

ANDREW DAVID SELLEK

PhD Student in Astronomy

Address Institute of Astronomy, University of Cambridge,
Madingley Road, Cambridge CB3 0HA
Telephone (Mob) 07960132196

Nationality British
Web andrewsellek.com
Email ads79@cam.ac.uk

INTERESTS: Protoplanetary Disc Evolution, Dust Dynamics, Photoevaporation

EDUCATION

- 2019 – 2023 **Ph.D. Astronomy**, Institute of Astronomy, University of Cambridge
Thesis Title: “*The Importance of Photoevaporation in the Evolution of Protoplanetary Discs*”
Supervisor: Professor Cathie Clarke
Research Output: Sellek, Booth & Clarke (2020b), Sellek, Clarke & Booth (2021), Sellek, Clarke & Ercolano (2022)
- 2015 – 2019 **BA (Hons) & MSci Natural Sciences**, Trinity College, University of Cambridge
Master’s Thesis Title: “*Planet formation under the influence of external photoevaporation*”
Master’s Thesis Supervisors: Dr Richard Booth & Professor Cathie Clarke
Research Output: Sellek, Booth & Clarke (2020a)
Academic Performance: *1st year: Class 1, Rank 5/637; 2nd year: Class 1, Rank 7/595; 3rd year: Class 1, Rank 1/15, 4th year: Class 1, Rank 1/28*

ACADEMIC AWARDS

- 2019 **Part III Institute of Astronomy Prize**
Department prize awarded for showing the greatest distinction in the final year examinations
- 2018 **Winifred Georgia Holgate Pollard Memorial Prize**
University prize awarded for outstanding performance in the Natural Sciences Tripos
- 2016, 2017, **Senior Scholar of Trinity College**
- 2018 Admitted in recognition of outstanding examination results

RESEARCH TALKS/CONFERENCES/WORKSHOPS

- December 2020 [Dustbusters Mid-Term Meeting \(Contributed Virtual Poster Talk\)](#)
A Dusty Origin for the Correlation Between Protoplanetary Disc Accretion Rates and Dust Masses
- January 2021 IoA Wednesday Seminar (Virtual Talk), University of Cambridge
A Dusty Origin for the Correlation Between Protoplanetary Disc Accretion Rates and Dust Masses
- January 2021 [Origins Seminar \(Virtual Talk\), University of Arizona](#)
The Importance of Photoevaporation in the Evolution of Protoplanetary Discs
- February 2022 IPLU Science Day (Contributed Poster), University of Cambridge
Impact of Photoevaporation on the Composition of Planet Forming Discs
- April 2022 Planet Formation & Exoplanets Journal Club (Talk), University of Arizona
Columns, Cooling, and Chemistry in Models of Photoevaporative Winds
- May 2022 Dustbusters Mid-Term Meeting (Secondment Report), University of Milan
- May 2022 First Dustbusters Summer School (Participant)
- June 2022 Photoevaporation Microworkshop (3 Contributed Talks), University of Cambridge
Columns, cooling & chemistry - what determines the driving radiation of photoevaporative winds?

Getting ready for JWST: modelling the Ne II emission from disc winds using self-similar models
Compositions of externally photoevaporating discs and their winds

July 2022

The Dynamic & Chemical Connection Workshop (Invited Participant)

PUBLIC TALKS/OUTREACH

2016 – Present Cambridge Hands-On Science Volunteer Demonstrator & Committee Member
2018 – 2020 Open Evening Volunteer, Institute of Astronomy, University of Cambridge
January 2022 Open Evening Public Talk, Institute of Astronomy, University of Cambridge
March 2022 Contributed Talk at Trinity College Science Society Annual Symposium
March 2019 Contributed Talk at Trinity College Science Society Annual Symposium
November 2018 Cambridge University Astronomy Society Student Talks Night

COMPUTING COMPETENCIES

Programming Languages: C (Basic), C++ (Basic), Python (Advanced), Fortran (Intermediate)
Scientific Codes: FARGO3D (Hydrodynamics), PLUTO (Hydrodynamics), PRIZMO (Thermochemistry), MOCASSIN (Radiative Transfer)
Other: git, Bash, Slurm, LaTeX, HTML, CSS, Javascript, MATLAB

TEACHING

2019 – 2022 Supervision of First Year Natural Sciences Students: Mathematical Methods I/II/III
2020 – 2022 Supervision of Third Year Astronomy Students: Principles of Quantum Mechanics
2020 – 2022 Supervision of Third Year Astronomy Students: Astrophysical Fluid Dynamics

SERVICE


2022 – 2023 Institute of Astronomy Teaching Committee Postgraduate Student Representative

PUBLICATIONS


6 peer-reviewed papers (4 as first author). Total citations: 68, h-index 4 (NASA ADS, July 2022)

For an up-to-date list, [see my ADS profile](#)

6 **Sellek A. D.**, Clarke C. J., Ercolano, B. 2022 MNRAS 514 535

The importance of X-ray frequency in driving photoevaporative winds 


5 Qiao L., Haworth T. J., **Sellek A. D.**, Ali A. A., 2022 MNRAS 512 3788

The evolution of protoplanetary discs in star formation and feedback simulations 


4 **Sellek A. D.**, Clarke C. J., Booth R. A., 2021 MNRAS 506 1

The general applicability of self-similar solutions for thermal disc winds 


3 Haworth, T. J., Kim, J. S., Winter, A. J., Hines, D. C., Clarke, C. J., **Sellek, A. D.**, Ballabio, G., Stapelfeldt, K. R., 2015 MNRAS 501 3502

Proplyds in the flame nebula NGC 2024 

2 **Sellek A. D.**, Booth R. A., Clarke C. J., 2020 MNRAS 498 2845

A dusty origin for the correlation between protoplanetary disc accretion rates and dust masses 

1 **Sellek A. D.**, Booth R. A., Clarke C. J., 2020 MNRAS 492 1279

The evolution of dust in discs influenced by external photoevaporation 

REFERENCES

Professor Cathie Clarke Professor of Theoretical Astrophysics
Institute of Astronomy, University of Cambridge, Madingley Road,
Cambridge CB3 0HA
cclarke@ast.cam.ac.uk