2014)

ESA-funded CAFE project – Concepts for Activities in the Field for Exploration

Lecturer – University of Western Ontario (January 2011 – May 2011)

Astronomy 2021b The Search for Life in the Universe

CPSX Postdoctoral Research Fellow – University of Western Ontario (Feb 2009 – September 2011)

The preservation and identification of life using FTIR spectroscopy within: impact craters (the Haughton Impact Structure, Canada and Barringer Crater, Arizona); the Rio Tinto river, Spain; hot springs, volcanoes and glacial ice, Iceland; volcanic glass of The Ontong Java Plateau and carbonate speleothems of New Mexico.

- Flight Director for the Canadian Space Agency (CSA) Lunar Analogue Mission: "Lunar Sample Return from the South Pole–Aiken Basin".

## Education

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PhD – Imperial College London (October 2005 – December 2008)

‘A Multidisciplinary Study of Biomarkers in Hydrothermal Deposits: Applications to the Search for Life on Mars’ produced under the supervision of Dr Matthew Genge and Dr Richard Ghail.

MSci Geology – First Class Honours – Imperial College London (October 2001 – June 2005)

MSci project: ‘Olivine grains containing Fe-oxide grains: Micrometeorites or Meteorite Ablation products?’

## Grants and Awards

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- 2016 P-I UK Space Agency Aurora Research Fellowship
- 2015 Co-I UK Space Agency Outreach Grant (£4000)
- 2015 Co-I RAS Outreach Award (£2000)
- 2013 Voice of the Future 2013
- 2013 TED Fellowship 2013
- 2011 Study Scientist CAFE – European Space Agency (€200,000)
- 2010 Co-I, Impacts and Ice (I2): A lunar sample return mission to the South Pole–Aitken Basin, Canadian Space Agency (CSA) (CAD \$815,038).
- 2009 Co-I, TEMMI multispectral manipulator mounted microscope, MDA and CSA (CAD \$1,000,000).
- 2009 Centre for Planetary Science and Exploration (CPSX) Postdoctoral Fellowship (2009-2011; CAD \$80,000)

- 2007 Imperial College Research Travel grant (£500)
- 2006 STFC Fieldwork Grant (£1,500)
- 2005 Science and Technology Facilities Council (STFC) Postgraduate Research Studentship (£42,000)
- 2005 Best MSci Thesis presentation (certificate)
- 2004 The F. A. Paneth Meteorite Trust award, The Royal Astronomical Society (£1,500)

## Professional Activities

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### **Juno and Athena SWAN Bronze Award Working Group**

Department of Physical Sciences, Open University

#### **Scientific Advisor/Program Manager**

- Mission Control, NASA, HI-SEAS Mars Exploration Analogue Mission.
- Flight Director, Canadian Space Agency/Western University ILSR Lunar Analogue Mission.
- Program Manager/Scientific advisor, CSATEMMI multispectral microscopic imager for Mars science.
- Science Team, MDA Mars Sample Return Technology Deployment.
- Scientific advisor, Routes Astroengineering proposal for a Manipulator Mounted Microscope.

#### **Laboratory Manager**

- Fourier Transform Infra-red Laboratory, The Open University.
- Earth and Planetary Materials Imaging and Analysis Facility, Western University.

#### **Editor**

- Planetary Matters - The Planetary Science Division newsletter for the Geological Association of Canada.

#### **Editorial Board**

- International Journal of Astrobiology
- Encyclopaedia of Bioastronautics, Springer

#### **Conference Organisation**

- Convenor: "Planetary analogue samples and environmental simulators", EPSC2014, Lisbon.
- Convenor: "Biomarkers of life within planetary analogue environments", EPSC2013, London, UK.
- Convenor: "Caves", EPSC2013, London, UK.
- Convenor: "CAFE", February 8<sup>th</sup> 2012, the Royal Astronomical Society, London, UK.
- Scientific Organising Committee: "3rd Conference on Terrestrial Mars Analogues", 25<sup>th</sup> to 27<sup>th</sup> October 2012, Marrakech, Morocco.
- Sessional Organiser: "Astrobiology of Planetesimals/Biomarkers in terrestrial and extraterrestrial environments", Astrobiology Science Conference 2012, Atlanta.

