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Academic background

JAN 2018	Ph.D. in ASTRONOMY Advisors: Nuno C. SANTOS and Pedro FIGUEIRA Dissertation: “Exoplanet detection in metal-poor stars”	University of Porto
JUL 2013	M.Sc. in ASTRONOMY Advisors: Mário J. P. F. G. MONTEIRO and Margarida S. CUNHA Dissertation: “Asteroseismology of 16 Cyg A and B”	University of Porto
JUL 2011	B.Sc. in PHYSICS	University of Lisbon

Research Experience

2018 - present Post-doc Researcher
Institute of Astrophysics and Space Sciences, Porto, Portugal

Publications

Full list in [ADS](#) 25 refereed papers. 254 citations
4 first-author papers. 28 citations, 1 self-citations

Faria, J. P. and 3 other authors (2018), kima: Exoplanet detection in radial velocities, *Journal of Open Source Software* **3.26**, 487.

Faria, J. P. and 16 other authors (2016), The HARPS search for southern extra-solar planets XL. Searching for Neptunes around metal-poor stars, *A&A* **589**, A25.

Faria, J. P. and 6 other authors (2016), Uncovering the planets and stellar activity of CoRoT-7 using only radial velocities, *A&A* **588**, A31.

Other publications

Barros, S. C. C. and **J. P. Faria** (2018), Tutorial: Detecting Planetary Transits and Radial-Velocity Signals, *Asteroseismology and Exoplanets: Listening to the Stars and Searching for New Worlds* **49**, 267.

Delgado Mena, E., 10 authors, and **J. P. Faria** (2018), Planets around evolved intermediate-mass stars in open clusters II. Are there really planets around IC4651No9122, NGC2423No3 and NGC4349No127?, *accepted*, arXiv:1807.09608.

Lillo-Box, J., 9 authors, **J. P. Faria**, and 2 other authors (2018), The TROY project: II. Multi-technique constraints on exotrojans in nine planetary systems, *accepted*, arXiv:1807.00773.

Martins, J. H. C., 4 authors, **J. P. Faria**, and 2 other authors (2018), Recovering the colour-dependent albedo of exoplanets with high-resolution spectroscopy: from ESPRESSO to the ELT, *MNRAS* **478**, 5240–5262.

Nelson, Benjamin E., 4 authors, **J. P. Faria**, and 2 other authors (2018), Quantifying the Evidence for a Planet in Radial Velocity Data, *subm.* arXiv:1806.04683.

