

Contact

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Honors and Awards

ESA Comet Interceptor Science
Working Group Member, 2022
Max Planck Research Group Leader,
2013 (€750k)
Royal Society Newton Fellowship,
2008 (£100k)
Royal Society APEX Award 2017 for
interdisciplinary research (£100k)
Asteroid "10694 Lacerda" named after
me, 2017
Principal Investigator of Large Program
at the European Southern
Observatory 2014
Leverhulme Research Program Grant
2013 (£150k)
Michael West Research Fellowship,
2010 (£200k)
Portuguese Science Foundation
Postdoc Fellowship, 2005 (€50k)
2003 Harvard-Smithsonian SAO
Predoctoral Fellowship
Most Innovative Learning Experience
nomination, Queen's University
Belfast Education Awards, 2019
Most Inspirational Teaching
nomination, Queen's University
Belfast Education Awards, 2018

Education

PhD in Astronomy, 2005,
Leiden University
MSc in Physics, 2000,
Lisbon University, PT

Publications

15 first author refereed papers
52 co-authored refereed papers
191 other publications
[Link to list online](#)

Languages

Native: Portuguese
Fluent: English
Good: Dutch, Italian
Basic: French, Spanish, German
Learning: Danish

Profile

I am a dynamic and creative person with a strong background in astrophysics research, a passion for numbers and computers, and a knack for teaching.

With strong analytical problem-solving skills and extensive experience in scientific computing, I am eager to find directly impactful applications of my knowledge.

My track record includes state-of-the-art research in astrophysics, data analysis, and simulation, and an extensive list of peer-reviewed publications. I enjoy working in diverse teams and have mentored PhD students to become accomplished scientists.

I thrive on continuous learning, embracing new challenges and technologies. I am committed to bridging the gap between scientific research and practical outcomes, driving progress for society at large.

I am passionate about communicating the beauty and value of science to wider society.



Work Experience

Scientific Program Coordinator

2024–Present

NL Space Campus, the Netherlands

My role involves overseeing the development and implementation of scientific initiatives, fostering collaboration among stakeholders, and facilitating the translation of research into practical applications within the space sector. My focus lies in:

- Developing and overseeing scientific research programs aimed at advancing space technology and its terrestrial applications;
- Connecting scientific research, ideas and talent with potential technological applications and business opportunities;
- Setting up a new [ESA Phi-Lab](#) to achieve the goals above.

Scientific Advisor & ESA Technology Broker

2022–Present

Instituto Pedro Nunes, Coimbra, Portugal

I advise on the translation of space-related knowledge and technology into practical solutions. My focus lies in:

- Assisting the development of innovative products and solutions through the use of ESA space data and technology;
- Encouraging interdisciplinary collaboration;
- Designing events that boost and inspire innovation.

Founder, Teacher and Baker at Miolo

2019–2021

Deventer, the Netherlands

During the pandemic I founded Miolo, a one-person business involving teaching, and baking and delivering sourdough bread. This involved registering at the KvK, equipping a small bakery, designing branding, creating a website and a business strategy. I tutored students from the Netherlands, Portugal, Germany, the UK and the US via Zoom on Maths, Physics and Astronomy.

Programming Languages and Computing Tools

Capable: Python (core, numpy, pandas, statsmodels, scikit-learn, matplotlib, blender, astropy), VS Code, Mathematica, git, *nix and tools (zsh, vim, sed, awk), LLMs, Obsidian
 Used: R, C, Fortran, emacs, IDL, MATLAB.
 Learning: rust, APL

Professional Service

Science Review Panelist for the NASA Discovery space mission program (2010, 2015, 2019) and the ROSES grants (2008).
 Reviewer for Science, Icarus, Astrophysics Journal and Letters, Astronomical Journal, Astronomy & Astrophysics and Monthly Notices of the Royal Astronomical Society.

Selected Invited Talks

AOGS 2014 Annual Meeting, Sapporo, Japan; Jul 2014; Title: *"TNOs Are Cool", A Herschel Space Observatory Survey of the Outer Solar System*.
 UK National Astronomy Meeting, Manchester, UK; Mar 2012; Title: *A Herschel Survey of the trans-Neptunian Belt*.
 ESO-Chile Workshop on Solar System & Minor Bodies, Santiago; Aug 2011; Title: *Extreme and Extremely Tilted Objects*.
 European Planetary Science Congress, Rome; Sep 2010; Title: *Haumea as seen by the Herschel Space Observatory*.
 RAS Meeting, Burlington House, London; Nov 2009; Title: *The Dark Red Spot on Dwarf Planet Haumea*.
 Conference "Binaries in the Solar System", Steamboat Springs, CO; Aug 2007. Title: *The abundance of contact binaries in the Kuiper belt*.

Assistant professor (lecturer) of Astrophysics 2016–2019

Queen's University Belfast, UK

In addition to continuing my research (see below), I was coordinator of Mathematics for 1st year Physics students, which I also taught, together with Laboratory Physics and Scientific Computation. My teaching was held in high regard by the students, who nominated me for Most Inspiring and Most Innovative lecturer in consecutive years. During this period, my research achievements were recognized with the honor of having an asteroid named after me by the IAU: [\(10694\) Lacerda](#).

I teamed up with Marilina Cesario, a medievalist studying 10th century Anglo-Saxon manuscripts, and received a Royal Society APEX award to study comets and how medieval scholars saw and interpreted them. This led to extensive outreach initiatives including a [video by the BBC](#).

Research Group Leader

2013–2016

Max Planck Institute for Solar System Research, Göttingen, Germany

I used a €750k budget to form and coordinate a research group that continued to address my science goals. Some of my tasks were:

- Designing a research program combining data from the ESA Rosetta mission and telescope observations with n-body simulations to simulate the formation of comets;
- Supervising Rosita Kokotanekova who successfully defended her PhD dissertation and went on to become an ESO Fellow. Her work on comet rotation and surface evolution is state-of-the-art;
- Supervising Sebastian Lorek, who received a cum laude PhD on numerical simulations of planetesimal formation and went on to become a scientist at Globe Institute in Copenhagen;
- Organizing open-minded interdisciplinary seminars, inviting world-class scientists to come to Göttingen.

Postdoctoral Researcher

2005–2013

Various locations

Following my PhD, I conducted scientific research at a number of institutes in different countries. In reverse chronological order:

- Michael West Fellow, Queen's University Belfast, UK (2011-2013);
- Royal Society Newton Fellow, QUB, UK (2009-2011);
- Postdoctoral Fellow, Institute for Astronomy, Honolulu, USA (2006-2009);
- FCT Postdoc Fellow, Coimbra University, Portugal (2005-2006).

At QUB, I designed and coordinated the Astrophysics department Outreach Program, which included a Lecture Series for which I invited, e.g., Reinhard Genzel (black holes), Lucie Green (the Sun), Rob Jedicke (killer asteroids), João Magueijo (cosmology).

My research deals with the physical properties of small icy bodies (e.g. comets), and aims to learn how planetesimals formed 4.5 billion years ago. It involves data gathering using telescopes and automated surveys, and its analysis, interpretation and simulation.