#### **Journal Reviews**

Acta Astronautica (2); Astrobiology (4); Geomicrobiology (5); The Biologist (1); International Journal of Astrobiology (3), Planetary and Space Science (1).

#### **Professional Affiliations**

- TED Fellow
- STEM-NET Ambassador
- Treasurer of the Astrobiology Society of Britain
- Geological Association of Canada
- Member of the British Science Association
- Associate of the Royal School of Mines

## Teaching

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### Lecturer

- 2011 Astronomy 2012b, the Search for Life in the Universe, Western University (Undergraduate).
- 2010-2011 Planetary Science Short Course, Western University. (Graduate and Professional).
- 2010 Infrared spectroscopy and mineralogy, Advanced Mineralogy, Western University (Graduate).

### Teaching Assistant

- 2010 Impact Processes
- 2005-2009 Optical Mineralogy; Rocks and Minerals; Internal Processes; Igneous and Metamorphic Petrology; Planetary Geology; Earth and Life.

### Supervisor

- Four undergraduate and three postgraduate students at Western University 2010-2011; undergraduate summer students at the Open University, 2012.

## Field Experience

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- 2013 Eyjafjallajökull, Iceland: Microbiological investigation of recent lava fields.
- 2012 Eyjafjallajökull, Iceland: Volcanic processes, hot springs and microbial preservation.
- 2011 Eyjafjallajökull, Iceland: Volcanic processes, hot springs and microbial preservation.
- 2010 Iceland, multiple sites: Volcanic processes and ice/rock interactions.
- 2009 Grimsby, Ontario, Canada: Meteorite hunting.
- 2009 Stac Fada, Scotland: Precambrian impact ejecta blanket investigations.
- 2008 Hawaii: Volcanic processes, life in volcanic environments and Mars analogues.
- 2006 Taupo Volcanic Zone, New Zealand: Hot spring microbiology and sample collection.
- 2006 Haukadalur, Iceland: Hot spring microbiology and sample collection.
- 2006-2008 Kin Loch Leven, Scotland.
- 2005 Oxfordshire, England.

## Technical Experience

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### Laboratory

- Experienced user of Optical Microscopy (basic optical, Nikon LV100 POL Compound and Zeiss Colibri microscopes), Scanning Electron Microscopy techniques (JEOL5900LV, LEO1455VP) and Transmission Electron Microscopy.
- Trained in:
  - Fourier Transform Infra-Red (FTIR) Spectroscopy techniques (Perkin Elmer Spectrum One; Bruker IFS55; Thermo Fisher and Nicolet Continuum Microscope)
  - ICP-AES sample solution preparation and analysis
  - Powder sample X-Ray Diffraction (XRD)
  - Sample preparation and analysis via Gas Chromatography Mass Spectrometry (GCMS)
  - Clean room procedures and biohazard safety courses.
- Conducted enumerations; biological sample preparation; DNA extraction from cultured microorganisms.
- Undertaken training in demonstration and teaching.

## Publications Summary

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1. Preston, L.J., Johnson, D., Cockell, C.S., Grady, M.M. (2015) Fourier Transform Infra-Red (FTIR) Spectral detection of life in polar subsurface environments and its application for Mars exploration. *Applied Spectroscopy*. 69:1059-1065.
2. Preston, L. J., Melim, L.A., Polyak, V., Yemane, A., Southam, G. (2014) Infrared Spectroscopic Biosignatures from Hidden Cave, New Mexico: Possible Applications for Remote Life Detection. *Geomicrobiology*. DOI:10.1080/01490451.2014.913096.
3. Preston, L.J. and Dartnell, L.R. (2014) Planetary habitability: lessons learned from terrestrial analogues. *International Journal of Astrobiology*. 13:81-98.
4. Preston, L.J. (2012) Mission to Mars. *The Biologist*. 59:16-20.
5. Preston, L.J., Banerjee, N.R., and Izawa, M.R.M. (2011) Infrared spectroscopic characterization of organic matter associated with microbial bioalteration textures in basaltic glass. *Astrobiology Special Edition*. 11. 585-599.
6. Preston, L.J., Shuster, J., Fernández-Remolar, D., Banerjee, N.R , Osinski, G.R., and Southam, G. (2011) The preservation and degradation of filamentous bacteria and biomolecules in iron oxide deposits from Rio Tinto, Spain. *Geobiology*. 9. 233-249. DOI: 10.1111/j.1472-4669.2011.00275.x.
7. Preston, L.J. and Genge, M. J. (2010) The Rhynie Chert, Scotland and the search for life on Mars. *Astrobiology*. 10 (5). 549-560.
8. Preston, L. J., Benedix, G., Genge, M. J. and Sephton, M. A. (2008) A combined mineralogical, textural and mid-infrared spectroscopy study of silica sinter deposits: applications to silica identification on Mars. *Icarus*. 198. 331-350.

