

Dr. Roger Blue Stabbins

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Department of Physics
Rikkyo University
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Academic Positions

- 2023 – 2024 JSPS Postdoctoral Fellowship for Research in Japan
Department of Physics, Rikkyo University, Tokyo, Japan
Project: *“Performance Optimization of the Martian Moons Exploration spacecraft Remote Sensing Imaging Systems”*
- 2023 – 2024 Honorary Research Fellow
Mullard Space Science Laboratory, University College London, UK
- 2019 – 2022 PDRA, UK Space Agency Aurora Grant
Earth Sciences Department, The Natural History Museum, London, UK
Project: *“Geochemistry to Geology for the ExoMars 2020 Rover: Visible to Near-Infrared Spectral Variability”*

Education

- 2015 – 2022 PhD Planetary Science, UK Space Agency Aurora Studentship
Mullard Space Science Laboratory, University College London, UK
Thesis: *“Spectral Imaging Simulations for Planetary Surface Exploration: Preparing for PanCam on the ExoMars Rover”*
- 2010 – 2014 MSci Physics, 1st Class Honours
Department of Physics & Astronomy, University College London, UK

Professional Roles and Memberships

- 2023 – Present Science Working Team Member, JAXA Martian Moons Exploration mission
Instrument simulation, calibration, operations planning, and image processing.
- 2022 – Present Development Team Member, ENFYS Planetary Surface Infrared Spectrometer
Technical lead for defining performance requirements for Mars surface studies.
- 2022 – Present American Geophysical Union Member
- 2015 – Present Science Team Member, ESA ExoMars PanCam
Instrument simulation, calibration, operations planning, and image processing.
- Autumn 2021 Instrument Scientist, ESA RSOWG ExoMars Rover Simulation #4
Observer of rover operations simulation, focusing on PanCam operation.
- 2018 – 2019 Instrument Scientist, ESA ExoFit (ExoMars-like Rover Field Trials)
Rover operations, image processing software development, maintenance, and support.
- Summer 2018 Lead Convener, Building Habitable Worlds Early Career Meeting, MSSSL
- Autumn 2016 Instrument Scientist, UK Space Agency MURFI (Mars Utah Rover Field Investigation)
Instrument field deployment, instrument operations support and image processing.
- 2015 – Present Royal Astronomical Society Fellow

Funding and Awards

- 2023 – 2024 JSPS Postdoctoral Fellowship for Research in Japan
- 2019 – 2022 UK Space Agency Aurora Post-Doctoral Research Associate
- 2019 Mullard Space Science Laboratory Team Achievement Award
- 2017 ASB Student Travel Award, Astrobiology Society of Britain 7th Conference
- 2017 IUGG Student Travel Award, 1st IUGG Planetary Science Symposium, Berlin
- 2016 1st Prize, Oral Presentation, RSPSoc Wavelength Early Career Annual Meeting
- 2016 1st Prize, Poster Presentation, UK Planetary Forum 13th Early Career Meeting
- 2015 – 2019 UK Space Agency Aurora Studentship
- 2013 Space Placement in Industry Network, Summer Internship Grant, RAL Space

Selected Publications & Technical Reports

- Stabbins, Grindrod & Gunn, “IR Spectrometer requirements technical note” UK Space Agency Technical Report, IS-TNO-ABU-0001 (2022). Contribution: Conception, methods, software development, data processing, data analysis, manuscript writing.
- Grindrod, Stabbins, et al, “Optimizing Exomars 2022 Rover Remote Sensing Multispectral Science: Cross-Rover Comparison using Laboratory and Orbital Data” *Earth & Space Science*, 9, e2022EA002243 (2022). Contribution: Conception, methods, software development, data processing, data analysis, manuscript writing.
- Allender, Stabbins, et al, “The ExoMars Spectral Tool (ExoSpec): an image analysis tool for ExoMars 2020 PanCam imagery” Proc. SPIE 10789, *Image and Signal Processing for Remote Sensing XXIV*, 107890I (2018). Contribution: Methods, software development, data processing, and manuscript writing.
- Balme et al, incl. Stabbins, "The 2016 UK Space Agency Mars Utah Rover Field Investigation (MURFI)" *Planetary & Space Science*, 165, pp. 31-56 (2019). Contribution: Data processing, data analysis, and manuscript writing.
- Coates et al, incl. Stabbins, "The PanCam instrument for the ExoMars rover" *Astrobiology*, 17, 6-7, (2017). Contribution: Methods, manuscript writing.

Selected Conference Presentations

- Oral (invited) MMX 6th Science Working Team Meeting, Tokyo, 28–30/3/2023
- Oral American Geophysical Union Fall Meeting, Chicago, 12–16/12/2022
- Oral 3rd British Planetary Science Conference, Milton Keynes, 22–25/6/2022
- Poster 52nd Lunar & Planetary Science Conference, The Woodlands, Texas, 15–19/3/2021
- Oral 4th Int. Workshop on Instrumentation for Planetary Missions, TUB Berlin, 12/09/2018

Teaching and Supervision

- 2017 – 2018 Supervisor, MSc Thesis, UCL, D. Bowden (PhD Leicester Uni. awarded 2022)
- 2016 – 2017 Supervisor, Work Experience Group Research Project
- 2015 – 2016 Teaching Assistant, UCL MSc Planetary Atmospheres and Space Env. & Orbits

Training

- Field* UKSA ExoMars Ancient Lake Sediments Field Training, Thurso, 16–19/09/2019
- UKSA ExoMars Field Training Workshop, Pembrokeshire, 18–21/09/2017
- AI/ML* STFC Machine Learning & A.I. Summer School, UCL, 17–25/07/2018
- Imaging* Europlanet Planetary Mapping Winter School, Online, 7–11/2/2022

Technical Skills

- Field* Mineralogical multispectral imaging and IR Spectral reflectance.
- Laboratory* Radiometric and geometric camera calibration and characterisation; spectral BRDF soil and bulk rock measurements.
- Computing* Software development with *Python*, *IDL*, and *ENVI*; programming experience in *MATLAB*, *PBRT (Physically Based Rendering)*, and *C++*; user experience with *Microsoft Office*, *github*, *Adobe Suite*, and *UNIX*

Selected Outreach

- Media* Research feature in A&G Magazine, “Hunting for Biosignatures on Mars”, 1/8/2021
- Radio + Podcast Interview, Radio St Austell Bay, 19/9/2020
- Workshops* Roving-with-Rosalind, interactive activity, Great Exhibition Road Festival, 2022
- Mission to Mars, Sutton Scholars, workshops for disadvantaged children, 2016–2018
- Talks* Skype-a-Scientist, presentations/Q&A’s with international classrooms, Summer 2021
- London International Youth Science Forum, 2/8/2016

References available on request.