

Thiago Ferreira dos Santos

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RESEARCH INTERESTS

Stellar Astrophysics. Population III, spectroscopy, stellar abundances, oscillations, activity, solar analogues/twins, blue stragglers, white dwarfs, wide and close binary systems; **Galactic Structure and Archaeology.** stellar surveys, Galactic bulge and disc, stellar content, and infrared observations; **Exoplanets and Brown Dwarfs.** formation and evolution, dynamics, wide binaries, star-planet interactions, detection techniques, and atmospheric escape.

EDUCATION

Yale University

PhD candidate in Astrophysics

08/2023 – Present

New Haven (CT), U.S.

Universidade de São Paulo (IAG/USP)

M.Sc in Astronomy; Dissertation advisor: Jorge Meléndez, PhD

Dissertation: [Unveiling Planetary Systems in Solar Twins with High-Precision Radial Velocity](#)

08/2021 – 07/2023

São Paulo (SP), Brazil

Universidade Federal de Santa Catarina (UFSC)

B.Sc. in Physics; Supervisor: Roberto Saito, PhD

03/2016 – 08/2021

Florianópolis (SC), Brazil

PUBLICATIONS

Full record at [ADS Library](#) | [SciX](#)

Peer-Reviewed Publications

13. **Ferreira, T.**, Yana Galarza, J. et al., accepted for publication in AJ (Feb 2026; [arXiv:2512.17072](#)).
Hidden Companions of the Early Milky Way I. New α -Enhanced Exoplanet Hosts
12. **Ferreira, T.**, Bellinger, E.P., Farag, E., Lindsay, C.J., in press (Feb 2026; [arXiv:2602.16082](#)).
Evolution of Low-Mass Population III Stars: Convection, Mass Loss, Nucleosynthesis, and Neutrinos
11. Winnick, I., et al., (incl. **Ferreira, T.**), accepted for publication in AJ (Nov 2025; [arXiv:2508.16513](#)).
Extreme Lithium Depletion in Solar Twins: Challenging Non-Standard Mixing Models
10. Galarza J. Y., Lorenzo-Oliveira, D., **Ferreira T.**, et al., 2025, ApJ, 983, 70.
[HIP 8522: A Puzzling Young Solar Twin with the Lowest Detected Lithium](#)
9. Fermiano, V., et al., (incl. **Ferreira, T.**), 2024, A&A, 690, L7.
[The Young Exoplanetary System TOI-4562: Confirming The Presence of a Third Body in the System](#)
8. **Ferreira, T.**, Rice, M., et al., 2024, AJ, 168, 145.
[SOLES XI. The Aligned Orbit of TOI-2533 b, a Transiting Brown Dwarf Orbiting an F8-type Star](#)
7. Galarza J. Y., **Ferreira T.**, Lorenzo-Oliveira, D., et al., 2024, AJ, 168, 91.
[TOI-1173 A b: The First Inflated Super-Neptune in a Wide Binary System](#)
6. Galarza J. Y., Reggiani H., **Ferreira T.**, et al., 2024, ApJ, 974, 122.
[Detailed abundances of the planet-hosting TOI-1173 A/B system: Possible evidence of planet engulfment in a very wide binary](#)
5. Saito R. K., et al., (incl. **Ferreira, T.**), 2024, A&A, 689, A148.
[The VISTA Variables in the Vía Láctea eXtended \(VVVX\) ESO public survey: Completion of the observations and legacy](#)

4. **Ferreira T.**, Saito R. K., Minniti D., et al., 2024, MNRAS, 527, 10737.
A benchmark white dwarf-ultracool dwarf wide field binary
3. Botan, E., et al., (incl. **Ferreira, T.**), 2021, MNRAS, 504, 654.
Unveiling short-period binaries in the inner VVV bulge
2. Herpich, F.R., et al., (incl. **Ferreira, T.**), 2021, A&A, 647, A169.
VVV survey near-infrared colour catalogue of known variable stars
1. **Ferreira, T.**, Saito, R.K., Minniti, D., et al., 2019, MNRAS, 586, 1220.
The asymptotic evolution of the stellar merger V1309 Sco: a Blue Straggler in the making?

