

Dr Adam Dillamore

POSTDOCTORAL RESEARCH ASSISTANT · ASTROPHYSICS

University College London

✉ a.dillamore@ucl.ac.uk

Positions

2024-present **Postdoctoral Research Assistant in Astrophysics.** *University College London*

Education

University of Cambridge (Churchill College)

PHD, ASTRONOMY

• Supervisors: Prof. Vasily Belokurov & Prof. N. Wyn Evans

Cambridge, UK

2021 - 2024

University of Cambridge (Churchill College)

MSCI & BA, NATURAL SCIENCES (1ST)

• Master's supervisors: Prof. Vasily Belokurov, Dr. Andreea S. Font & Prof. Ian G. McCarthy

Cambridge, UK

2017 - 2021

Publications

PUBLISHED

Dynamical streams in the local stellar halo. MNRAS, 2025.

Adam M. Dillamore, Jason L. Sanders, Vasily Belokurov and Hanyuan Zhang

<https://doi.org/10.1093/mnras/staf965>

Radial halo substructure in harmony with the Galactic bar. MNRAS, 2024.

Adam M. Dillamore, Vasily Belokurov and N. Wyn Evans

<https://doi.org/10.1093/mnras/stae1789>

Trojan Globular Clusters: Radial Migration via Trapping in Bar Resonances. ApJL, 2024.

Adam M. Dillamore, Stephanie Monty, Vasily Belokurov and N. Wyn Evans

<https://doi.org/10.3847/2041-8213/ad60c8>

Taking the Milky Way for a spin: disc formation in the ARTEMIS simulations. MNRAS, 2023.

Adam M. Dillamore, Vasily Belokurov, Andrey Kravtsov and Andreea S. Font

<https://doi.org/10.1093/mnras/stad3369>

Stellar halo striations from assumptions of axisymmetry. MNRAS, 2023.

Elliot Y. Davies, **Adam M. Dillamore**, Vasily Belokurov and N. Wyn Evans

<https://doi.org/10.1093/mnras/stad2138>

Stellar halo substructure generated by bar resonances. MNRAS, 2023.

Adam M. Dillamore, Vasily Belokurov, N. Wyn Evans and Elliot Y. Davies

<https://doi.org/10.1093/mnras/stad2136>

Accelerated phase-mixing in the stellar halo due to a rotating bar. MNRAS Letters, 2023.

Elliot Y. Davies, **Adam M. Dillamore**, Eugene Vasiliev and Vasily Belokurov

<https://doi.org/10.1093/mnrasl/slad017>

Ironing the folds: the phase space chevrons of a GSE-like merger as a dark matter subhalo detector. MNRAS, 2023.

Elliot Y. Davies, Eugene Vasiliev, Vasily Belokurov, N. Wyn Evans and **Adam M. Dillamore**

<https://doi.org/10.1093/mnras/stac3581>

A correlation between accreted stellar kinematics and dark-matter halo spin in the ARTEMIS simulations. MNRAS Letters, 2023.

Adam M. Dillamore, Vasily Belokurov, N. Wyn Evans and Andreea S. Font

<https://doi.org/10.1093/mnrasl/slac158>

Energy wrinkles and phase-space folds of the last major merger. MNRAS, 2023.

Vasily Belokurov, Eugene Vasiliev, Alis J. Deason, Sergey E. Koposov, Azadeh Fattahi, **Adam M. Dillamore**, Elliot Y. Davies and Robert J. J. Grand

<https://doi.org/10.1093/mnras/stac3436>

The impact of a massive Sagittarius dSph on GD-1-like streams. MNRAS, 2022.

Adam M. Dillamore, Vasily Belokurov, N. Wyn Evans and Adrian M. Price-Whelan

<https://doi.org/10.1093/mnras/stac2311>

Merger-induced galaxy transformations in the ARTEMIS simulations. MNRAS, 2022.

Adam M. Dillamore, Vasily Belokurov, Andreea S. Font and Ian G. McCarthy

<https://doi.org/10.1093/mnras/stac1038>

Awards and Prizes

2023 **Murdin Prize**, Institute of Astronomy, University of Cambridge

For the best published journal paper produced by a current PhD student.

