

Leandro Beraldo e Silva | CV

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Education and Training

University of Arizona Tucson, AZ Barbara Pichardo Future Faculty Fellow	Postdoc 2023-present
University of Michigan Ann Arbor, MI	Postdoc 2021-2023
University of Central Lancashire Preston, UK	Postdoc 2018-2021
University of São Paulo São Paulo, Brasil (one-year internship at University of Michigan)	Postdoc 2015-2018
University of São Paulo São Paulo, Brasil (one-year internship at Institut d'Astrophysique de Paris)	Ph.D. Physics 2011-2015
University of São Paulo São Paulo, Brasil	M.Sc. Physics 2008-2010
University of São Paulo São Paulo, Brasil	B.A. Phys. & Astronomy 2003-2007

List of publications

Full list: ADS

First few authors: ADS

Refereed publications

28. **Validation of the Scientific Program for the Dark Energy Spectroscopic Instrument** **AJ**
DESI collaboration, w/ LBeS, AJ 167 2 2024 2024
27. **Characterisation of high velocity stars in the S-PLUS internal fourth data release** **MNRAS**
F. Quispe-Huaynasi, F. Roig, V. M. Placco, LBeS et al, MNRAS 527 3 2024 2024
26. **Early Growing Supermassive Black Holes Strengthen Bars and Boxy/Peanut Bulges** **ApJ**
V. Wheeler, M. Valluri, LBeS, S. Dattathri, V. P. Debattista, ApJ 958, 2 2023 2023
25. **Orbital support and evolution of flat profiles of bars (shoulders)** **ApJ**
LBeS, V. P. Debattista, S. R. Anderson, M. Valluri, P. Erwin, K. Daniel, N. Deg, ApJ 955 1 2023 2023
24. **Exploring the Evolution of Massive Clumps in Simulations That Reproduce the Observed Milky Way α -element Abundance Bimodality** **ApJ**
B. R. Garver, D. Nidever, V. P. Debattista, LBeS, T. Khachatryan, ApJ 953 2 2023 2023
23. **Chemodynamical Properties and Ages of Metal-Poor Stars in S-PLUS** **MNRAS**
Almeida-Fernandes, V. Placco, H. Rocha-Pinto et al, w/ LBeS, MNRAS 523 2 2023 2023
22. **The imprint of clump formation at high redshift. II. The chemistry of the bulge** **ApJ**
V. P. Debattista, D. Liddicott, O. A. Gonzalez, LBeS et al, ApJ 946 2 2023 2023