## Refereed Full Papers

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1. Preston, L.J., Johnson, D., Cockell, C.S., Grady, M.M. (2015) Fourier Transform Infra-Red (FTIR) Spectral detection of life in polar subsurface environments and its application for Mars exploration. *Applied Spectroscopy*. Accepted.
2. Osinski, G.R., Preston, L.J., Bunch, T.E., Wittke, J. and Kearsley, A. (2015) Shocking carbonates and organics at Barringer Crater. *Nature Geoscience*. In review.
3. Preston, L.J., Melim, L.A., Polyak, V., Yemane, A., Southam, G. (2014) Infrared Spectroscopic Biosignatures from Hidden Cave, New Mexico: Possible Applications for Remote Life Detection. *Geomicrobiology Journal*. 31:929-941.
4. Preston, L.J. and Dartnell, L.R. (2014) Planetary habitability: lessons learned from terrestrial analogues. *International Journal of Astrobiology*. 13:81-98.
5. Sapers, H.M., Osinski, G.R., Banerjee, N.R. and Preston, L.J., (2014) Enigmatic tubular features in impact glass. *Geology*. 42:471-474.
6. Preston, L.J. (2012) Mission to Mars. *The Biologist*. 59:16-20.
7. David C. Fernández-Remolar, Louisa J. Preston, Mónica Sánchez-Román, Matthew R. M. Izawa, Gordon Southam, Neil R. Banerjee, Gordon R. Osinski, David Gómez-Ortíz, Olga Prieto Ballesteros, Nuria Rodríguez, Andrew Hill, Ricardo Amils, and Christopher Romanek. (2012) Carbonate precipitation under acidic conditions opens new windows for searching life on Mars. *Earth and Planetary Science Letters*. 351:13-26.
8. Osinski, G.R., Tornabene, L.L., Banerjee, N.R., Cockell, C.S., Flemming, R., Izawa, M.R.M., McCutcheon, J., Parnell, J., Preston, L.J., Pickersgill, A.E., Pontefract, A., Sapers, H.M., and Southam, G. (2012) Impact-generated hydrothermal systems on Earth and Mars. *Icarus*. 224:347-363.
9. Melissa M. Battler, Gordon R. Osinski, Darlene S. S. Lim, Alfonso F. Davila, Frederick A. Michel, Michael A. Craig, Matthew R. M. Izawa, Lisa Leoni, Gregory F. Slater, Alberto G. Fairén, Neil R. Banerjee, and Louisa J. Preston. (2012) Characterization of the acidic cold seep emplaced jarositic Golden Deposit, NWT, Canada, as an analogue for jarosite deposition on Mars. *Icarus*. 224:382-398.
10. Moores, J.E., Francis, R., Mader, M., Osinski, G.R., Barfoot, T., Barry, N., Basic, G., Battler, M., Beauchamp, M., Blain, S., Bondy, M., Capitan, R-D., Chanou, A., Clayton, J., Cloutis, E., Daly, M., Dickinson, C., Dong, H., Flemming, R., Furgale, P., Gammel, J., Gharfoor, N., Hussein, M., Grieve, R., Henrys, H., Jaziobedski, P., Lambert, A., Leung, K., Marion, C., McCullough, E., McManus, C., Neish, C.D., Ng, H.K., Ozaruk, A., Pickersgill, A., Preston, L.J., Redman, D., Sapers, H., Shankar, B., Singleton, A., Souders, K., Stenning, B., Stooke, P., Sylvester, P., and Tornabene, L. (2012) A Mission Control Architecture for Lunar Sample Return as Field Tested in an Analogue Deployment to the Sudbury Impact Structure. *Advances in Space Research*. 50:1666-1686.

