

Instituto de Astrofísica e Ciências do Espaço
Universidade de Lisboa
Portugal

✉ Andre.Silva@astro.up.pt

🌐 <https://kamuish.github.io/content/>

🔑 0000-0003-4920-738X

🔊 Kamuish

Ciencia ID: 2416-D5A6-DFA5

Date of birth: 1st of May 1996

Andre M. Silva

Short bio

I am André Silva, a post-doctoral researcher from Instituto de [Astrofísica e Ciências do Espaço](#) (Portugal). My work is focused on two different fields: instrumentation and exoplanetary science. I am currently working in the PoET solar telescope, in the development of the software that will be used during observations. Complementary to that work, I am also working in the extraction of precise radial velocities, through the development of novel algorithms for such purpose. In the past 3 years I was one of the two instructors of an advanced course provided by CAUP. Furthermore, I also lectured the practical classes of a MsC-level course in Departamento de Física e Astronomia da Faculdade de Ciências da Universidade do Porto.

Education

- 2019–2024 **Doctor's Degree in Astronomy**, *Programa doutoral em Astronomia*, Faculdade de Ciências da Universidade do Porto
Thesis title: *A new paradigm for the estimation of precise stellar radial velocities.*
- 2019–2024 **M.Sc. Degree**, *Mestrado Integrado em Engenharia Física*, Faculdade de Ciências da Universidade do Porto
Thesis title: *An expansion to the CHEOPS mission official pipeline.*

Experience

- Aug 2024–now **Post-doctoral researcher**, *FCiências.ID*, Faculdade de Ciências da Universidade de Lisboa
Contributing to the development of the PoET solar telescope, under the *FIERCE* ERC project. Focused on the development of the observational software.
- Feb–Sept 2024 **Invited assistant**, *Departamento de Física e Astronomia*, Faculdade de Ciências da Universidade do Porto
Invited assistant to teach the practical classes of one MsC-level unit on Bayesian data analysis.
- Jul–Sep 2017 **Summer Internship**, *Follow Inspiration*, Porto
Development of software for analysing number of people in the field of view of the cameras mounted on their robots.
- Feb–Jun 2017 **Extra curricular Internship (PEEC)**, *IFIMUP*, Faculdade de Ciências da Universidade do Porto
Development of software to automatically collect and analyse data from triboelectric materials.

Feb–Jun 2016 **Extra curricular Internship (PEEC)**, IFIMUP, Faculdade de Ciências da Universidade do Porto
Development of a device to test the performance of *triboelectric* materials.

Teaching experience

- Feb - Aug 24 **Teaching the practical classes of the course *Data Analysis in Physics and Astronomy* [AST/FIS4002](#)**, department of Physics and Astronomy from the Faculty of Sciences, U. Porto
- March 2023 **Organizer/instructor in a internal python course for astronomers**, Centro de Astrofísica e Ciências do Espaço, U. Porto
- March 2022 **Organizer/instructor in a internal python course for astronomers**, Centro de Astrofísica e Ciências do Espaço, U. Porto
- March 2021 **Organizer/instructor in a internal python course for astronomers**, Centro de Astrofísica e Ciências do Espaço, U. Porto

Grants

- Aug 2024–now **Post-doctoral fellowship**, Software development for the PoET telescope, funded by the FIERCE ERC project, grant number [101052347](#), Faculdade de Ciências da Universidade de Lisboa
- 2021–2024 **PhD fellowship**, Fundação para a Ciência e Tecnologia (FCT): "A new paradigm for the estimation of precise stellar radial velocities: towards the development of an innovative data analysis software", Ref: 2020.05387.BD
- Feb 2023 **FLAD grant**, Fund travel to the EPRV V conference in Santa Bárbara, California, PAPERS 4 USA, reference 2023/052
- Nov - Dec 2019 **Research fellowship**, field of Planetary Systems at Instituto de Astrofísica e Ciências do Espaço, Ref: IA2019-17-BIM
- Apr - Sept 2019 **Scientific Initiation Studenship**, field of Computacional Astrophysics at Instituto de Astrofísica e Ciências do Espaço, Ref: IA2019-04-BIC