- Santerne, A., 21 authors, **J. P. Faria**, and 23 other authors (2018), An Earth-sized exoplanet with a Mercury-like composition, *Nature Astronomy* 2, 393–400.
- Santos, N. C. and **J. P. Faria** (2018), Exoplanetary Science: An Overview, *Asteroseismology and Exoplanets: Listening to the Stars and Searching for New Worlds* 49, 165.
- Serrano, L. M., 3 authors, **J. P. Faria**, and 3 other authors (2018), Distinguishing the albedo of exoplanets from stellar activity, *A&A* 611, A8.
- Barros, S. C. C., 25 authors, **J. P. Faria**, and 21 other authors (2017), Precise masses for the transiting planetary system HD 106315 with HARPS, *A&A* 608, A25.
- Lillo-Box, J., 6 authors, and **J. P. Faria** (2017), The TROY project: Searching for co-orbital bodies to known planets. I. Project goals and first results from archival radial velocity, *accepted to A&A*.
- Oshagh, M., 5 authors, **J. P. Faria**, and 11 other authors (2017), Understanding stellar activity-induced radial velocity jitter using simultaneous K2 photometry and HARPS RV measurements, *A&A* 606, A107.
- Santos, N. C., 7 authors, **J. P. Faria**, and 2 other authors (2017a), Constraining planet structure and composition from stellar chemistry: trends in different stellar populations, *A&A* 608, A94.
- Santos, N. C., 6 authors, **J. P. Faria**, and 4 other authors (2017b), Observational evidence for two distinct giant planet populations, *A&A* 603, A30.
- Adibekyan, V., 6 authors, **J. P. Faria**, and 4 other authors (2016a), Abundance trend with condensation temperature for stars with different Galactic birth places, *A&A* 592, A87.
- Adibekyan, V., 4 authors, **J. P. Faria**, and 5 other authors (2016b), ζ^2 Reticuli, its debris disk, and its lonely stellar companion ζ^1 Ret. Different T_c trends for different spectra, *A&A* 591, A34.
- Figueira, P., **J. P. Faria**, and 3 other authors (2016), A Pragmatic Bayesian Perspective on Correlation Analysis - The exoplanetary gravity - stellar activity case, *Origins of Life and Evolution of the Biosphere* 46, 385–393.
- Figueira, P., 8 authors, **J. P. Faria**, and 7 other authors (2016), Is the activity level of HD80606 influenced by its eccentric planet?, *A&A* 592, A143.
- Mortier, A., **J. P. Faria**, and 17 other authors (2016), The HARPS search for southern extra-solar planets XXXIX. HD175607, the most metal-poor G dwarf with an orbiting sub-Neptune, *A&A* 585, A135.
- Santos, N. C., A. Santerne, **J. P. Faria**, and 19 other authors (2016), An extreme planetary system around HD219828. One long-period super Jupiter to a hot-Neptune host star, *A&A* 592, A13.
- Adibekyan, V., 3 authors, **J. P. Faria**, and 8 other authors (2015), Identifying the best iron-peak and α -capture elements for chemical tagging: The impact of the number of lines on measured scatter, *A&A* 583, A94.
- Martins, J. H. C., N. C. Santos, P. Figueira, **J. P. Faria**, and 10 other authors (2015), Evidence for a spectroscopic direct detection of reflected light from 51 Pegasi b, *A&A* 576, A134.
- Mortier, A., **J. P. Faria**, and 3 other authors (2015), BGLS: A Bayesian formalism for the generalised Lomb-Scargle periodogram, *A&A* 573, A101.
- Figueira, P., **J. P. Faria**, and 5 other authors (2014), Exoplanet hosts reveal lithium depletion. Results from a homogeneous statistical analysis, *A&A* 570, A21.
- Santos, N. C., A. Mortier, **J. P. Faria**, and 21 other authors (2014), The HARPS search for southern extra-solar planets XXXV. The interesting case of HD41248: stellar activity, no planets?, *A&A* 566, A35.
- Verma, K., **J. P. Faria**, and 8 other authors (2014), Asteroseismic Estimate of Helium Abundance of a Solar Analog Binary System, *ApJ* 790, 138.
- Faria, J. P.** and M. J. P. F. G. Monteiro (2012), On the possibility of using seismic probes to study the core composition in pulsating white dwarfs, *Astron. Nachr.* 333, 954.

Teaching Experience

JULY 17-27, 2016	Detecting Planetary Transits and Radial-Velocity Signals <i>IVth Azores International Advanced School in Space Sciences</i> 4.5hrs tutorial in the Summer school “Astero-seismology and Exoplanets: Listening to the Stars and Searching for New Worlds” covering data analysis methods for the detection of exoplanets in transit lightcurves and radial-velocity datasets. DOI: 10.1007/978-3-319-59315-9
FEBRUARY, 2016	Bayesian Statistics <i>Advanced Course, Institute of Astrophysics and Space Sciences</i> Created and lectured a course about Bayesian statistics, composed of a seminar talk and two hands-on computational classes. See the repository .
NOVEMBER, 2015	Python for Astronomers <i>Advanced Course, Center for Astrophysics University of Porto</i> Teaching assistant for introductory practical classes. See the repository .
AUG 31 - SEP 4, 2015	Escola de Verão de Física (Physics Summer School) <i>Summer School, Faculty of Sciences, University of Porto</i> Supervised and lectured a project about “The energy of stars” for a class of 5 high-school students.
MARCH 26-28, 2014	Stellar evolution models with the MESA code <i>Advanced Course, Center for Astrophysics University of Porto</i> Developed and coordinated a series of three hands-on tutorial classes demonstrating the use of the MESA stellar evolution code (Paxton et al. 2011 ; 2013).