11. Antonenko, I., Osinski, G.R., Battler, M., Beauchamp, M., Cupelli, L., Chanou, A., Francis, R., Mader, M.M., Marion, C., McCullough, E., Pickersgill, A.E., Preston, L.J., Shankar, B., Unrau, T., and Veillette, D. (2012) Issues of Geologically-Focused Situational Awareness in Robotic Planetary Missions: Lessons from an Analogue Mission et Mistastin Lake Impact Structure, Labrador, Canada. *Advances in Space Research*. 52:272-284.
12. Battler, M.M., Mader, M.M., Preston, L.J., Moores, J., Osinski, G.R., Cormier, D., McCollough, E., Tornabene, L. and Pontrefract, A. (2012) Evaluation of communication protocols between mission control and astronauts during a series of science driven simulated lunar missions. 63<sup>rd</sup> International Astronautical Congress. Conference paper.
13. Mader M. M., G. R. Osinski, B. Shankar, L. L. Tornabene, A.E. Pickersgill, C. L. Marion, T. Barfoot, M. Beauchamp, R. Francis, N. Ghafoor, E. McCullough, J. Moores, L. J. Preston and ILSR team. (2012) Baseline Scientific Requirements for a Lunar Robotic Precursor Mission: Lessons Learned from Analogue Missions at the Mistastin (Kamestastin) Lake Impact Structure, Canada. 63<sup>rd</sup> International Astronautical Congress. Conference paper.
14. Preston, L. J., Banerjee, N.R., and Izawa, M.R.M. (2011) Infrared spectroscopic characterization of organic matter associated with microbial bioalteration textures in basaltic glass. *Astrobiology Special Edition*. 11. 585-599.
15. Preston, L. J., Shuster, J., Fernández-Remolar, D., Banerjee, N.R., Osinski, G.R., and Southam, G. (2011) The preservation and degradation of filamentous bacteria and biomolecules in iron oxide deposits from Rio Tinto, Spain. *Geobiology*. 9. 233-249. DOI: 10.1111/j.1472-4669.2011.00275.x.
16. Preston, L. J. and Genge, M. J. (2010) The Rhynie Chert, Scotland and the search for life on Mars. *Astrobiology*. 10 (5). 549-560.
17. Preston, L. J., Benedix, G., Genge, M. J. and Sephton, M. A. (2008) A combined mineralogical, textural and mid-infrared spectroscopy study of silica sinter deposits: applications to silica identification on Mars. *Icarus*. 198. 331-350.

## Catalogues

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1. Preston, L.J., Barber, S.J., Grady, M.M. and Angerer, O. (2013) The Catalogue of Planetary Analogues. European Space Agency.  
[http://esamultimedia.esa.int/docs/gsp/The\\_Catalogue\\_of\\_Planetary\\_Analogues.pdf](http://esamultimedia.esa.int/docs/gsp/The_Catalogue_of_Planetary_Analogues.pdf)

## Technical Reports

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1. Preston, L.J., Barber, S.J. and Grady, M.M. (2012) CAFE TN1-1. European Space Agency.
2. Preston, L.J., Barber, S.J. and Grady, M.M. (2012) CAFE TN1-2. European Space Agency.
3. Preston, L.J., Barber, S.J. and Grady, M.M. (2012) CAFE TN2-1. European Space Agency.

4. Preston, L.J., Barber, S.J. and Grady, M.M. (2013) CAFE TN3-1. European Space Agency.
5. Preston, L.J., Barber, S.J. and Grady, M.M. (2013) CAFE TN4-1. European Space Agency.
6. Preston, L. J., Osinski, G.R., Spray, J., and Daly, M. (2010) TEMMI (Three Dimensional Exploration Multispectral Microscope Imager). Science Requirements Report. Canadian Space Agency.