Non-Referred Publications & Conference Proceedings

10. **Ferreira, T.**, Bellinger, E., Farag, E., Lindsay, C., 2025. TASC9/KASC16.
On the Structure and Oscillations of the First Stars
9. **Ferreira, T.** & Meléndez, J., 2023, BASBr, 34, 264.
HIP 102152b: A low-mass planet candidate around an old solar twin
8. **Ferreira, T.** & Meléndez, J., 2022. Cambridge Workshop on Cool Stars, Stellar Systems, and the Sun.
HIP 102152b: A low-mass planet candidate around an old solar twin
7. **Ferreira T.S.**, Saito, R.K., & Minniti D., 2021, The Astronomer's Telegram #14626.
VVV near-IR observations of the X-ray transient Swift J174038.1-273712
6. **Ferreira T.S.**, Saito, R.K., & Minniti D., 2021, The Astronomer's Telegram #14625.
VVV near-IR observations of V6585 Sgr progenitor
5. **Ferreira dos Santos, T.** & Kalbusch Saito, R. 2020, Planets 2020, Ground and Space Observatories 11.
Exoplanetary transits in the Galactic bulge
4. **Ferreira, T.**, Saito, R.K., Gran, F. et al. 2018, RNAAS, 2, 39.
VVV Survey Orbital Period Confirmation for the Cataclysmic Variable IGR J17014-4306
3. Masetti, N., **Ferreira, T.S.**, Saito, R.K., et al. 2018, The Astronomer's Telegram #11992.
The possible VVV near-infrared counterpart of IGR J17503-2636
2. Kammers, R., **Ferreira, T.S.**, Saito, R.K. & Minniti, D. 2018. The Astronomer's Telegram #11365.
The likely progenitor of Nova ASASSN-18ds
1. **Ferreira, T.S.** & Saito, R.K. 2017, The Astronomer's Telegram #10780.
The likely progenitor of Nova ASASSN-16ra

RESEARCH EXPERIENCE

| | |
|---|-------------------|
| PhD Dissertation | 09/2025 – Present |
| <i>Advisor: Earl P. Bellinger, PhD</i> | |
| Pre-Thesis Doctoral Research | 08/2023 – 09/2025 |
| Evolution and Asteroseismology of Low-Mass Population III Stars + The Formation of Brown Dwarfs | |
| <i>Advisors: Earl P. Bellinger, PhD; Malena Rice, PhD</i> | |
| M.Sc. Graduate Research Assistant | 08/2021 – 08/2023 |
| Characterising Solar Twins with HARPS Radial Velocity Observations | |
| <i>Advisor: Jorge Luis Meléndez Moreno, PhD</i> | |
| Undergraduate Research Assistant | 08/2017 – 08/2021 |
| Time-series Analysis of Near-IR Variability with ESO/VVV & VVV-X Surveys | |
| <i>Advisor: Roberto Kalbusch Saito, PhD</i> | |