Talks

Conferences

- 23 Oct 2024 **PoET observations**, [PoET workshop 2](#), Porto, Portugal
- 18 Jul 2023 **Approaches for RV extraction: s-BART and the first steps towards a fully Bayesian model**, [TOE-III](#), Porto, Portugal
- 28 Mar 2023 **Towards a fully Bayesian RV extraction model**, [EPRV5](#), Santa Bárbara, California
- 09 Feb 2023 **sBART application to the ESPRESSO WG1 targets**, *ESPRESSO science team meeting*, Lanzarote, Canary islands

- 03 May 2022 **s-BART: a semi-Bayesian implementation of template matching for precise Radial Velocities**, *Exoplanets IV*, EPRV splinter, Online
- 11 Nov 2021 **A new paradigm for the estimation of precise stellar radial velocities: towards the development of an innovative data analysis software**, *IA-ON8*, Online

Seminars

- May 2024 **Towards an improvement in the characterisation of stellar radial velocities**, *ESA research seminar*, European Space Agency (Madrid)
- Mar 2024 **The (radial) velocity of stars - detection and characterisation of exoplanets**, *Café com Física*, Departamento de Física da Universidade de Coimbra

Supervision

Undergraduate projects

- Nov 22 - Feb 23 **Co-supervisor**, *undergraduate project of Pedro Afonso*, A new activity proxy for finding other Earths, U. Porto
- Feb - Jun 20 **Co-supervisor**, *undergraduate project of Mafalda Matos*, An analysis of the performance of CHEOPS mission pipelines: the DRP and archi, U. Porto

Other projects

- Mar - Jul 24 **Co-supervisor**, *Research Initiation Fellowship (BII) of Diogo Marques (ref CIAAUP-03/2023-BII)*, Development of a tool for the normalization of stellar spectra: application to ESPRESSO data, CAUP
- Feb - Jul 24 **Co-supervisor**, *extra-curricular project (PEEC) of João Cunha*, Exoplanet detection through a new model for the correction of instrumental effects, U. Porto
- Feb - Jul 24 **Co-supervisor**, *extra-curricular project (PEEC) of Carla Henriques*, Development of a GUI interface for the exploitation of data from the s-BART pipeline, U. Porto
- Feb - Jul 24 **Co-supervisor**, *extra-curricular project (PEEC) of Martim Paiva*, Solar-to-sky coordinate conversion for PoET operations, U. Porto

Research outputs

First-author Papers

- 2 André M. Silva et al, 2022 - 'A Novel Framework for Semi-Bayesian Radial Velocities through Template Matching', *Astronomy & Astrophysics* (DOI: [10.1051/0004-6361/202142262](https://doi.org/10.1051/0004-6361/202142262))
- 1 André M. Silva et al, 2020 - 'Archi: Pipeline for Light Curve Extraction of CHEOPS Background Stars', *Monthly Notices of the Royal Astronomical Society* (DOI: [10.1093/mnras/staa1443](https://doi.org/10.1093/mnras/staa1443))