## Abstracts

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1. Preston, L.J., Melim, L.A., Northup, D.E., Boston, P.J., Southam, G. (2013) Biomarker preservation within Cave Speleothems: Important targets for Mars Exploration. (abstract #EPSC2013-236) European Planetary Science Congress, London, September, 2013.
2. Grady, M.M., Verchovsky, A., Franchi, I.A., Gilmour, I., Gilmour, M.A., Preston, L.J., Snape, J., Starkey, N. (2013) Organic Matter Distribution in Carbonaceous Chondrites: Results from Sutter's Mill. Submitted to MetSoc 2013.
3. Grady, M.M., Fernandes, C.D., Gilmour, I., Harker, A., Preston L.J., and Verchovsky, A.B. (2013) Light element geochemistry and spectroscopy of the Sutter's Mill Carbonaceous Chondrite. (abstract #3000) 44th Lunar and Planetary Science Conference. Houston, Texas, March 2013.
4. Battler, M.M., Mader, M.M., Preston, L.J., Moores, J., Osinski, G.R., Cormier, D., McCollough, E., Tornabene, L. and Pontrefract, A. (2012) Evaluation of communication protocols between mission control and astronauts during a series of science driven simulated lunar missions. 63<sup>rd</sup> International Astronautical Congress, Paper ID: 15829.
5. Mader M. M., G. R. Osinski, B. Shankar, L. L. Tornabene, A.E. Pickersgill, C. L. Marion, T. Barfoot, M. Beauchamp, R. Francis, N. Ghaffoor, E. McCullough, J. Moores, L. J. Preston and ILSR team. (2012) Baseline Scientific Requirements for a Lunar Robotic Precursor Mission: Lessons Learned from Analogue Missions at the Mistastin (Kamestastin) Lake Impact Structure, Canada. 63<sup>rd</sup> International Astronautical Congress, Paper ID
6. Preston, L. J., Barber, S. J., Grady, M. M. and the CAFE Team. (2012) Introducing a new on-line resource for planning scientific field investigations in planetary analogue environments: CAFE. (Abstract # 1350083). Astrobiology Science Conference. Atlanta, Georgia, April 2012.
7. Mónica Sánchez-Román, David C. Fernández-Remolar, Antonio Sanchez-Navas, Christopher Romanek, Thomas Schmid, Fernando Nieto, Monika Oggerin, Nuria Rodríguez, Louisa J. Preston, Matthew R. M. Izawa, Gordon Southam, Neil Banerjee, Gordon Osinski, Darby Dyar, David Gómez-Ortiz, Olga Prieto-Ballesteros and Ricardo Amils. (2012) Carbonate precipitation in acidic environments, a potential biosignature for searching for life on Mars. (Abstract # 1354929). Astrobiology Science Conference. Atlanta, Georgia, April 2012.

