STORM COLLOMS

+447429514042 ◇ 9/1 Bernard Terrace, Edinburgh, EH8 9NU, UK.
they/them ◇ stormcolloms@gmail.com ◇ www2.ph.ed.ac.uk/ s1709423

EDUCATION

University of Edinburgh, Candidate for MPhys in Astrophysics Sept 2017-May 2022

- Predicted to graduate with a first class degree.
- Completed a year abroad at Waseda University 2019-2020.

Hyndland Secondary School: 3 Advanced Highers at grade A, 6 Highers at grade A Aug 2011-June 2017

RESEARCH EXPERIENCE

LIGO SURF 2021: The Search for Sub-threshold Lensed Gravitational Waves June-August 2021
In-person research at California University of Technology, 10 weeks
Supervisors: Alan Weinstein and Alvin Li

- Refined the GstLAL search pipeline for sub-threshold lensed gravitational waves, introducing a modification to target the search according to the sky location of a super-threshold target event.
- Results need to tested against simulated lensed events to ensure the modification effectively boosts the ranking of lensed images.
- Delivered regular presentations and wrote interim and final reports, while learning about other areas of gravitational wave physics and astrophysics in weekly talks and through my fellow interns' projects.
- Continuing development and working towards publishing a paper.

MPhys Project: The Statistical Nature of Quasar Variability Academic year 2021/22, Ongoing

- Aiming to simulate statistical models of quasar variability using shot noise to compare with real data and help constrain the statistical parameters and investigate the time reversibility of accretion disks.

Senior Honours Project: Searching for a Planetary Mass Object Companion Academic year 2020/21
Supervisor: Beth Biller

- Photometrically analysed HST and Keck telescope data to determine if a candidate brown dwarf was a true companion to a known brown dwarf.
- Supplemented photometric analysis with astrometry across the two epochs, as well as a discussion of the spectral fit of the data.
- Found that the candidate companion was not likely to be a true brown dwarf companion, due to its bluer colour despite being dimmer, and unaligned proper motion to the primary brown dwarf.

Group Project: Determining the Properties of a Transiting Exoplanet Academic year 2020/21
Supervisors: Philip Best and Colin Snodgrass

- Observed the planetary transit of HAT-P 32b using the PIRATE robotic telescope in order to to fit a light curve with MCMC methods and perform spectral analysis to determine the properties of the system.
- Supplementing this to with analysis of radial-velocity data, the properties of the planetary mass, period, inclination angle, semi-major axis and eccentricity to within 1 sigma, agreeing with the literature that this was a Hot Jupiter type planet.
- Prioritised tasks in a group setting and took initiative to set goals and keep the project on schedule.

UTRIP 2019: The Effect of Planet-Planet Tidal Forces on 2-planet Scattering Events June-August 2021
University of Tokyo, 6 weeks
Supervisors: Michiko Fujii and Alessandro Alberto Trani

- Simulated n-body systems to investigate whether tidal forces between 2 jupiter-sized planets had an impact on the formation of the planetary system, as motivated by the observed high proportion of Hot-Jupiter planets.

- Found that the planet-planet tidal forces resulted in significantly more collisions, meaning that these forces could have a significant effect on the outcome of p-p scattering events.

SKILLS

Languages	Python, HTML, CSS, English (native), Japanese (conversational)
Software	DS9, IRAF, GAIA
Operating Systems	Windows and Linux

AWARDS

UKSEDS Diversity & Inclusion Champion of the Year 2019

Pre-Honours Certificate of Merit 2017 and 2018

Hyndland Secondary School Dux 2016

EXPERIENCE

- **Co-leader of School of Physics and Astronomy's LGBTQ+ network 2021-present** organising events and maintaining a welcoming community environment.
- **Edinburgh University Women in STEM Society, Physics Representative 2018/19** co-created and hosted a series of academic talks, promoting the work of female physicists at Edinburgh; worked as part of a larger committee to host a 24-hour hackathon, encouraging the participation of STEM students with little to no coding experience.