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Education

Jeremiah Horrocks Institute, University of Central Lancashire, Preston UK — *Sep. 2020 – Present*
Astronomy and Astrophysics PhD in Observational Star Formation
Moses Holden Fellow

B.S. Santa Clara University (SCU), Santa Clara, CA (**GPA: 3.90**) — *Sep. 2016 – June 2020*
College of Arts and Sciences:
Physics Major (**GPA: 3.96**), Political Science Minor
SCU Honors Program Graduate

Reed College, Portland, OR — *Aug. 2015 – May 2016*
Reed Young Scholars Program
Physics Major (GPA: 3.70)

Research Experience

Santa Clara University Department of Physics — *June 2018 – Sep. 2018*
Mentor: Dr. Guy Ramon
Calculating Cumulants for Noise Spectroscopy with Qubits

- Investigated environmental noise for qubits using cumulant expansions
- Used ***Mathematica*** to find general equations to calculate cumulants for control pulses of any sequence and length
- Coded equations on ***MATLAB*** so that cumulants can be calculated for unique sequences

NASA Ames Research Center, SOFIA Science Center — *June 2019 – Sep. 2020*
Mentors: Dr. B-G Andersson, Dr. Archana Soam
Studying the magnetic field in the starless core L183 — *June 2019 – Sep. 2019*

- Reduced sub-millimeter polarimetry observations from **JCMT** using ***Starlink*** software
- Used ***Python*** to analyze reduced data
- Calculated magnetic field strength to investigate role of magnetic field in star formation

Determining excitation temperature across ridge in IC63 — *June 2020 – Sep. 2020*

- Worked with reduced **SOFIA/EXES** observations of pure-rotational H_2 transitions
- Created H_2 excitation diagrams to determine temperatures in the IC 63 PDR across a ridge
- **Mentored undergraduate students** in their research projects

Telescope Experience

- Visited the James Clerk Maxwell Telescope (JCMT) as a guest observer
- Member of BISTRO (**B**-Fields **I**n **ST**ar-Forming **R**egion **O**bservations) large program at the JCMT
- Member of the team developing the next-generation MKID camera on JCMT
- Submitted proposals to JCMT as PI that have been accepted and awarded telescope time
- Submitted a proposal to ALMA as PI
- Reviewed and graded 10 ALMA proposals as part of their proposal requirement
- Used SALT as part of guaranteed time awarded to UCLan

- Proficient with SOFIA/HAWC+ and EXES, *Planck*, *Herschel*, JWST, JCMT and ALMA data

Posters and Talks

- Talk at **National Astronomical Meeting**, Cardiff, Wales, July 2023. The Magnetic Field across a Stellar Evolutionary Gradient in an Isolated Filament.
- Poster at **National Astronomical Meeting**, Cardiff, Wales, July 2023. Unveiling the Cloud-Scale Magnetic Field of the Galactic Center
- Talk at **JCMT Users Meeting**, Universities College London, June 2023. Preliminary Results from BISTRO-3: Observing Magnetic Fields along Size and Age Scales
- Poster at **National Astronomical Meeting**, Warwick, UK, July 2022. *First results from BISTRO-3: The Complex Magnetic Field in L43*
- Seminar at **Eddington Astronomical Society**, Kendal, UK, January 2023. *Observations of intragalactic magnetic fields across spatial scales in the early stages of star formation*
- Seminar at the **James Clerk Maxwell Telescope/East Asian Observatory**, Hawaii, USA, September 2022. *An Overview of BISTRO Science and a Look Ahead at BISTRO-3*
- Talk at the **SOFIA School 2022**: Understanding mid and far-IR data, February 04, 2022. *A Rotational Ladder in IC63*
- Recorded talk at the **SOFIA Science Center Workshop**: Magnetic Fields and the Structure of the Filamentary Interstellar Medium, June 2021. *Multi-wavelength analysis of the magnetic field in rho Ophiuchus A using SOFIA/HAWC+ and BISTRO/POL-2*
- Seminar at the **SOFIA Science Center/NASA Ames**, California, USA, September 2019. *Sub-parsec-scale measurement of magnetic field structure and strength in a starless core L183*

Honors and Awards

- Phi Beta Kappa, Sigma Pi Sigma and Sigma Xi honor societies member
- John B. Drahmann Prize (Santa Clara University)
    - "awarded to the graduating physics major who exemplifies the hard-working and earnest values of John B. Drahmann, longtime dean of sciences and professor of physics."
- Santa Clara University Distinguished Student Award (January 2017)
- Academic Deans' List (2018-19 Academic Year)
- Fox Fellowship Recipient (Summer 2018 & 2019)
    - Physics Department undergraduate research funding award

Employment

- Universities Space Research Association *June 2020 – Sep. 2020*
    - 3 month contract to continue previous work and start new projects

- University of Central Lancashire *Sep. 2020 – Present*
    - **Grader** for various undergraduate Physics and Astrophysics modules
    - **Lab tutor** for 1st year physics labs (4 hrs/week)
    - **Lab instructor** for 3rd year physics lab (3 hrs/week)
    - **Astronomy outreach worker** at Alston Observatory

- Santa Clara Physics Department *Apr. 2018 – June 2020*
    - **Graded** homework each quarter for one or two introductory physics classes (class sizes: 40-60 students; 3-6 hours per week)
    - **Led review sessions** for first year students before final exams for introductory physics classes (8 hours each quarter)

- Santa Clara University Drahmann Tutoring Center *Sep. 2018 – June 2020*
    - **Tutored** students in physics both individually (1-on-1, appointment format) and ran drop-in tutoring sessions for large groups of students (6-12 hours per week)

General Skills

- Partook in the ALMA proposal review process – reviewing and grading 10 peer's proposals
- Proficiency in Python, MATLAB, Mathematica and LaTeX with some experience in C++ and Mathcad
- Participated in 50+ undergraduate lab experiments using various mechanical and electrical lab equipment
- Have delivered 10+ science talks to students aged 5-16 as part of the outreach program at UCLan
- Organized the summer postgraduate seminar series for two years at UCLan