8. Preston, L. J., Barber, S. J., Grady, M. M. and the CAFE Team. (2012) CAFE: A new on-line resource for planning scientific field investigations in planetary analogue environments (Abstract # 1874). 43rd Lunar and Planetary Science Conference. Houston, Texas, March 2012.
9. Pickersgill A. E., Osinski G. R., Beauchamp M., Marion C., Mader M. M., Francis R., McCullough E., Shankar B., Barfoot T., Bondy M., Chanou A., Daly M., Dong H., Furgale P., Gammell J., Ghafoor N., Hussein M., Jasiobedzki P., Lambert A., Leung K., McManus C., Ng H. K., Pontefract A., Stenning B., Tornabene L. L., Tripp J., and the ILSR Team. (2012) Scientific Instrumentation for a Lunar Sample Return Analogue Mission (abstract #2657). 43rd Lunar and Planetary Science Conference. Houston, Texas, March 2012.
10. Chanou A., Tornabene L. L., Osinski G. R., Zanetti M., Pickersgill A. E., Shankar B., Marion C., Mader M. M., Souders K. A., Sylvester P., Jolliff B. L., Shaver C., and the KRASH science and operations teams (2012) Impact Melt-Pond Scenario Tested During the KRASH 2011 Analogue Mission at Kamestastin Impact Structure (abstract #2580). 43rd Lunar and Planetary Science Conference. Houston, Texas, March 2012.
11. Mader M. M., McCullough E., Beauchamp M., Clayton J., Marion C. L., Moores J., Pickersgill A. E., Preston L. J., Shankar B., Osinski G. R., and ILSR team. (2012) Science data management during real-time geological lunar analogue missions to the Sudbury and Mistastin Lake impact structures: Recommendations for future ground data systems (abstract #1842). 43rd Lunar and Planetary Science Conference. Houston, Texas, March 2012.
12. Marion C. L., Osinski G. R., Abou-Aly S., Antonenko I., Barfoot T., Barry N., Bassi A., Battler M., Beauchamp M., Bondy M., Blain S., Capitan R., Cloutis E., Cupelli L., Chanou A., Clayton J., Daly M., Dong H., Ferrière L., Flemming R., Flynn L., Francis R., Furgale P., Gammell J., Garbino A., Ghafoor N., Grieve R. A. F., Hodges K., Hussein M., Jasiobedzki P., Jolliff B. L., Kerrigan M. C., Lambert A., Leung K., Mader M. M., McCullough E., McManus C., Moores J., Ng H.K., Otto C., Ozaruk A., Pickersgill A. E., Pontefract A., Preston L. J., Redman D., Sapers H., Shankar B., Shaver C., Singleton A., Souders K., Stenning B., Stooke P., Sylvester P., Tripp J., Tornabene L. L., Unrau T., Veillette D., Young K., Zanetti M. (2012) A Series of robotic and human analogue missions in support of lunar sample return (abstract #2333). 43rd Lunar and Planetary Science Conference. Houston, Texas, March 2012.
13. Shankar B., Osinski G. R., Abou-Aly S., Beauchamp M., Blain S., Chanou A., Clayton J., Francis R., Kerrigan M., Mader M. M., Marion C., McCullough E., Moores J. E., Pickersgill A. E., Pontefract A., Preston L. J., and Tornabene L. L. (2012) Lunar Analogue Mission: Overview of the site selection and traverse planning process for a human sortie mission at the Mistastin Lake Impact Structure, Labrador, Canada (abstract #1143). 43rd Lunar and Planetary Science Conference. Houston, Texas, March 2012.
14. Moores J. E., Francis R., Osinski G.R., Mader M., McCullough E., Preston L. J., Tornabene L. L. and KRASH Operations and Science Team. (2012) Surface operations for mission control during analogue human lunar deployments to Mistastin and Barringer impact structures (abstract #1136). 43rd Lunar and Planetary Science Conference. Houston, Texas, March 2012.
15. Kerrigan M. C., Shankar B., Marion C., Francis R., Pickersgill A. E., Capitan R. D., Osinski G. R., and the ILSR Team (2012) Real-time Mission Control Tracking of Astronaut Positions during



Analogue Missions (abstract #2756). 43rd Lunar and Planetary Science Conference. Houston, Texas, March 2012.

16. Francis R., Osinski G. R., Moores J., Barfoot T., and the ILSR Team (2012) Co-operative human-robotic exploration of lunar analogue sites (abstract #1996). 43rd Lunar and Planetary Science Conference. Houston, Texas, March 2012.
17. McCullough, E., Pickersgill A. E., Francis R., Bassi A., Shankar B., Mader M., Beauchamp M., Osinski G.R., and the KRASH science and operations teams. (2012) Scientific Application of Visual Systems Instrumentation used during Lunar Sample Return Analogue Missions (abstract #2687). 43rd Lunar and Planetary Science Conference. Houston, Texas, March 2012.
18. Pontefract, A., Marion, C., Osinski, G.,R., Francis, R., Pickersgill, A. E., Tornabene, L.L. and the ILSR Team (2012) Use of Portable XRF and Raman for in situ Analysis in Manned Planetary Investigations: Lessons Learned from the Kamestastin Lunar Analogue Mission (abstract #2086) 43rd Lunar and Planetary Science Conference. Houston, Texas, March 2012.
19. Tornabene L. L., Osinski G.R., Mader M., Chanou, A., Francis R., Jolliff, B. L., Marion, C., McCullough E., Pickersgill A. E., Sapers, H., Souders, K., Sylvester, P., Young, K., Zanetti, M. and KRASH Team. (2012) Utility of remote sensing, robotic precursor data and a focused science hypothesis for a follow-on human exploration lunar analogue mission at the Mistastin Lake (Kamestastin) impact structure (abstract #2390). 43rd Lunar and Planetary Science Conference. Houston, Texas, March 2012.
20. Abou-Aly, S., G. O. Osinski, M. M. Mader, KRASH Team (2012) Significance of Science-Tactical Liaison Role in Mission Control for the Krash Lunar Analogue Sample Return Mission(abstract #2310). 43rd Lunar and Planetary Science Conference. Houston, Texas, March 2012.
21. Blain S., Mader M. M., Tornabene L. L., Osinski G. R., and ILSR team. (2012) Significance of mission control Science Documentarian in the KRASH lunar analogue mission (abstract #2079). ). 43rd Lunar and Planetary Science Conference. Houston, Texas, March 2012.
22. Sapers, H.M., Banerjee, N.R., Osinski, G.R., and Preston, L.J. (2012) A Multi-analytical approach to assess the biogenicity of putative microbial ichnofossils in impact glass. MISASA-IV Conference. Japan.
23. Preston, L. J., Barber, S. J., Grady, M. M. and the CAFE Team. (2012) CAFE: A new on-line resource for planning scientific field investigations in lunar analogue environments. Scientific Preparations for Lunar Exploration. ESTEC, The Netherlands, February 2012. (poster presentation).
24. Battler, M. M., Tornabene, L. L., Preston, L. J., Loiselle, L., Farrand, W., Glotch, T., Kerrigan, M., Osinski, G. R. (2011) Jarosite-rich Mawrth “Vader” as a prospective landing site for proposed future Mars missions. Imaging target proposal for new candidate landing sites for future Mars missions. Mars Program Office, NASA/JPL.