21. **Overview of the DESI Milky Way Survey** **ApJ**
*The DESI Milky Way Survey Group (w/ **LBeS**)*, *ApJ* 947 1 2023 2023
- DESI Observations of the Andromeda Galaxy: Revealing the Immigration History of our Nearest Neighbor** **ApJ**
 20. *A. Dey, J. R. Najita, S. E. Koposov et al (w/ **LBeS**)*, *ApJ* 944 1 2023 2023
- The pattern speeds of vertical breathing waves** **MNRAS Letters**
 19. *T. Khachaturyants, V. P. Debattista, S. Gosh, **LBeS**, K. Daniel*, *MNRAS Letters* 517 1 2022 2022
- GASTRO library I: the simulated chemodynamical properties of several GSE-like stellar halos** **ApJ**
 18. *J. A. Amarante, V. P. Debattista, **LBeS**, C. F. P. Laporte, N. Deg*, *ApJ* 937 1 2022 2022
- The secular growth of bars revealed by flat (peak+ shoulders) density profiles** **MNRAS**
 17. *S. R. Anderson, V. P. Debattista, P. Erwin, D. J Liddicott, N. Deg, **LBeS***, *MNRAS* 513 1642 2022 2022
- Bending waves excited by irregular gas inflow along warps** **MNRAS**
 16. *T. Khachaturyants, **LBeS**, V. P. Debattista*, *MNRAS* 512 3 3500 2022 2022
- Tracing birth properties of stars with abundance clustering** **ApJ**
 15. *B. Ratcliffe, M. Ness, T. Buck, K. Johnston et al (w/ **LBeS**)*, *ApJ* 924 2 2022 2022
- How stars formed in warps settle into (and contaminate) thick discs** **MNRAS**
 14. *T. Khachaturyants, **LBeS**, V. P. Debattista*, *MNRAS* 508 2 2350 2021 2021
- Recovering the origins of the lenticular galaxy NGC 3115 using multiband imaging** **MNRAS**
 13. *M. L. Buzzo, A. Cortesi, J. Hernandez-Jimenez et al (w/ **LBeS**)*, *MNRAS* 504 2 2146 2021 2021
- The relative efficiencies of bars and clumps in driving disc stars to retrograde motion** **MNRAS**
 12. *K. Fiteni, J. Caruana, J. A. S. Amarante, V. P. Debattista, **LBeS***, *MNRAS* 503 1 1418 2021 2021
- Co-formation of the thin and thick discs revealed by APOGEE-DR16 and Gaia-DR2** **MNRAS**
 11. ***LBeS**, V. P. Debattista, D. Nidever, J. A. S. Amarante, B. Garver*, *MNRAS* 502 260 2021 2021
- Box/peanut-shaped bulges in action space** **MNRAS**
 10. *V. P. Debattista, D. J. Liddicott, T. Khachaturyants, **LBeS***, *MNRAS* 498 3334 2020 2020
- Geometric properties of galactic discs with clumpy episodes** **MNRAS**
 9. ***LBeS**, V. P. Debattista, T. Khachaturyants, & D. Nidever*, *MNRAS* 492 4716 2020 2020
- The Splash without a merger** **ApJ Letters**
 8. *J. A. S. Amarante, **LBeS**, V. P. Debattista, & M. C. Smith*, *ApJ Letters* 891 L30 2020 2020
- The Discreteness-driven Relaxation of Collisionless Gravitating Systems: Entropy Evolution and the Nyquist-Shannon Theorem** **ApJ**
 7. ***LBeS**, W. de Siqueira Pedra, M. Valluri*, *ApJ* 872 20 2019 2019
- The Discreteness-driven Relaxation of Collisionless Gravitating Systems: Entropy Evolution in External Potentials, N-dependence, and the Role of Chaos** **ApJ**
 6. ***LBeS**, W. de Siqueira Pedra, M. Valluri, L. Sodr , J.-B. Bru*, *ApJ* 870 128 2019 2019
- The Arrow of Time in the Collapse of Collisionless Self-gravitating Systems: Non-validity of the Vlasov-Poisson Equation during Violent Relaxation** **ApJ**
 5. ***LBeS**, W. de Siqueira Pedra, L. Sodr , E. L. Perico, M. Lima*, *ApJ* 846 125 2017 2017
- Anisotropic q-Gaussian 3D velocity distributions in L-CDM haloes** **MNRAS**
 4. ***LBeS**, G. A. Mamon, M. Duarte, R. Wojtak, S. Peirani, G. Bou *, *MNRAS* 452 944 2015 2015
- Statistical mechanics of self-gravitating systems: Mixing as a criterion for indistinguishability** **PRD**
 3. ***LBeS**, M. Lima, L. Sodr , J. Perez*, *PRD* 90I3004 2014 2014

	Testing phenomenological and theoretical models of dark matter density profiles	MNRAS
2.	with galaxy clusters <i>LBeS, M. Lima, L. Sodré, MNRAS 436, 2616 2013</i>	2013
1.	Constraints on enhanced dark matter annihilation from IceCube results <i>I. F. M. Albuquerque, LBeS, C. Pérez de los Heros, PRD 8513539 2012</i>	PRD 2012

