

# EMILY HATT

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**PhD student working in the field of Asteroseismology. Currently aiding in the development of an automated detection pipeline for the upcoming Plato mission. Previous experience with stellar modelling and seismology, working with Modules for Experiments in Stellar Astrophysics (MESA) and Asteroseismic Inference on a Massive Scale (AIMS).**

## EDUCATION

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**University of Birmingham, MSci Physics + Astrophysics**

*Sep 2016 - Jul 2020*

Result: 1st Class Honours

Key Modules [Marks] - Structure in the Universe [80], Observational Astronomy [82], The Life and Death of Stars [87], Evolution of Cosmic Structure [85], Observational Cosmology [79], Asteroseismology and Exoplanets [71].

**The Sixth Form College Farnborough**

*Sep 2014 - Jul 2016*

A-levels: Physics (A), Mathematics (A\*), Geography (A), Fine Art (A\*).

## PROFESSIONAL EXPERIENCE

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**(MSci project) A Study of the Open Cluster NGC 6819; The Power and Limitations of Asteroseismology with Individual Mode Frequencies**

*Sep 2019 - Apr 2020*

Studied 24 targets on the red giant branch in the open cluster NGC 6819 using individual frequencies to determine the masses, radii, ages and distance moduli. Comparisons are made with the mean density from scaling relations, finding the scaling relations systematically underestimate mean densities.

**(BSc group project) Asteroseismology of Red Giants using TESS**

*Jan - Oct 2019*

Worked with a team of  $\approx 20$  students to demonstrate the asteroseismic potential of TESS observations, managing the team of stellar modellers. Calculated offsets between global seismic parameters determined from modelled mode frequencies and scaling relations.

**College of Physics and Astronomy, University of Birmingham  
Student Ambassador**

*Nov 2018 - Present*

Part time employee as a representative of the Physics department. The work entails helping with prospective students and their guardians during department open days. The team runs guided tours, lunches and laboratory viewings.

**Post-Graduate Teaching Assistant**

*Sep 2020 - Present*

Help to run mathematics tutorials and coding classes, answering student's questions and assisting where they are stuck.

## INTERNSHIP

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**College of Physics and Astronomy, University of Birmingham  
Administrations Demonstrations**

*Jul 2019 - Aug 2019*

Worked independently over the summer to produce new displays and documentation to go alongside

demonstrations used during laboratory tours. Expanded ability to convey the physical basis for demos in an accessible manner.

Designed new interactive demonstrations for prospective students to use on offer holder days.

## **VOLUNTEER WORK**

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### **Monday Night Club**

*Oct 2018 - Present*

Volunteer committee member at a social club for adults with disabilities. During the session responsibilities include the comfort and safety of our members. The team also works to attract new volunteers so that the club continues beyond graduation day.

## **SKILLS**

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Demonstrated leadership abilities as subgroup manager for group studies module.

Adaptability exemplified through the range of subjects studied at A-level; effective work with different minded individuals and environments was required.

Strong communicator, taking two modules in communication skills.

Advanced problem solving and numerical skills.

Experience working primarily with Python.