2021-2025 **STFC PhD Studentship**, Institute of Astronomy, University of Cambridge

Funding for up to 3.5 years to complete a PhD.

2021 **Institute of Astronomy Prize**, Institute of Astronomy, University of Cambridge

Awarded annually to that candidate for Astrophysics in Part III of the Natural Sciences Tripos or a Master of Advanced Study in Astrophysics candidate who has, in the judgement of the Examiners shown the greatest distinction in that examination, provided that his or her work is of sufficient merit.

Conferences and Presentations

INVITED TALKS

Taking the Milky Way for a spin: disc formation in the ARTEMIS simulations

National Astronomy Meeting 2024 (Jul 2024). Hull, UK

CONTRIBUTED TALKS

Dynamical streams in the local stellar halo

National Astronomy Meeting 2025 (Jul 2025). Durham, UK

Tidal tails of Trojan globular clusters

Streams 24 (Aug 2024). Durham, UK

Bar resonances in the highly eccentric stellar halo

The Milky Way Assembly Tale (May 2024). Bologna, Italy

Taking the Milky Way for a spin: disc formation in the ARTEMIS simulations

The Milky Way and its high-redshift progenitors in theory and observations (Dec 2023). Cambridge, UK

Stellar halo substructure generated by bar resonances

Revealed by Gaia: the central halo of the Milky Way (Sep 2023). Cambridge, UK

A stellar halo walks into a bar: creation of substructure

European Astronomical Society Annual Meeting (Jul 2023). Kraków, Poland.

A stellar halo walks into a bar: creation of substructure

Galactic bars: driving and decoding galaxy evolution (Jul 2023). Granada, Spain.

DEPARTMENT TALKS

Creation and destruction of halo substructure by the Galactic bar

Surrey-London Astro Meeting (Apr 2024). UCL, London, UK

The impact of a massive Sagittarius Dwarf Galaxy on stellar streams

IoA Wednesday Seminar (Jan 2023). Institute of Astronomy, University of Cambridge, UK

Merger-induced galaxy transformations in the ARTEMIS simulations

IoA Galaxies Discussion Group (Nov 2021). Institute of Astronomy, University of Cambridge, UK

OTHER CONFERENCES

2022 NYC Gaia DR3 Fête

Flatiron Institute, New York City, USA

Teaching Experience

2021-2024 **Mathematics for Part IB Natural Sciences, Supervisor**

Churchill College, University of Cambridge. Total of ~100 hours from 2021-2023

2021-2024 **Stellar Dynamics and Structure of Galaxies (Part II Astrophysics), Supervisor**

Institute of Astronomy, University of Cambridge. Total of ~30 hours from 2021-2024

Mentoring

2022-2023 **Fred Thompson, Part III student, Institute of Astronomy, University of Cambridge**

I co-supervised a master's project entitled 'Dwarf Galaxy Interactions in the ARTEMIS Simulations.' This is currently being written up for publication.

Software Skills

Python **NumPy, SciPy, Astropy, Matplotlib.**

Agama. *Galactic dynamics package. Includes potential construction, orbit integration, calculation of action-angle variables and distribution function generation.*

pyfalcon. *Python interface for the gravity solver falCON. Used to run N-body simulations.*

emcee. *Python implementation of Markov chain Monte Carlo (MCMC) sampling.*

h5py. *Python interface to HDF5 files. Used to access cosmological simulation snapshots.*

SQL **Gaia Archive.**

EAGLE Database. *Used to access merger trees of the ARTEMIS simulations.*

WSDB (Whole Sky DataBase). *Database server with the data from major sky surveys in SQL accessible form.*

Outreach & Widening Participation

2022 **STEM SMART, Mentor**

A widening participation initiative from the University of Cambridge to provide free, complementary teaching and support to UK students, including those who have experienced educational disadvantage or belong to a group that is statistically less likely to progress to higher education.

2021-2022 **Undergraduate Journal Club, Organiser**

I organised and ran a fortnightly journal club for 3rd year undergraduates and 4th year/master's students at the Institute of Astronomy, University of Cambridge.