CONOR NALLY

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PROJECTS

Truncated Stellar Outskirts of Messier33 2019-2020

- Masters thesis (20 weeks) focused on the warped morphology of the outer disc of M33.This primarily involved profiling the radial stellar distribution of different aged stars from the resolved *Pan Andromeda Archaeological Survey* data catalogue.
- There are plans for this study to be continued and published with my project supervisor Prof. Annette Ferguson.

Protostellar Jets in the Carina Nebula 2019

- This project involved analysis of spectral data cubes to locate polar outflows from protostars embedded within the column structures present inside the Carina nebula.

Perseus Twin Open Star Clusters 2018-2019

- Observations and photometric analysis of stellar content within clusters, determining various properties; distance, age, radial distribution, velocities, IMF and ILF.
- Project undertaken as part of a group in fourth year of university.
- All data was self gathered using the IFA 20" optical telescope.

Mapping Dust, Mass, SFR, Metallicity in Galaxies 2018-2019

- Senior Honours project (10 weeks).
- Establishing parameter correlations in spatially resolved low redshift galaxies from the SAMI survey.

Infrared Variable Stars in Messier32 2018

- Searching for AGB stars in the compact elliptical galaxy M32, using pointspread-function photometry with DAOPhot2 and Astropy.
- This study has been compiled into a paper and is in the peer review process with MNRAS.

Software Based Projects

- Astronomical data reduction and catalogue manipulation package with Astropy and Photutils.
- libcfitsio based fits image alignment and viewer utilities.
- Design and simulated subatomic particle detector using Geant4.
- Smoothed particle hydrodynamical simulations.
- Connecting ∼200 computers' sockets to form pseudo-super computer.
- Weather type predictions using Machine learning
- Fourier transform based image correction.

TECHNICAL SKILLS

Python	●●●●●
C	●●●●●
C++	●●●●○
Shell Script	●●●●○
Fortran	●●●○○
Not Quite C (NQC)	●●●○○

- Proficient in use of Liunx OS for software development, systems administration and personal use.
- Process automation using Unix tools such as GNU Make, Shell script, sed/awk
- Comfortable using astronomical aids including Astropy, libcfitsio, iraf, SAOImage DS9.
- Version control using Git.

EDUCATION

Astrophysics MPhys

University of Edinburgh

2020 Edinburgh

- First Class Integrated Masters

EXPERIENCE

Carnegie Vacation Scholarship

Carnegie Trust

2019

- I applied for and received a research grant from the Carnegie Trust. As part of this grant I attended a speaking event with fellow award recipients and the funding body officials - during which I won the award for best presentation.
- This helped me develop my communicative abilities and provided experience in applying for funding.

Research Internship - UKATC

Project Science Group

2019 Royal Observatory, Edinburgh

- This summer project funded by the aforementioned Carnegie Trust grant.
- Astronomical data analysis under supervision of: Dr. Pamela Klaassen and Dr. Megan Reiter.

Research Internship - UKATC

Project Science Group

2018 Royal Observatory, Edinburgh

- This summer project was funded by the physics department after winning a school-wide competition.
- Astronomical data analysis under supervision of: Dr. Olivia Jones.

Outdoor Activity Instructor

Club Pyrene Colonies

2015 – Present Cerdanya Valley, Catalunya

- Annual summer work in the Pyrenean mountains as an instructor in outdoor activity summer school. Employed to teach Catalan teenagers English while guiding mountain bike rides, walks and other outdoor activities.
- It has helped me to work as part of a team, communicate through a language barrier and manage large groups in remote environments.
- I am using this opportunity to teach myself Spanish.

INTERESTS

- General mountaineering including rock and ice climbing, fell running and ski touring.
- 10+ years of mountain bike racing, including cross country, cyclocross and enduro, with multiple national series victories. I am a sponsored racer for www.hardie-bikes.com bike shop.
- I have exhibited and sold pieces of origami, silver smithed jewellery and stained glass. I can also work with steel and I am trained in leather working.

REFERENCES

- Prof. Annette Ferguson
- University of Edinburgh, Institute for Astronomy
- @ ferguson@roe.ac.uk

- Dr. Olivia Jones
- Science and Technology Facility Council
- @ olivia.jones@stfc.ac.uk

- Dr. Pamela Klaassen
- Science and Technology Facility Council
- @ pamela.klaassen@stfc.ac.uk

- Dr. Megan Reiter
- Science and Technology Facility Council
- @ megan.reiter@stfc.ac.uk

Labourer

Various Self Employed Companies

2015–Present Fife and Edinburgh, Scotland

- Part time employment as a labourer for a number self-employed gardening and landscaping companies, where I learned trade techniques and gained experience in task prioritisation and reliability.
- I am currently involved in a project to construct a cob roundhouse.

Volunteer Coach

British Cycling

2012–2018

- Qualified coach under British Cycling, and have voluntarily coached and help manage a successful youth cycling team for 6 years. As well as appeared as a guest coach in multiple national racing schools.