



# Mario Roco Moraleda

## *Astrophysicist*

### PERSONAL DETAILS

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*Birth* August 23, 1999 (Madrid, Spain)  
*Address* Geismar Landstrasse 43, 37083 Göttingen, Germany  
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*E-Mail* mario-roco99@hotmail.com

### EDUCATION

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**Master's Program in Astrophysics** September 2021 - September 2022  
*Complutense University of Madrid*

- Average grade: 8.85 over 10
- Master's Degree Final Project (TFM): *Investigation of Solar Energetic Particle Events with Solar Orbiter*, under supervision of Dr. Nils Janitzek. Regular work visits to ESA/ESAC.

**Bachelor's Degree in Physics** September 2017 - July 2021  
*Complutense University of Madrid*

- Fundamental physics module, Astrophysics itinerary.
- Average grade: 7.94 over 10
- Two honors in Calculus and Electromagnetism II.
- Bachelor's Degree Final Project (TFG): *Astroparticle Physics*.

**English certificate** July 19, 2024  
*IELTS*  
IELTS Academic, band 7.

### WORK EXPERIENCE

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**Research Personnel in Solar and Heliospheric Astrophysics** February 2023-July 2024  
*Space Research Group - University of Alcalá (SRG-UAH)*

Scientific exploitation and calibration of data from the EPD instrument onboard the Solar Orbiter mission and other heliospheric missions. Perform support tasks in the mission planning, operations and EPD data management. Publication of results in international

scientific journals. Participate in outreach tasks related to the EPD project. Supervisor: Raúl Gómez Herrero (raul.gomezh@uah.es), Associate Professor of the Department of Physics and Mathematics.

### **Internship**

February-June 2021; January  
- June 2022

#### *Observatorio Astronómico Nacional (OAN)*

Analysis and self-calibration of data cubes of binary systems recorded by ALMA interferometer. I have also acquired knowledge on the operation of long and very long baseline interferometry and on stars in post-AGB stage. Supervisor: Javier Alcolea Jiménez (j.alcolea@oan.es).

### **Astronomical outreach and arrange of events**

June 2022-August 2024

#### *ASTROAFICION SL*

Part-time contract in the company ASTROAFICION SL, where we arrange astronomical activities and workshops with telescopes and planetarium all over Spain.

## **OTHER USEFUL INFORMATION**

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- *Paper*: Participating in four scientific papers related to my previous job in UAH, one of them is submitted. All papers related to solar astrophysics.
- *Seminars*: I attended the conferences American Geophysical Union (AGU) Fall Meeting, on December 2023, in San Francisco (California, USA); European Geosciences Union (EGU), on April 2024, in Vienna (Austria); and VIII Reunión de Física Solar y Heliosférica (REFSH), at the Instituto Astrofísico de Andalucía (IAA), in July 2023. In them I presented my works as conferences and posters.
- *Extracurricular scientific activities and outreach*: I have contributed to talks / workshops about science, experiments and, specially, astronomy for CSIC, for Complutense University of Madrid, in *Cursos de Verano El Escorial* in RCUMCE, with ASAAF association, during Science Week of Madrid's community and in television (Castilla La Mancha TV). Winner of a contest about optics videos.
- *Programming languages*: Python, Matlab and R. I have two years of experience in Python for solar and heliospheric data analysis.
- *Software*: JHelioviewer, SAOImageDS9, ALADIN, Gildas, Latex, Canva, Excel, SciDavis, PowerPoint, Word, Photoshop, Kdenlive, VideoPad and others.
- *Operating systems*: Linux and Windows.
- *Languages*: English (C1) and Spanish (native).
- *Driver's license*: Category B license since February 2018.
- *Association*: I was materials coordinator of the astronomical association ASAAF and representative of the astrophotography sub-group ASAAF-Messier.
- *Private tutoring*: Private tutoring to Compulsory Secondary Education and high school students during the last four years.