TELESCOPE OBSERVING EXPERIENCE

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| Subaru Telescope 8.2-m / HDS — 1.5 nights, PI | 2026A |
| — Uncovering Early Supernova Signatures in CEMP Giant Stars | |
| Gemini South Telescope 8.1-m / GHOST — 1.5 nights, PI | 2026A |
| — Uncovering Early Supernova Signatures in CEMP Giant Stars | |
| Magellan Clay Telescope 6.5-m / MIKE & PFS — 2 nights, Co-I | 2026A |
| — Exploring the Origin of Exoplanets in the Milky Way's Thick-Disk | |
| Gemini North/South 8.1-m / GHOST & MAROON-X — 2 nights, Co-I | 2026A |
| — Exploring the Origin of Exoplanets in the Milky Way's Thick-Disk | |
| Gemini South Telescope 8.1-m / GHOST — 0.5 nights, DDT | 2025B |
| — Confirming the First Exoplanet Around a Milky Way Halo Star | |
| Magellan Clay Telescope 6.5-m / WINERED — 1 night, PI | 2025A |
| — Investigating Atmospheric Outflows in a Neptunian-desert Planet Using He I $\lambda 10\,833\text{ \AA}$ | |
| Magellan Clay Telescope 6.5-m / PFS — 2 nights, Co-I | 2025A |
| — Confirming Thick Disc Membership for Known Exoplanets and TESS objects of interest | |
| Magellan Clay Telescope 6.5-m / MIKE — 12 nights (total), Co-I | 2024B, 2025A |
| — Exploring the star-planet connection with solar-type hosts | |
| — Correlated Abundances of Exoplanets and Their Host Stars: Constraints from Polluted White Dwarfs in Stellar Binaries | |
| — Confirming Thick Disc Membership for Known Exoplanets and TESS objects of interest | |
| ESO 3.6-m Telescope / HARPS — 6 nights, PI | 2023A |
| — How rare are analogues of the Solar System? | |

TEACHING APPOINTMENTS

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|---|---------------------|
| ASTR 310 - Galactic and Extragalactic Astronomy, Yale University | Jan 2026 – Present |
| <i>Instructor:</i> Jeffrey Kenney | |
| ASTR 556 - Astrostatistics and Data Mining, Yale University | Aug 2025 - Dec 2025 |
| <i>Instructor:</i> Earl Bellinger | |
| ASTR 220 - Galaxies and Cosmology, Yale University | Jan 2025 - May 2025 |
| <i>Instructor:</i> Robert Zinn | |
| ASTR 110 - Planets and Stars, Yale University | Aug 2024 - Dec 2024 |
| <i>Instructor:</i> Michael Faison | |
| AGA 0502 - Planets and Planetary Systems, IAG/USP | Aug 2022 - Dec 2022 |
| <i>Instructor:</i> Jorge Meléndez | |

SERVICES

- Journal Referee — *The Astrophysical Journal* (ApJ)

FELLOWSHIPS, AWARDS & GRANTS

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| • Yale Conference Travel Fund - Newton Endowment | Jul 2025 |
| • GSAS Yale Graduate Fellowship | Aug 2023 – Present |
| • Boris Garfinkel Prize Fellowship in Astronomy | Aug 2023 |
| • CAPES M.Sc. Research Fellowship, IAG/USP, Brazil | Aug 2021 – Jul 2023 |
| • exoLaTam 2022 Travel Award | Dec 2022 |

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| • Teaching Improvement Program, IAG/USP | Aug 2022 – Dec 2022 |
| • ESO/ALMA Planets2020 Workshop Travel Award | Mar 2020 |
| • CNPq Undergraduate Research Fellowship, Department of Physics, UFSC, Brazil | 2017 – 2021 |

INVITED TALKS

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| Research Talk, Theory and Observation of Stars (TOS) group, HITS/Heidelberg-DE | Jul 2025 |
| Asteroseismology of Low-Mass Population III Stars | |

CONTRIBUTED CONFERENCE PRESENTATIONS

Talks

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| 6. exoLaTam 22 – Santiago, Chile | Dec 2022 |
| HIP 102152b: A Low-Mass Planet Candidate Around an Old Solar Twin. | |
| 5. XLV Annual Meeting of the Brazilian Astronomical Society – Virtual | Oct 2022 |
| HIP 102152b: A Low-Mass Planet Candidate Around an Old Solar Twin. | |
| 4. 31° Seminário de Iniciação Científica, UFSC – Virtual | Jul 2021 |
| Studies of Stellar Astrophysics and Exoplanets in the Central Region of the Milky Way. | |
| 3. 30° Seminário de Iniciação Científica, UFSC – Virtual | Oct 2020 |
| Transiting Extrasolar Planets Orbiting Red Dwarf Stars Towards the Galactic Bulge. | |
| 2. 29° Seminário de Iniciação Científica, UFSC – Virtual | Oct 2019 |
| Stellar Variability Towards the Central Region of the Milky Way with the VVV/VVV-X Surveys. | |
| 1. 28° Seminário de Iniciação Científica, UFSC – Virtual | Oct 2018 |
| Stellar Variability Towards the Central Region of the Milky Way with the VVV/VVV-X Surveys. | |

