Felix D. Priestley

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RESEARCH INTERESTS
- Chemical evolution in star-forming environments
- The formation and destruction of interstellar dust

EMPLOYMENT

Cardiff University, UK **Jul 2019 -**
Post-doctoral research associate

University College London, UK **Oct 2018 - Jun 2019**
Post-doctoral research associate

EDUCATION

University College London, UK **Oct 2015 - Sep 2018**
PhD Astrophysics (awarded Dec 2018)
Thesis Title: Molecule and dust emission at the beginnings and ends of stellar evolution
Supervisor: Prof. Michael Barlow

University College London, UK **Sep 2011 - Jun 2015**
MSci Astrophysics (First class honours)
Dissertation Title: The effects of gravitational collapse on the chemical evolution of prestellar cores
Supervisor: Prof. Serena Viti

PUBLICATION SUMMARY

Refereed papers: 25 first-author, 58 in total
Total citations: 1032, of which 352 from first-author papers

TECHNICAL SKILLS

Programming: Fortran 77/90/Modern (experienced), Python, Linux shell, C/C++
Software: MHD (PHANTOM, AREPO), chemistry (UCLCHEM, UCLPDR), radiative transfer (LIME, RADMC3D), dust emission (DINAMO)

AWARDS

STFC Astronomy Grants Panel Small Award **2025**
Named PDRA on ∼£500k grant; contributed majority of research case to proposal

Jon Darius Memorial Prize **2019**
For outstanding postgraduate research in astrophysics at University College London

TALKS & SEMINARS (* - INVITED)

Stellar Origins 2025 **Sep 2025**
Molecular line tracers of dense gas, 'dense' gas, and the star formation rate

***EAS Annual Meeting 2025** **Jun 2025**
The impact of dynamics on the chemistry of star formation

***Gas in Galaxies workshop** **Jun 2025**
Dense gas and the star formation rate on molecular cloud scales

***Oxford University** **Oct 2024**
Connecting molecular line emission with the star formation rate

EAS Annual Meeting 2024 **Jul 2024**
Understanding complex organic molecules in the earliest phases of star formation

Early Phases of Star Formation 2024 **May 2024**
Molecular tracers of the threshold density for star formation

***Centre for Astrochemical Studies, MPE** **Jan 2024**
Modelling chemical evolution in molecular clouds self-consistently

***ECOGAL collaboration seminar series** **Nov 2023**
Chemical evolution in molecular clouds

***Leiden Observatory** **Nov 2023**
Modelling chemical evolution in molecular clouds self-consistently

Origin and Fate of Dust in Our Universe **Sep 2023**
Empirical constraints on dust destruction in supernova remnants

***AREPO ISM development workshop** **Sep 2023**
Post-processing chemical evolution in hydrodynamical simulations

National Astronomy Meeting 2023 **Jul 2023**
Unveiling the origins of prestellar cores with molecular line emission

The Physics of Star Formation **Jun 2023**
Can prestellar cores be modelled as isolated objects?

***Universidad Complutense Madrid** **Mar 2023**
Testing theories of star formation with molecular line data

***University College London** **Mar 2022**
Probing the importance of magnetic fields in star-forming regions using molecular line emission

***St. Andrews University** **Jan 2022**
What can molecular lines tell us about star formation?

National Astronomy Meeting 2021 **Jul 2021**
The properties of shocked dust in supernova remnants

Magnetic fields and the structure of the filamentary ISM **Jun 2021**
The characteristic widths of magnetised filaments

ISM Scales 2021 **May 2021**
Filament widths in molecular clouds: are they universal, and if so, why?

***Supernovae and Interstellar Dust workshop** **Apr 2021**
Observational constraints on dust destruction in shocks

The Rise of Metals and Dust in Galaxies through Cosmic Time **Oct 2020**
Cold dust emission from the shocked material around supernova remnants

European Week of Astronomy and Space Science 2019 **Jun 2019**
The survival of dust grains in the ejecta of core-collapse supernovae

***Cardiff University** **Apr 2019**
Molecular tracers of star formation mechanisms

The Supernova-Supernova Remnant Connection **Jan 2019**
The pre- and post-shock dust mass in Cassiopeia A

Supervision

Christopher Le Quesne **2026 -**
PhD co-supervisor

Oliver Biggs **2025 -**
PhD co-supervisor

Jimitbhai Panchal **2025**
MSc research project supervisor

Lillian Cai **2025**
Undergraduate research internship; submitted to OJAp

Rees Barnes **2024**
Undergraduate research internship; published in OJAp

Charles Yin **2020**
MSc research project supervisor; published in MNRAS

Teaching

Project supervisor, Cardiff University **2025 -**
Supervision of third-year undergraduate research projects on N-body dynamics

Cardiff Astrophysical Summer School **2025**
Lecture on Linux systems and introduction to command-line programming

Deputy module organiser, Cardiff University **2022 - 2024**
Administrative and teaching duties for undergraduate maths course (∼100 students)

Demonstrator, Cardiff University **2021 - 2024**
Senior lab demonstrator for undergraduate observational astronomy course

Demonstrator, University of London Observatory **2013 - 2017**
Lab demonstrator for undergraduate practical astronomy courses

Community

External reviewer for STFC Astronomy Grants Panel **2023 -**

Referee for ApJ, MNRAS, A&A, Nature Astronomy **2020 -**

Seminar organiser, Cardiff Astronomy group **2019 - 2022, 2025 -**

Cardiff Physics & Astronomy research committee member **2025 -**

AREPO code development team **2023 -**

BISTRO collaboration member **2020 -**

Co-developer of UCLCHEM and UCLPDR codes **2017 -**

Focus group organiser, EPoS 2024 **2024**

SOC for Cosmic Star Formation session, NAM 2021 **2021**

Outreach

Barry Astronomical Society **Apr 2025**
Public talk: Molecules in space: the occasional relevance of astrochemistry

Astronomy on Tap, Cardiff **Jun 2024**
Public talk: A brief history of star formation

Howell's School, Cardiff **Mar 2023**
Public talk: Where do stars come from?

Barry Astronomical Society **Feb 2022**
Public talk: Cores, clouds and filaments: where do stars form, and why?

Royal Society Summer Science Exhibition **Jul 2018**
JWST exhibit demonstrator

Cafe Scientifique **May 2017**
Public talk: Cosmic Dust from Exploding Stars

Referee Contact Information

Prof. Paul Clark
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Prof. Ralf Klessen
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