Other research outcomes

- PI of **1** accepted ESO observing proposal
- co-I of **9** accepted ESO/OPTICON observing proposals
- Observing experience from **4** missions to the La Silla and Paranal observatories
- ESPRESSO Science Team collaborator
- co-I of **2** accepted ISSI International Team proposals
- member of the PLATO [Work Package 115100](#), dealing with *Astrophysical Noise Sources*

Outreach

- *Ignite IAStro (multiple sessions)*, Short outreach presentations in small towns ([more info, in Portuguese](#))
- *Mentes que Brilham (TV show)*, interview about the work published in [Martins et al. \(2015\)](#), May 13, 2015.
- *Universidade Júnior (University of Porto)*, monitor of scientific activities for middle-school students, July 2013.
- *Planetarium sessions (presenter)*, as collaborator of the Outreach Unit of CAUP, Summer 2013.
- *Noites no Observatório*, monthly outreach events at the Lisbon Astronomical Observatory, 2010-2011.

Supervision

- Ph.D. project: João D. Camacho (IA)
- M.Sc.-level fellowship: João Gomes da Silva (IA)
- M.Sc. thesis project: João D. Camacho (IA)
- Undergraduate project: Ishan Mishra (IIT, India)

Software development

- [kima](#): Exoplanet detection in RVs with DNest4 and GPs, described in [Faria et al. \(2018\)](#)
- [BGLS](#): Bayesian version of the Generalized Lomb-Scargle periodogram, described in [Mortier et al. \(2015\)](#)
- [OPEN](#): A platform for exoplanet detection in RVs
- [pfigueira/BayesianCorrelation](#) (contribution)

Invited

Dealing with stellar activity in radial velocities. *EXO.AR 1 – 1st Argentinian Workshop on Exoplanets*
— Buenos Aires, Argentina. Oct 30 - Nov 2, 2017

Gaussian processes for the analysis of RV data. *Extremely Precise Radial Velocities III*
— State College, USA, August 14-17, 2017

Contributed

T10 The power of Gaussian processes as models for stellar activity.
CHEOPS 5th Science Workshop. Leibnitz, Austria. 24 Jul, 2017

T9 Searching for planets around metal-poor stars. *IA Seminar*. Porto. 24 May, 2017

T7 Trans-dimensional Bayesian inference. *ESO MCMC coffee*. Santiago. 30 Mar, 2017

T8 Detecting planets around active stars with radial velocity observations. *ESO*, Santiago. 30 Mar, 2017

T6 Searching for low-mass planets around metal-poor stars. *INAF/OAT*. Torino, Italy, 20 Oct, 2016

P4 The search for low-mass planets around metal-poor stars. *4th Annual GMT Community Science Meeting*.
26-28 September, 2016, Pacific Grove, CA, USA

P3 CoRoT-7 as seen with HARPS radial velocities. *Exoplanets I*. 3-8 July 2016, Davos, Switzerland

P2 CoRoT-7 as seen with HARPS radial velocities. *K2 Meeting*. 10-11 May 2016, Porto, Portugal

T5 Highlights from the Astro Hack Week. *CAUP Cookie Seminar*. Porto. 14 Oct, 2015

P1 A radial velocity search for low mass planets around metal-poor stars: first statistical results.
EPRV. 5-8 July, 2015, Yale University, USA

T4 The interesting case of HD41248: stellar activity, no planets?. *Towards Other Earths II - The Star-Planet Connection*, Porto. 16 Sep, 2014

T3 The metal-poor survey. *CAUP Cookie Seminar*. Porto. 23 Apr, 2014

T2 Acoustic Glitches in 16 Cyg. *6th Iberian Meeting on Astroseismology*. Aras de los Olmos, Spain. 27 May, 2013

T1 MESA - Modules for Experiments in Stellar Astrophysics. *CAUP Cookie Seminar*. Porto. Jan, 2013