25. G. R. Osinski, L. J. Preston, L. Ferrière, T. Prave, J. Parnell, A. Singleton, A. E. Pickersgill. (2011) The Stac Fada "Impact Ejecta" Layer: Not what it seems. 74th Annual Meteoritical Society Meeting. Abstract # 5451. (oral presentation)
  
26. Preston, L. J., M. R. M. Izawa, N. R. Banerjee. (2011) Infrared spectroscopic characterization of organic matter associated with microbial bioalteration textures in basaltic glass and the implications for Mars. The International Conference: Exploring Mars Habitability, Lisbon, Portugal. Abstract # 2172083. (poster presentation)
  
27. Preston, L. J., J. Shuster, D. Fernández-Remolar, N. R. Banerjee, G. R. Osinski, G. Southam. (2011) The preservation and degradation of filamentous bacteria and biomolecules at Rio Tinto, Spain and their implications for Mars. The International Conference: Exploring Mars Habitability, Lisbon, Portugal. Abstract # 2181099. (poster presentation)
  
28. Melissa M. Battler, L. Leoni, L. J. Preston, G. R. Osinski, D. S. S. Lim, A. F. Davila, F. A. Michele, M. A. Craig, M. R. M. Izawa, G. F. Slater, A. G. Fairén, N. R. Banerjee. (2011) Habitability and organic preservation in cold seep precipitated jarosite on Earth and Mars. The International Conference: Exploring Mars Habitability, Lisbon, Portugal. (poster presentation)
  
29. Preston, L. J., G. R. Osinski, N.R. Banerjee, M. Daly, P. Dietrich, M. Doucet, A. Kerr, M. Robert, G. Southam, J. G. Spray, M. Talbot, A. Taylor, M. Tremblay. (2011) TEMMI: A Three-Dimensional Exploration Multispectral Microscopic Imager for Planetary Exploration. GAC-MAC 2011, Ottawa, Canada. Abstract # 692. (oral presentation)
  
30. Mader, M.M., Antonenko, I., Osinski, G.R., Marion, C.L., Beauchamp, M., Battler, M., Chanou, A., Cupelli, L., Francis, R., McCullough, E., Pickersgill, A., Preston, L.J., Shankar, B., Unrau, T., Veillette, D. (2011) Integrated planetary operations at the Mistastin Lake lunar analogue site, Labrador, Canada: Recommendations for future lunar missions. GAC-MAC 2011, Ottawa, Canada. Abstract #558. (oral presentation)
  
31. Antonenko, I., Mader, M.M., Osinski, G.R., Battler, M., Beauchamp M., Cupelli, L., Chanou, A., Francis, R., Marion, C., McCullough, E., Pickersgill, A., Preston, L.J., Shankar, B., Unrau, T. and Veillette, D. (2011) Geo-focused situational awareness in robotic planetary missions: Lessons from an analogue mission at Mistastin Lake impact structure, Labrador, Canada. GAC-MAC 2011, Ottawa, Canada. Abstract # 372. (oral presentation)
  
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