

Education

- 2021–2025 **University of Cambridge (Gonville & Caius College)**, *Ph.D. Astronomy*
Thesis: *Pairing Gaia Data with Simulations to Probe the Dark and Stellar Mass Content of the Milky Way*
Supervisors: Prof. Vasily Belokurov, Prof. Wyn Evans
- 2020–2021 **University of Edinburgh**, *MSc (with Merit) Theoretical Physics*
Thesis: *Probing the Neutrino Mass Hierarchy with Cosmological Density and Velocity Fields*
Supervisor: Prof. John Peacock
- 2016–2020 **Princeton University**, *A.B. (cum laude) Astrophysics with Applied Mathematics*
Thesis: *Smoothing the Universe by Cosmological Contraction in Various Scalar Field Potentials*
Supervisor: Prof. Paul Steinhardt

Publications

- Accepted **Accelerated phase mixing in the stellar halo due to a rotating bar**, *MNRAS*
Elliot Y. Davies, Adam M. Dillamore, Eugene Vasiliev, Vasily Belokurov
<https://arxiv.org/pdf/2301.04154.pdf>
- 9 Dec '22 **Ironing the folds: The phase space chevrons of a GSE-like merger as a dark matter subhalo detector**, *MNRAS*
Elliot Y. Davies, Eugene Vasiliev, Vasily Belokurov, N. Wyn Evans, Adam M. Dillamore
<https://doi.org/10.1093/mnras/stac3581>
- 25 Nov '22 **Energy wrinkles and phase-space folds of the last major merger**, *MNRAS*
Vasily Belokurov, Eugene Vasiliev, Alis J. Deason, Sergey E. Koposov, Adam M. Dillamore, **Elliot Y. Davies**, Robert J. J. Grand
<https://doi.org/10.1093/mnras/stac3436>
- 13 Aug '20 **Robustness of Slow Contraction to Cosmic Initial Conditions**, *JCAP*
Anna Ijjas, William G. Cook, Frans Pretorius, Paul J. Steinhardt, **Elliot Y. Davies**
<https://doi.org/10.1088/1475-7516/2020/08/030>
- 23 Jan '20 **Fuzzy dark matter soliton cores around supermassive black holes**, *MNRAS*
Elliot Y. Davies, Philip Mocz
<https://doi.org/10.1093/mnras/staa202>

Teaching & Supervision

- Fall '22 **Part II Stellar Dynamics and the Structure of Galaxies**, *Supervisor*, Insitute of Astronomy, Cambridge
- Spring '22 **Part II Introduction to Cosmology**, *Supervisor*, Insitute of Astronomy, Cambridge

Outreach

- Nov.'21 – present Outreach Supervisor for Cambridge Higher Aspirations Scheme, whereby I lead six-to-seven sessions per year, covering topics in introductory Astrophysics and Cosmology for high achieving state-school students. Self-constructed preparatory work is provided to the students prior to each session, and discussions are held about assigned work during the sessions (Cambridge, UK).
- Dec '19 Presentation to roughly 50 high school physics students about studying physics at university (Alun School, Mold, UK)
- Dec '17 Presentation to talented high school students on going to university in the United States (Alun School, Mold, UK)

Internships & Visits

- May.'22 – **Center for Computational Astrophysics, Flatiron Institute**
Jun.'22 New York, USA
Guest Researcher
- Jun.'19 – **Princeton Dept. of Astrophysical Science**
Aug.'19 Princeton University, USA
Undergraduate Summer Researcher

Conferences & Meetings

- Jan' 20 Poster presentation at the 235th AAS Meeting (Hawai'i Convention Center, Honolulu, HI)

Activities

- Nov.'21 – **Interviewer & Ambassador, Princeton University Undergraduate Admissions**
Conduct interviews with prospective Princeton University students and produce reports on each interviewee to aid in the undergraduate admissions process. **Total interviews conducted: 12**
- Nov.'21 – **Journal Club Coordinator, Institute of Astronomy, Cambridge**
Mar.'22 Organiser for the bi-weekly undergraduate journal club for final year undergraduates and masters students.
- Jan.'17– **Director & Volunteer, Princeton Envision (Entrepreneurship Club)**
Jan.'18 Assisted in organising, promoting and managing Envision Conference: an annual conference held over 3 days in December that brings 200 competitively selected students from universities across the world together with top researchers, entrepreneurs, and professionals to attend lectures and workshops discussing the disruptive technologies such as artificial intelligence and space travel.
- Sep.'17– **Library Assistant, Princeton University Architecture Library**
Mar.'20 Duties included but were not limited to: circulation services, reserves, shelving, shelf reading, with other duties as directed by the librarian.
- Dec.'16– **Peer Reviewer, Princeton Undergraduate Research Journal**
Sep.'17 Assisted in the peer reviewing process for the Princeton Undergraduate Research Journal (PURJ), Princeton's first peer-reviewed academic journal, highlighting top-quality research performed by Princeton undergraduates across all academic pursuits, including the natural sciences, humanities, engineering, social sciences, and arts.

Awards & Academic Programmes

- Oct.'21 – **STFC PhD Studentship**
Apr.'25 Cambridge, UK
Full funding for 3.5 years to complete PhD at the Institute of Astronomy, University of Cambridge.
- Sep.'16 – **Full-ride Academic Scholarship**
Jun.'20 Princeton University, USA
Various financial aid packages covering all tuition fees and living costs to attend Princeton University in the United States for four years.
- Mar.'15 – **Sutton Trust USA Programme**
May.'16 London, UK
One of 150 selected from 1600 high achieving low-income, first-generation students to receive admissions guidance for applying to the top universities in the US.
- Jul.'15 **UNIQ Summer School**
University of Oxford, UK
One of 36 Sixth Form students selected to attend the Oxford University Physics UNIQ Summer School.