MOLLY WELLS

EDUCATION

Max Planck Institute for Astronomy, DE 2021   **PhD in Astronomy**

University of Kent, UK 2016   **Physics with Astrophysics MPhys (Hons)**

RESEARCH INTERESTS

Star formation is my primary area of interest. Looking particularly at their formation and evolution and with particular experience with statistical lifetimes, evolutionary sequences, visual classification and accretion flows.

RESEARCH EXPERIENCE

September 2020 – May 2021   **Masters Research Project**

I completed a project titled 'Modelling the star forming efficiency of dense clumps' under the supervision of Dr James Urquhart. This work used Monte Carlo simulations of clusters to look at the relationship between initial clump mass and star formation efficiency. This relationship was then used along with the ATLASGAL sample to calculate an estimate for the Galactic Star Formation Rate.

May – September 2019   **Summer Internship**

In summer 2019, I completed a paid Internship at the University of Kent with Dr James Urquhart. The project for the internship was titled 'Determining the statistical lifetimes of high mass stars'. During this project, I classified over 3000 stellar objects, from the ATLASGAL catalogue, using multiwavelength data from HiGAL and GLIMPSE. Python was used for graphical analysis of the classification groups, and the final report was written in LaTeX via Overleaf; this work is presently being written up for publication. This internship greatly expanded my understanding about star formation and the classification processes and broadened my skillset by introducing me to data basing via SequelPro.

SKILLS

- Excellent time management, planning and organisational skills due to managing my workload, societies, sports clubs and committee.
- Work well as part of a team such as completing group project work and collaborating with other members of societies to run events.
- Great communication developed through work experience and being a student rep and peer mentor.
- Able to learn and adapt quickly, shown through learning the classification process and new Python skills during a summer internship.
- Technical Skills; LaTeX, SequelPro, Python, MATLAB and Excel.

ROLES AND RESPONSIBILITES

- Ambassador: I am a student ambassador for my school which includes helping with open days, promotional material and outreach.
- Student Rep: Currently the course representative for my stage, being the main connection between staff and students for any issues either party has; I also held this role last year.
- Peer Mentor: I have been a mentor for students in foundation year and first year Physics courses for the past two years and I am continuing with this role this year.
- Chair of Committee: I am currently the chair of the organising committee for PLANCKS national Physics competition being hosted by the University of Kent February 2021.

PUBLICATIONS

- J S Urquhart, C Figura, J R Cross, **M R A Wells,** T J T Moore, D J Eden, S E Ragan, A R Pettitt, A Duarte-Cabral, D Colombo, F Schuller, T Csengeri, M Mattern, H Beuther, K M Menten, F Wyrowski, L D Anderson, P J Barnes, M T Beltrán, S J Billington, L Bronfman, A Giannetti, J Kainulainen, J Kauffmann, M-Y Lee, S Leurini, S-N X Medina, F M Montenegro, M Riener, A J Rigby, A Sánchez-Monge, P Schilke, E Schisano, A Traficante, M Wienen, **SEDIGISM-ATLASGAL: Dense Gas Fraction and Star Formation Efficiency Across the Galactic Disk**, Monthly Notices of the Royal Astronomical Society, https://doi.org/10.1093/mnras/staa2512

AWARDS

- Physics, Astronomy, Space Science and Astrophysics Award for Student Engagement – University of Kent 2021