

# Curriculum Vitae: Silvia Martínez-Núñez

## Education

- 1999-2005 PhD in Physics with European Honours. University of Valencia
- 1993-1998 MSc in Physics. University of Valencia

## PhD Thesis

- Title *X-Gamma Ray Imaging of High Mass X-ray Binaries with INTEGRAL*
- Supervisors Dr. Víctor Reglero, Dr. Pablo Reig & Dr. Peter Kretschmar

## Positions held

- 2016-now Post-doc Fellow. Manager of the Athena Community Office. Institute of Physics of Cantabria (IFCA)
- 2015-2016 External collaborator at the X-ray astronomy group. University of Alicante
- 2014 Maternity leave
- 2011-2013 Post-doc Fellow. X-Ray Astronomy Group. University of Alicante
- 2008-2010 Post-doc Fellow (Juan de la Cierva). Astronomy Group. University of Alicante
- 2007 Maternity leave
- 2004-2007 Research Scientist. Astronomy & Space Science Group. University of Valencia
- 2001-2002 Research Asistant. Danish Space Research Institute
- 2000-2004 PhD Fellowship. Astronomy & Space Science Group. University of Valencia

## Research Experience

### Participation in R+D projects

- 2019-2021 Athena, fase A2/B/C. Participación científica en la misión y desarrollo del instrumento X-IFU (RTI2018-096686-B-C21).  
P.I.: Dr. María Teresa Ceballos & Dr. Silvia Mateos. Funding Agency: Spanish R+D
- 2017-2019 Athena, Phase A/B1. Scientific participation and development of the X-IFU instrument (ESP2016-76683).  
P.I.: Dr. María Teresa Ceballos. Funding Agency: Spanish R+D
- 2012-2014 Unified View of the Stellar Winds in Massive Star Binaries.  
P.I.: Dr. Martínez-Núñez. Funding Agency: International Space Science Institute
- 2011-2013 From INTEGRAL to IXO: X-ray Binaries and active stars (AYA2010-15431).  
P.I.: Dr. Torrejón. Funding Agency: Spanish R+D
- 2009-2010 Multiplicity and evolution of massive stars(AYA2008-06166-C03-03  
P.I.: Dr. Negueruela. Funding Agency: Spanish R+D
- 2007-2010 1st Science with GTC(CSD2006-00070).  
P.I.: Dr.Rodríguez-Espinosa. Funding Agency: Spanish R+D
- 2007-2008 Massive stars: birth and evolution (AYA2005-00095).  
P.I.:Dr. Negueruela. Funding Agency: Spanish R+D
- 2005-2007 4 Pi Gamma Ray Imaging: Integral + ASIM at the ISS (ESP2005-07714-C03).  
P.I.:Dr. Reglero. Funding Agency: Spanish R+D

2005-2007 Megaball (ESP2002-12386-E).  
P.I.:Dr. Reglero. Funding Agency: Spanish R+D

## List of Publications (ORCID:0000-0002-5134-4191)

### In refereed journals

Complete list at ADS

### Proceedings

Complete list at ADS

## Conferences with oral contribution

- 2020 EAS 2020: SS 07: Clumpy environment around accreting compact objects: from stellar-mass accretors to AGNs (virtual).
  - Flow inhomogeneities in supergiant wind-fed systems: observational diagnostics and results.
- 2019 Spanish X-ray Astronomy 2019: present, future, synergies. Alicante. Spain.
  - Diving into the whirlpool understanding accretion in High-Mass X-ray Binaries with Vela X-1.
- 2019 Spanish X-ray Astronomy 2019: present, future, synergies. Alicante. Spain.
  - Athena Community Office.
- 2018 Exploring the Hot and Energetic Universe: The second scientific conference dedicated to the Athena X-ray observatory. Palermo. Italy.
  - Athena Community Office.
- 2018 IAUS 346 High Mass X-ray Binaries: illuminating the passage from massive binaries to merging compact objects. Wien. Austria.
  - Our current picture of the physics of wind-fed massive X-ray binary systems.
- 2018 Exploring the Hot and Energetic Universe: The second scientific conference dedicated to the Athena X-ray observatory. Palermo. Italy.
  - Athena Community Office.
- 2017 EWASS 2017. Prague. Czeck Republic.
  - A revision of the current knowledge on wind-fed massive X-ray binaries.
- 2012 The 9th INTEGRAL Workshop An INTEGRAL view of the high-energy sky (the first 10 years). Paris. France
  - The structure of hot-star winds revealed through XMM-Newton observations of Vela X-1.
- 2010 High Energy Phenomena in Massive Stars. ASP Conference Series. Jaen. Spain
  - The X-Ray Behavior of Supergiant Fast X-Ray Transients: An INTEGRAL View.
- 2008 The 7th INTEGRAL Workshop. An INTEGRAL view of compact objects. Copenhagen. Denmark
  - Long-term monitoring of Supergiant Fast X-ray Transients.
- 2007 VII Scientific Meeting of the Spanish Astronomical Society. Barcelona. Spain
  - High Mass X-ray Binaries seen by INTEGRAL.

