Benjamin Green

St Catharine's College, University of Cambridge

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Professional Experience

Student Researcher, Fraunhofer Centre for Applied Photonics – Glasgow, UK — Aug 2025 – Oct 2025

- Performed numerical modelling of vibrational and rotational Raman spectra
- Created a working fibre enhanced Raman spectroscopy setup, and compared the model with the obtained data
- Gained experience with simulations, data analysis and overcoming problems within a research environment

Research Assistant, University of Sussex – Falmer, UK — June 2023 – Aug 2023

- Independently coded a 3D simulation using Python of the acoustic field produced by different designs of acoustic lens
- Visualised chromatic and spherical aberrations using an acoustic camera to help design new lenses
- Introduced to COMSOL physics simulation software

General Assistant, Science Projects Ltd – Herstmonceux, UK — Mar 2020 – Oct 2021

- Communicated science, astronomy and historical knowledge to the general public
- Conducted tours around the ex-Royal Greenwich Observatory site

Education

University of Cambridge, MSci in Astrophysics — Oct 2022 - June 2025

- Astrophysical Fluid Dynamics, Extrasolar Planets, Planetary System Dynamics, Astrophysical Discs, Black Holes
- **Masters Thesis:** Stellar Heterogeneities in Exoplanet Hosting M-type Stellar Spectra

University of Cambridge, BA in Astrophysics, 2:1 — Oct 2025 - June 2026

- 1st year: Physics, Chemistry, Earth Sciences, Mathematics
- 2nd year: Mathematics, Physics
- 3rd year: Astrophysics, including computational projects

Hailsham Community College, A Levels — Sep 2019 - July 2022

- A*A*A*A*A in Maths, Further Maths, Physics, English Literature and Chemistry

Technologies

Languages: Proficient: Python (including NumPy, SciPy), C#
Intermediate: C++

Technologies: Git, Github, Linux, LaTeX, .NET

Awards

- British Physics Olympiad Gold Award

Projects[1]

Stellar Spectrum Decomposition using PHOENIX - Python 2025—

- Analyses real JWST observations using 1000s of ultra high resolution simulated spectra to determine spot covering fractions of M dwarf stars
- Supervised by Lalitha Sairam & Nikku Madhusudhan

corticalOS - C# & Python 2025

- A 3.5k LOC scalable virtual OS with a terminal, commands with arguments, ASCII animations, and real password encryption

Destruct3D - C# 2025

- Procedural destruction plugin for game development using Voronoi triangulation

University of Cambridge CATAM Computational Projects 2025

- Photon Orbits around a Black Hole – Developed a numerical integration solution using Runge-Kutta methods to model particle orbits
- Heat Distribution & Insulation – Implemented a numerical solution to the steady-state temperature distribution using Laplace's equation
- Tools used: Python, SciPy, NumPy

Discover Bath Summer Research Project 2020

- Combined data from the Gaia & NASA Exoplanet databases to write an essay about the characteristics of exoplanet-hosting stars
- Awarded an A*
- Tools used: Python

Game Development 2024 - Present

- I'm an avid coder and spend my free time creating videogames with C# and C++. This has greatly improved my project management skills, as well as my ability to write and debug complex codebases
- Tools used: C#, C++, Godot

[1] Projects in blue have public source code & are clickable