Posters

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| 10. 9th TESS/16th Kepler Asteroseismic Science Consortium Workshop – Vienna, Austria | Jul 2025 |
| On the Structure and Oscillations of the First Stars. | |
| 9. XLV Annual Meeting of the Brazilian Astronomical Society – Virtual | Oct 2022 |
| HIP 102152b: A Low-Mass Planet Candidate Around an Old Solar Twin. | |
| 8. Cool Stars 21 – Virtual | Jul 2022 |
| HIP 102152b: A Low-Mass Planet Candidate Around an Old Solar Twin. | |
| 7. Exoplanets III – Virtual | Jul 2021 |
| A Box-Fitting Implementation for the Transit Method Detection of Exoplanets. | |
| 6. Sagan Exoplanet Summer Workshop – Virtual | Jul 2021 |
| Time-Series Analysis of Near-IR Variabilities on VVV M Dwarf Stars. | |
| 5. ALMA Planets2020 Workshop – Santiago, Chile | Mar 2020 |
| Exoplanetary Transits in the Galactic Bulge. | |
| 4. VIII PPGFSC/UFSC Meeting – Florianópolis, Brazil | Feb 2020 |
| The Asymptotic Evolution of the Blue Straggler V1309 Sco. | |
| 3. EWASS 2019 – European Astronomical Society | Jun 2019 |
| Infrared Counterparts of Gaia Alerts (Ivanov+ incl. Ferreira, T.). | |

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| 2. VVV & VVV-X Science Workshop – Florianópolis, Brazil On the Photometric Study of the Cataclysmic Variable IGR J17014-4306. | Apr 2018 |
| 1. VI PPGFSC/UFSC Meeting – Florianópolis, Brazil Stellar Variability Towards the Central Region of the Milky Way with the VVV/VVV-X Surveys. | Feb 2018 |

WORKSHOPS AND ADVANCED SCHOOLS ATTENDED

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| • Yale AstroCodEx Hack Day, New Haven, US | Aug 2025 |
| • MESA Summer School, Leuven, Belgium | Jul 2025 |
| • Yale Tinsley Workshop, New Haven, US | Oct 2024 |
| • New York Area Exoplanets Meeting, New York, US | May 2024 |
| • exoLaTam 22, Santiago, Chile | Dec 2022 |
| • ESO Star–Planet Connection Workshop (Virtual) | Oct 2021 |
| • XIII CBPF School (Virtual) | Aug 2021 |
| • ZTF Summer School on Variable Stars (Virtual) | Aug 2021 |
| • Sagan Exoplanet Summer Workshop – Circumstellar Disks and Young Planets (Virtual) | Jul 2021 |

ACADEMIC REFERENCES

Earl Patrick Bellinger, PhD (PhD Advisor)

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Department of Astronomy, Yale University – US

Jorge Luis Meléndez Moreno, PhD (MSc Advisor)

jorge.melendez@iag.usp.br

Departamento de Astronomia/IAG, Universidade de São Paulo – Brazil

Roberto Kalbusch Saito, PhD (Undergraduate Advisor)

robsaito@gmail.com

Departamento de Física, Universidade Federal de Santa Catarina – Brazil

Dante Minniti, PhD

vvvdante@gmail.com

Instituto de Astrofísica, Facultad de Ciencias Exactas, Universidad Andres Bello – Chile

Vatican Observatory, I-00120 Vatican City State, Italy

COMPLEMENTARY INFORMATION

Languages

Portuguese—native

English—fluent

Spanish—basic

Other

- Programming: \LaTeX , PYTHON (9+ years); Little experience with C, R, JAVA, BASH.
 - Databases & Softwares: [VISTA/ESO Science Archive](#), TOPCAT, [VIZIER](#), IRAF/DS9, VOSA, MESA+GYRE, etc.
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