

Sophia Baker

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Education

PhD Geophysics, University of Aberdeen, Aberdeen, UK 2021 – (ongoing)

- **Project:** "Using seismology to image subduction termination in northern Borneo"
- Selected for the NASA InSight Seer program and attended InSight's Science Team Meeting in Nov 2022
- Contributor to [*seismological methods utilizing receiver functions in python3*](#) (Python package)

MPhys Physics, Durham University, Durham, UK (2:1) 2017 – 2021

- First class marks for research projects throughout my degree, including my **master's project:** "Searching for Extra-Terrestrial Intelligence with the Cherenkov Telescope Array" (2021)

A-Levels, The Royal Latin School, Buckingham, UK 2015 – 2017

- Physics - A*, Chemistry - A, Mathematics - A, Further Mathematics - A

Work Experience

Demonstrator (MSc Geophysics & BSc Geology), University of Aberdeen, Aberdeen, UK 2021 – 2023

- Subjects covered include Python, Linux and UNIX, Bash, GMT, field skills and introductory geophysical concepts, providing real-time support in programming workshops and with problem solving.
- Communicated concepts to students with different levels of scientific literacy.
- Praised by students in course feedback forms and surveys.

GCSE Maths Tutor, MyTutor, Online, UK 2021 – 2022

- Online tutor for MyTutor, teaching small groups GCSE Maths.

Public Engagement Department, STFC Rutherford Appleton Laboratory, Harwell, UK 2016

- 2-week placement collaborating with particle physicists to provide the public with accessible information about their research, supporting children on a programming outreach course, and giving campus tours to visitors from a diverse range of backgrounds on General Public Access Day.

BP Institute and Department of Chemistry, University of Cambridge, Cambridge, UK 2016

- 2 days shadowing PhD students, preparing chemical samples, and learning good lab practice.

Planetary Sciences Department, The Open University, Milton Keynes, UK 2014

- A week working with PhD students in the Planetary Sciences department carrying out data analysis via Python and excel; became familiar with GIS, attended talks, and learned about academia.

Skills

IT: Python - UNIX - LaTeX - GMT - Bash - Jupyter Notebooks - Microsoft Office - Notion - Windows - Mac

Further technical: data analysis - receiver function imaging - fieldwork including seismometer deployment - general practical and analytical research skills - scientific writing - science outreach - grant applications

Other: multitasking, e.g. managing multiple projects at once - organisation, planning and self-discipline - team leadership and supervision - communicating effectively in a variety of settings - UK driving licence (automatic)

Volunteer Experience

General Chair, BGA Postgraduate Research in Progress Meeting Feb - Sep 2023

- Overseeing committee, delegated, contacted speakers, oversaw EDI and accessibility, lead branding and publicity (social media, website design etc.), maintained planning documents, set meeting agendas and took minutes, convened sessions at the meeting, and authored EDI Statement and Code of Conduct for the conference. Was primary point of contact for conference attendees and sponsors.

Clubs/ societies at University of Aberdeen

The Secret Garden Society (Social Media Officer 2022-23), Conservation Society

Clubs/ societies at Durham University

Allotment Society (President 2019-21), Astronomical Society (Treasurer 2018-19), Physics Society (Publicity Officer 2018-19), Art and Life Drawing Society (2019-20), Freshers Rep (2018), Archery (2017-19), Mixed Lacrosse (2018-20), Womens' Basketball (2020-21)

Conference Posters and Presentations

- **S. Baker**, D. G. Cornwell, A. Gilligan, J. Jenkins, T. Greenfield, N. Rawlinson, F. Tongkul and S. Pilia. 2023. Imaging northern Borneo's Complex Mantle Transition Zone with P-to-S Receiver Functions. AGU Fall Meeting, Dec 2023, San Francisco, USA. (Poster)
- **S. Baker**, D. G. Cornwell, A. Gilligan, J. Jenkins, T. Greenfield, N. Rawlinson, F. Tongkul and S. Pilia. 2023. Receiver Function Imaging of Sabah's complex mantle transition zone. BGA Postgraduate Research in Progress Meeting, Sep 2023, Edinburgh, UK. (Presentation)
- **S. Baker**, D. G. Cornwell, A. Gilligan, J. Jenkins, T. Greenfield, N. Rawlinson, F. Tongkul and S. Pilia. 2023. Receiver Function Imaging of Sabah's complex mantle transition zone. University of Aberdeen School of Geosciences PGR Conference, Jan 2023, Aberdeen, UK. (Poster)
- **S. Baker**, D. G. Cornwell, A. Gilligan, J. Jenkins, T. Greenfield, N. Rawlinson, F. Tongkul and S. Pilia. 2022. Unveiling Sabah's complex mantle transition zone with nBOSS. British Seismology Meeting & BGA Postgraduate Research in Progress Meeting, Sep 2022, Cambridge, UK. (Poster)
- A. Gilligan, E. Watt, D. Hawthorn, R. Clark, **S. Baker**, D. G. Cornwell, L. G. Inuwa, H. Kennedy, K. Löer, and A. Madani. 2022. Probing into the crust through eastern Scotland. British Seismology Meeting, Sep 2022, Cambridge, UK; AGU Fall Meeting, Dec 2022, Chicago, USA. (Poster)
- A. Gilligan, E. Watt, D. Hawthorn, R. Clark, **S. Baker**, D. G. Cornwell, L. G. Inuwa, H. Kennedy, K. Löer, and A. Madani. 2022. Probing Into the Crust Through eastern Scotland: seismological constraints on the Highland Boundary Fault. EGU General Assembly, Apr 2023, Vienna, Austria. (Poster)
- J. R. Morris, L. R. Schurmeier, N. L. Wagner, **S. Baker**, C. Bill, S. Mohanna, N. Roth, H. Sanderson, S. Sridhar, S. Woodley, I. J. Daubar, B. Fernando, C. Newman, and M. Panning. 2023. InSightSeers: Peering Into Invited Student Participation of a Mission Science Team Meeting. LPSC, Mar 2023, Houston, USA. (Poster)

Awards and Grants

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| • Austin Endowment for Student Travel (AGU Student Travel Grant) | 2023 |
| • Royal Astronomical Society Conference/Meeting Travel Subsistence Award | 2023 |

Organisations

- Fellow of the Royal Astronomical Society and member of the British Geophysical Association (BGA)
- Member of American Geophysical Union (AGU)

Hobbies and Interests

Art and design (with work currently on loan to Josephine Butler College, Durham; I enjoy creative challenges, e.g. this year I have recorded an audiobook and taken an online puppetry course) | Fashion and textile history (modern to prehistoric) and dressmaking (I am a self-taught seamstress) | Gardening, DIY and outdoor activities | Creative writing (including writing for The Gaudie student newspaper)

Referees

Dr David Cornwell, Senior Lecturer in the School of Geosciences
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Dr Amy Gilligan, Lecturer in the School of Geosciences
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