

# EVA DURÁN CAMACHO

*Researcher in astrophysics with a passion for star formation and evolution*

Cardiff Hub for Astrophysics  
Research and Technology  
(CHART)  
Cardiff University

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## Education

- 2020–present **PhD, Astrophysics**, *Cardiff University*, Cardiff, United Kingdom.  
Star formation in the Milky Way - observing numerical models using AREPO
- Supervisors : Dr. Ana Duarte Cabral & Dr. Paul Clark
- 2019–2020 : **MASt in Astrophysics**, *University of Cambridge*, Cambridge, United Kingdom.
- 2015–2019 : **Grado en Física**, *Universidad Autónoma*, Madrid, Spain.

## Courses

- July 2021 : **International Summer School on the Interstellar Medium of Galaxies, from the Epoch of Reionization to the Milky Way**, Virtual Edition.
- October 2020 : **An Introduction to Linux with Command Line**, *Cardiff University*, Cardiff, United Kingdom.  
: How to use Linux command line interface effectively by ARCCA
- October 2020 : **Supercomputing for Beginners**, *Cardiff University*, Cardiff, United Kingdom.  
: Accessing systems, using SLURM, loading software, file transfer and optimising resources, by ARCCA
- November 2020 : **Slurm Advanced Topics**, *Cardiff University*, Cardiff, United Kingdom.  
2020 : Additional material to interface with HPC more effectively, by ARCCA
- November 2020 : **Advanced use of Hawk the Supercomputer**, *Cardiff University*, Cardiff, United Kingdom.  
2020 : Additional material for developers and frequent users by ARCCA
- November 2020 : **Introduction to Parallel Programming OpenMP**, *Cardiff University*, Cardiff, United Kingdom.  
2020 : OpenMP and shared memory parallelism by ARCCA
- November 2020 : **Introduction to Parallel Programming using MPI**, *Cardiff University*, Cardiff, United Kingdom.  
2020 : MPI and distributed memory parallelism by ARCCA
- March-May 2020 : **Astronomical Programming**, *Universidad Autónoma*, Madrid, Spain.  
2020 : Programming skills for astronomy using both Python and Matlab. Imparted by Prof. Enrique Velasco

## Conferences & Talks

- January 2021: **UKRI STFC Introductory Course in Astronomy for New Research Students**, *Armagh Observatory and Planetarium*, Virtual Edition , Talk.
- June 2021: **Conference for Astronomy and Physics Students (CAPS '21)**, *University of Birmingham*, Virtual Edition , Poster.
- November 2021: **10th IRAM 30-meter School on Milimeter Astronomy**, *Institut de Radioastronomie Milimétrique*, Virtual Edition , Attendee.

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## Research Projects

- 2020–2022: **The Milky Way structure: observations and simulations**, *Cardiff University*.  
Numerical simulations of Milky Way type Galaxies using the state-of-the-art moving mesh code AREPO. Studying the structure of our Galaxy and zooming into smaller regions where star formation processes can be studied. Statistical comparison of our models with observations.
- Supervisors : Dr. Ana Duarte Cabral, Dr. Paul Clark
- Summer 2020: **Evolution of T Tauri Stars**, *University of Cambridge*.  
2020: Studying the effects of magnetic fields and rotation on the evolution of the early type of stars T Tauri using the STARS code created at the University of Cambridge
- Advisors : Prof. Christopher Tout
- 2019–2020 : **Searching for extremely metal-poor stars with GAIA**, *University of Cambridge*, Cambridge, United Kingdom.  
MASt research project. Based on the usage of Gaia as a database to find extremely metal-poor stars in the Galactic Halo. Artificial Neural Networks were the main technique applied in the study
- Advisors : Dr. Giorgia Busso, Dr. Francesca D'Angeli and Prof. Mike Irwin
- 2018–2019 : **Intermediate-mass T Tauri stars**, *Universidad Autónoma*, Madrid, Spain.  
BA research project. Study and comparison of intermediate-mass T Tauri and its counterparts the Ae/Be stars based on their spectra and position in the Hertzsprung-Russell diagram.
- Advisors : Prof. Gwendolyn Meeus
- 2018–2019 : **Observations and data analysis of a point source**, *Universidad Autónoma*, Madrid, Spain.  
BA research project. Observations of the star AE UMA at Calar Alto Observatory, Almería (Spain). Data reduction and analysis.
- Advisors : Dr. Yago Ascasibar

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## Working Experience

- July–August 2018 : **Researcher**, *University of Cambridge*, Cambridge, United Kingdom.  
2018 : Internship at the Institute of Astronomy. I worked on the evolution of T Tauri stars using the STARS code. Supervisor: Christopher Tout
- July–August 2018 : **Internship**, *Real Observatorio de la Armada*, San Fernando, Cádiz, Spain.  
2018 : Full-time internship at the Time Section of the Real Observatorio de la Armada (ROA). I learnt about radiation and official procedures to send and receive signals, how the signal is treated and reduced, and how to work with many different devices such as a GPS satellites. Supervisor: Dr. Héctor Esteban Pinillos
- January–June 2018 : **Laboratory Technician**, *Universidad Autónoma*, Madrid, Spain.  
2018 : Laboratory technician at the Condensed Matter Department. Worked for a PhD student extracting graphene samples from graphite
- November 2016–May 2019 : **Tutoring**, Madrid, Spain.  
High school students. Subjects: physics, mathematics and chemistry

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## Teaching Assistantship

- 2020–2021: **The Physics Mentor Project**, Mentor, Cardiff, United Kingdom.
- 2020–2022 : **Environmental Physics, Introduction to Astrophysics, Computational Physics, Atomic and Nuclear Physics, Optics**, *1st–3rd year Physics*, Marking and Demonstrating, Cardiff University.

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## Academic Achievements & Recognitions

- 2015–2019 : **Distinctions**, *Physics Degree*, Universidad Autónoma, Madrid, Spain.  
Distinction in a series of subjects: Análisis I (1st year), Electromagnetismo I (2nd year), Métodos Matemáticos Avanzados and Electrodinámica Clásica (3rd year), Física Atómica y Molecular and Física del Cosmos (4th year)

May 2015 : **Honors**, *Bachillerato*, IES Fuerte de Cortadura, Cádiz, Spain.  
Honors in Bachillerato, as best academic record of my High School promotion

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## Computational skills

Programming: Python, Matlab, C++

Documents: LaTeX, Adobe, Word, Excel, PowerPoint

Plotting: DataStudio, TopCat, SciDavis, CARTA, SAOImageDS9

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## Languages

1st **Spanish**, *Native*.

2nd **English**, *Cambridge Advanced Certificate (2014) IELTS Academic (Grade: 8.0/9.0) (2019)* .

3rd **French**, *Four years at high school, equivalent to a B1 level*.

4th **Italian**, *Currently undertaking the course Italian for Beginners - Stage A at Cardiff University*.