## Observational experience

- 2010 Near IR Spectroscopy. Gran Telescope Canarias. Service mode. La Palma Observatory. Two proposals as PI:
  - Accurate distances to obscured supergiant X-ray binaries (87-GTC30/10A)
  - Understanding Cygnus X-3 II (174-GTC69/10A)
- 2009 IR Spectroscopy. William Herschel Telescope. La Palma Observatory.  
PI: Understanding Cygnus X-3 (135-WHT45/09A)

- 2001 IR Photometry. Carlos Sánchez Telescope. Teide Observatory
- 2000 Strömgren Fotometry. Calar Alto Observatory
- 1999 Strömgren Fotometry. National Astronomy Observatory. Calar Alto

## Software development experience

- 2002-2007 Member of JEM-X SDAST (Science Data Analysis Team).  
Main responsibilities:
  - Development and maintenance of ISDC JEM-X Scripts
  - Development of IBAS (INTEGRAL Burst Alert System) JEM-X software
  - JEM-X responsible at ISDC (INTEGRAL Science Data Centre) during Performance and Verification Phase to test and validate the JEM-X analysis software

## Stays at International Research Centres

- 2010 Istituto Nazionale di Astrofisica. Rome. 1 month
- 2002 till 2007 INTEGRAL Science Data Centre. Versoix. Short stays (one to four weeks)
  - 2002 Centre d'Etude Spatiale des Rayonnements. Toulouse. 3 weeks
- 2001-2002 Danish Space Research Institute. Copenhagen. 1 year

## Training and Workshops

- 2019 Athena SIXTE Workshp. IFCA. Santander (Spain)
- 2008 Multi-wavelength Astronomy and the Virtual Observatory Workshop. ESAC. Madrid (Spain)
- 2006 How to design, observe and analyse a GTC/OSIRIS observation. Granada (Spain)
- 2006 6th ESAC SAS Workshop. Madrid (Spain)
- 2002 Mission Concept and Payload Design in X-ray and X-ray Astronomy. International Advanced School Leonardo da Vinci. Bologna (Italy)
- 2000 Historical Development of modern Cosmology. Universidad Internacional Menendez y Pelayo. Valencia (Spain)
- 2000 Observing with INTEGRAL. INTEGRAL Spring School. Les Diablerets (Switzerland)
- 2000 High Energy Astrophysics. 30th SAAS-FEE Advanced Course. Les Diablerets (Switzerland)

## Teaching Experience

From 2009-2012, I taught Fundamental Physics to undergraduate students at the Polytechnic University College of Alicante University. The taught courses were addressed to students of the first grade of a variety of Engineering degrees from Civil Engineering to Computing Engineering.

## Outreach Experience

- 2020-2021 Coordinating "Chatea con una astrónoma" together Adriana de Lorenzo-Cáceres Rodríguez and Julia Suso.
- 2017-now Participating in Outreach and dissemination activities for IFCA and ACO: Expanding Science, Open Days, Science Week, European Researchers Night and International Day of Women and Girls in Science
- 2018 Participation in the program: "La Universidad en tu barrio" of Cantabria University.
- 2012 Ten Years Observing the Violent Universe with INTEGRAL: Public talk within 12th Conference on Dissemination of Astronomy organised by the X-ray Astronomy Group of Alicante University. Addressed to general public

- 2009 Member of Spanish Outreach Working Group on Astronomical Activities for People with Special Needs:  
Responsible for outreach activities adapted to people with cognitive impairments  
Co-author of "The Life of Stars" book addressed to mentally disabled people, available at [https://issuu.com/pereblay/docs/estrellas\\_rxs](https://issuu.com/pereblay/docs/estrellas_rxs)
- 2009 The Colours of the Universe: Public talk within 9th Conference on Dissemination of Astronomy organised by X-ray Astronomy Group of Alicante University. Addressed to general public

## Memberships

- Member of the Spanish Astronomical Society (SEA)
- 2016-2021 Member of Women and Astronomy commission of SEA
- Member of European Astronomical Society
- Member of the Royal Spanish Physics Society and its women's group specialized in physics (GEMF)
- Member of the International Astronomical Union

## Computer skills

- Advanced  $\LaTeX$ , OpenOffice, Linux, Unix, X-ray specific software tools (XMM-Newton, INTEGRAL, XSPEC and FTOOLS)
- Intermediate Python

## Languages

- Spanish **Mothertongue**
- English **C1 level**