

Carmen San Nicolas Martinez

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Education

Instituto de Astrofísica e Ciências do Espaço (IA), Faculdade de Ciências da Universidade do Porto (FCUP) *Sept 2024 – Current*

PhD in Astronomy

- **Thesis title:** Refining the radial velocity method to uncover other Earths.
- **Supervisors:** Dr. Nuno C. Santos and Dr. Vardan Zh. Adibekyan
- **Submission:** Proposed date - September 2027
- **Research methods:** Extreme Precise Radial Velocity through identification of individual spectral lines that are more and less affected by stellar activity.

Universidad Complutense de Madrid *Sept 2021 – Feb 2023*

Masters degree in Astrophysics

- **Dissertation:** Life Tolerability Index of known exoplanets. Application to rocky planets.
- **Supervisor:** Dr. Patricia Cruz
- **Relevant courses:** Stellar atmospheres, Astronomical instrumentation, Solar System and exoplanets, Cold stars and substellar objects, Experimental techniques in astrophysics

Universidad Complutense de Madrid

Sept 2016 – July 2021

Degree in Physics

- **Dissertation:** Characterization of exoplanetary systems
- **Supervisors:** Dr. David Montes
- **Relevant courses:** Stellar astrophysics, Observational astronomy, Statistical physics, Astrophysics, Cosmology and general relativity

Alfonso X el Sabio High School

Sept 2014 – June 2016

International Baccalaureate

Experience

Science communicator

European Space

Nubalo Studios

Astronomy Center

Oct 2022 - May 2023

- Conduct STEAM workshops and educational experiments on space sciences for students aged 7 to 18.
- Design and create new experiences on space science (using Virtual Reality, Augmented Reality, 3D printing, robotics, holograms, multimedia content, museumization, etc.).
- Participate in various events throughout the year: Researchers' Night, Science Week, Expoastronomica.
- Adapt the workshops and experiences for primary, secondary, and university students, as well as for other types of audiences.

Intern in Cooperation Through Education in Science and Astronomy Research (CESAR)

European Space

European Space Agency

Astronomy Center

Feb 2022 - Aug 2022

- Review of the current CESAR project website, focusing on online scientific challenges.
- Analyze the challenges to be taught in a more diverse and inclusive way.
- Develop a new scientific challenge, based on astrophysics and astrobiology. Ensure the new challenge is developed with an inclusivity perspective.
- Transfer all previous and new scientific challenges to an e-learning platform.
- Participate in seminars for primary and secondary school teachers about ESA projects and astrophysics.

Papers

Santos et al. 2025, Messenger, 194, 21
PoET: the Paranal solar ESPRESSO Telescope

Working Groups & Consortia

COST Action CA22133 - The birth of solar systems (PLANETS) February 2025 - Current
Member of *Emerging habitable environments and Dissemination, public engagement, and outreach* Working Groups

PLANetary Transits and Oscillations of stars (PLATO) Mission October 2025 - Current
Member of *Stellar Variability* Working Group

Paranal solar ESPRESSO Telescope (PoET) March 2025 - Current
Member of Science Team

Conferences and Seminars

XXXV Encontro Nacional de Astronomia e Astrofísica September 2025
Poster - Towards Achieving cm/s RV Precision with a New Line-by-Line Code
<https://indico.global/event/13951/page/4709-detailed-scientific-program>

2025 Sagan Summer Workshop July 2025
Poster - A novel line-by-line RV code: Paving the way for Earth-like planet discovery
https://nexsci.caltech.edu/workshop/2025/posters/Poster_CarmenSanNicolasMartinez_7.pdf

Extreme Precise Radial Velocity (EPRV) 6 July 2025
Poster - The Path to 10 cm/s RV Precision: a new line-by-line code
<https://www.iastro.pt/research/conferences/eprv6/>

PLATO ESP2025 June 2025
Attendee - remote

Workshop on wavelength calibration for high-resolution spectrographs May 2025
Attendee - remote

2nd PoET Workshop October 2024
Speaker - Refining the radial velocity method to uncover other Earths
<https://www.iastro.pt/research/conferences/poet2024/index.html?opt=programme>

XXXIV Encontro Nacional de Astronomia e Astrofísica September 2024
Speaker - Refining the radial velocity method to uncover other Earths
<https://ena-xxiv.github.io/program>

Webinar Women's Voices - Intergenerational Dialogues February 2021
Speaker in round table
Voces de Mujer - Diálogos Internacionales — YouTube

Organization

Exoplanets 6 December 2024 - Current
Local Organizing Committee
<https://www.iastro.pt/research/conferences/exoplanets6/>

Extreme Precise Radial Velocity (EPRV) 6 June 2024 - July 2025
Local Organizing Committee
<https://www.iastro.pt/research/conferences/eprv6/>

Cookie seminars (Astrophysics Center of the University of Porto) March 2024 - Current
Organizer
<https://www.iastro.pt/research/cookieSeminars.html>

Courses

Bayesian Statistics: From Concept to Data Analysis <i>UC Santa Cruz</i> https://coursera.org/verify/UUXRLN5LIP1J	<i>Online</i> <i>January - February 2026</i>
Researcher Management and Leadership Training <i>University of Colorado</i> https://coursera.org/verify/MVMT1A61JJ5W	<i>Online</i> <i>January - February 2026</i>
Structuring Machine Learning Projects <i>DeepLearning.AI</i> https://coursera.org/share/0b098f44eb82357d56f4857a027a484d	<i>Online</i> <i>January 2026</i>
Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization <i>DeepLearning.AI</i> https://coursera.org/share/939545f63c6e163f5647ab36c413b702	<i>Online</i> <i>January 2026</i>
Neural Networks and Deep Learning <i>DeepLearning.AI</i> https://coursera.org/share/3c7af669719e2bef8cdca4ed6c7f78de	<i>Online</i> <i>January 2026</i>
2025 ORP Proposal Writing School <i>European Southern Observatory (ESO)</i>	<i>Online</i> <i>February - March 2025</i>
4th Advanced School on Exoplanetary Science <i>University of Salerno, Astronomical Observatory of Rome, National Institute of Astrophysics</i>	<i>Vietri sul Mare, Italy</i> <i>May 2023</i>
ASTROTWINCOLO <i>University of Antioquia and Leiden Observatory</i>	<i>Online</i> <i>Nov 2021 - Dec 2021</i>
XXI SVO School <i>Spanish Virtual Observatory</i>	<i>Online</i> <i>Oct 2021 - Dec 2021</i>
Latex course <i>Universidad Complutense de Madrid</i>	<i>Online</i> <i>May 2021</i>
Space Master class <i>Center for Applied Educational Technologies</i>	<i>Korolyov, Russia</i> <i>Feb 2016</i>

Technical Skills

Programming Language: Python, R, Fortran

Operating Systems: Linux, Windows

Data reduction and Analysis Software: Python, ESOReflex Molecfit, TelFit, ARES, Linesearcher

Languages: Spanish (mother tongue), English (C1), Portuguese (B2)