Teaching experience and training

- Attended the course “Postdoctoral Short Course on College Teaching in STEM” (10 weeks), at the Center for Research on Learning and Teaching, University of Michigan.
- Co-lectured the course “Hunting for the Dark: Black Holes and Dark Matter in the Milky Way” for high-school students in the Michigan Math and Science Scholars, 2023 (two weeks, w/ Monica Valluri).
- As a postdoc at University of Central Lancashire, I contributed to preparation and worked as Teaching Assistant (TA) for the course AA3853 Cosmology and Galaxies.
- As a graduate student, I worked as TA for several undergrad courses in the University of São Paulo, covering topics such as classical mechanics (basic and advanced levels), atomic and nuclear physics and electromagnetism.

Students supervision

- Alyssa Russell, University of Michigan, 2023, undergrad research project *Hunting hyper-velocity stars in the DESI MW survey*;
- Tigran Khachataryants, University of Central Lancashire, 2018-2021 Ph.D. Thesis *The Milky Way’s Warp in the Era of Gaia* (co-supervisor).

Other information

Selected Contributed Talks	
Galactic bars: driving and decoding galaxy evolution, Granada, Spain:	2023
54th Annual Division on Dynamical Astronomy of AAS Meeting, East Lansing, MI:	2023
53rd Annual Division on Dynamical Astronomy of AAS Meeting New York, NY:	2022
XLV Reunião Anual da Sociedade Astronômica Brasileira, Rio de Janeiro, Brasil:	2022
National Astronomy Meeting, Bath, UK: (invited)	2021
Galactic Disc and Halo Dynamics towards Gaia EDR3, Royal Astronomical Society, London, UK:	2020
Collisionless Boltzmann Eq. and Modeling of Self-Gravitating Systems and Plasmas, Marseille, France:	2017
Selected Colloquia and Seminars	
University of Colorado Boulder, Boulder, CO:	2023
University of Florida (remote):	2023
University of Alabama, Tuscaloosa, AL:	2023
Institute of Astronomy, Cambridge, UK:	2019
University of Central Lancashire, Preston, UK:	2019
Basque Center of Applied Mathematics, Bilbao, Spain:	2017
École Polytechnique, Laboratoire de Plasmas, Paris, France:	2017
ICTP-SAIFR, São Paulo, Brasil:	2016
University of São Paulo, Institute of Astronomy, São Paulo, Brasil:	2016
University of São Paulo, Dept. of Mathematics, São Paulo, Brasil:	2016
Institute d’Astrophysique de Paris, France:	2013
DARK Cosmology Center, Copenhagen, Denmark:	2013

Service.....

- Current co-chair of the MW Survey within the DESI collaboration;
- Former co-leader of the DM topical group within DESI MWS;
- Chair of NASA-ATP panel (Astrophysics Theory);
- SOC of the meeting “Great Lakes Clusters and Streams”, Aug 21-24 (2023);
- SOC of the 54th meeting of the Division on Dynamical Astronomy os AAS (2023);
- Member of the Division on Dynamical Astronomy (DDA) of the AAS, Sociedade Brasileira de Física (SBF), and Sociedade Astronômica Brasileira (SAB);
- Refereed papers for *ApJ*, *ApJ Letters*, *MNRAS*, *New Astronomy*, *Galaxies*, and *Revista Brasileira de Ensino de Física* (Brazilian Journal for Physics Teaching);
- Member of the committee thesis of André Zamorano Vitorelli, entitled “Weak Gravitational Lenses: Measurement Techniques & Their Use as a Cosmic Dating System”;
- Organized the Galaxies seminars at UCLan (2018-2021);
- Exposer in the outreach project “Moon at Harris museum” at Preston - UK, celebrating the 50th anniversary of the Moon landings;

Public codes.....

- `naif`: a pure-python package for numerical analysis of frequencies;
- Silverman test: a jupyter-notebook to check for statistical significance of k or more peaks.