Co-authored Papers

- 14 Suárez Mascareño et al, 2024 - 'TESS and ESPRESSO Discover a Super-Earth and a Mini-Neptune Orbiting the K-dwarf TOI-238', *Astronomy & Astrophysics* ([DOI: 10.1051/0004-6361/202348958](#))
- 13 Palethorpe et al, 2024 - 'Confronting Compositional Confusion through the Characterisation of the Sub-Neptune Orbiting HD 77946', *Monthly Notices of the Royal Astronomical Society* ([DOI: 10.1093/mnras/stae707](#))
- 12 Campante et al, 2024 - 'Expanding the Frontiers of Cool-Dwarf Asteroseismology with ESPRESSO: Detection of Solar-like Oscillations in the K5 Dwarf ϵ Indi', *Astronomy & Astrophysics* ([DOI: 10.1051/0004-6361/202449197](#))
- 11 Wehbé et al, 2024 - 'Implementation of a Seeing Measurement Device for the PoET Solar Telescope', *Proc. SPIE , Ground-Based and Airborne Instrumentation for Astronomy X* ([DOI: 10.1117/12.3017481](#))
- 10 Leite et al, 2024 - 'PoET, the Paranal Solar ESPRESSO Telescope: A Spatially Resolved Sun in a High Resolution Spectrograph', *Proc. SPIE , Ground-Based and Airborne Instrumentation for Astronomy X* ([DOI: 10.1117/12.3016776](#))
- 9 De Beurs et al, 2024 - 'Characterization of K2-167 b and CALM, a New Stellar Activity Mitigation Method', *Monthly Notices of the Royal Astronomical Society* ([DOI: 10.1093/mnras/stae207](#))
- 8 Passegger et al, 2024 - 'The Compact Multi-Planet System GJ 9827 Revisited with ESPRESSO', *Astronomy & Astrophysics* ([DOI: 10.1051/0004-6361/202348592](#))
- 7 Castro-González et al, 2023 - 'An Unusually Low-Density Super-Earth Transiting the Bright Early-Type M-dwarf GJ 1018 (TOI-244)', *Astronomy & Astrophysics* ([DOI: 10.1051/0004-6361/202346550](#))
- 6 Balsalobre-Ruza et al, 2023 - 'KOBESim: A Bayesian Observing Strategy Algorithm for Planet Detection in Radial Velocity Blind-Search Surveys', *Astronomy & Astrophysics* ([DOI: 10.1051/0004-6361/202243938](#))
- 5 Mascareño et al, 2023 - 'Two Temperate Earth-mass Planets Orbiting the Nearby Star GJ1002', *Astronomy & Astrophysics* ([DOI: 10.1051/0004-6361/202244991](#))
- 4 Allart et al, 2022 - 'Automatic Model-Based Telluric Correction for the ESPRESSO Data Reduction Software: Model Description and Application to Radial Velocity Computation', *Astronomy & Astrophysics* ([DOI: 10.1051/0004-6361/202243629](#))
- 3 Lillo-Box et al, 2022 - 'The KOBE Experiment: K-dwarfs Orbited By Habitable Exoplanets: Project Goals, Target Selection, and Stellar Characterization', *Astronomy & Astrophysics* ([DOI: 10.1051/0004-6361/202243629](#))

10.1051/0004-6361/202243898)

2 Faria et al, 2022 - 'A Candidate Short-Period Sub-Earth Orbiting Proxima Centauri', Astronomy & Astrophysics ([DOI: 10.1051/0004-6361/202142337](#))

1 Lillo-Box et al, 2021 - 'HD22496b: The First ESPRESSO Standalone Planet Discovery', Astronomy & Astrophysics ([DOI: 10.1051/0004-6361/202141714](#))

Posters

7 'The Paranal solar ESPRESSO Telescope - towards a resolved view of the Sun', Leiden, Exoplanets 5, 2024-06-16/2024-06-21

6 'A fully-Bayesian model for RV extraction', Leiden, Exoplanets 5, 2024-06-16/2024-06-21

5 'A Bayesian template matching approach applied to HARPS : towards the improvement of the RV precision', Online, European Astronomical Society Annual meeting 2021, 2021-06-28/2021-07-02

4 'A semi-Bayesian implementation of template matching for precise Radial Velocities', Online, Statistical challenges in Modern astronomy VII, 2021-07-07/2021-07-10

3 'A semi-Bayesian implementation of template matching for precise Radial Velocities', Online, Encontro Ciência 21, 2021-07-28/2021-07-30

2 'A Bayesian approach to precise Radial Velocities', Online, 30th Encontro Nacional de Astronomia e Astrofísica , 2020-09-09/2020-09-11

1 'ARCHI: pipeline for light curve extraction of CHEOPS background stars', Online, Europlanet Science Congress 2020, 2020-06-21/2020-07-09

Outreach

2024 **Ignite session**, *À procura por outra Terra*, Armamar, Portugal

Aug 23 **Night sky guide**, *Observatório do Lago Alqueva*, Portugal

2023 **Ignite session**, *À procura por outra Terra* , [Torres Vedras](#); [Ílhavo](#), Portugal

2023 **Espaço vai à Escola 23**, *Descoberta de outra Terra - deteção de planetas fora do sistema solar*, Online, 5 schools; In person: 5 schools, Portugal

2022 **Espaço vai à Escola 22**, *Descoberta de outra Terra - deteção de planetas fora do sistema solar*, Online, 3 schools, Portugal

Miscellaneous Experience

Organizing committees

- 2024 **LoC**, *Part of the local organization committee of the EPRV6 conference*, Porto, Portugal
- 2019 **LoC**, *Part of the local organization committee of the Porto MW-Gaia WG3 Workshop: Exoplanets in the era of Gaia*, Porto, Portugal