

# Thiago Ferreira dos Santos

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## EDUCATION

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<b>Yale University</b> Ph.D. in Astronomy	08/2023 — Present <i>New Haven (CT), US</i>
<b>Universidade de São Paulo (IAG/USP)</b> M.Sc. in Astronomy Dissertation: <a href="#">Unveiling Planetary Systems in Solar Twins with High-Precision Radial Velocity</a> Supervisor: Jorge Luis Meléndez Moreno, Ph.D.	08/2021 — 06/2023 <i>São Paulo (SP), Brazil</i>
<b>Universidade Federal de Santa Catarina (UFSC)</b> B.Sc. in Physics Supervisor: Roberto Kalbusch Saito, Ph.D.	03/2016 — 08/2021 <i>Florianópolis (SC), Brazil</i>

## RESEARCH INTERESTS

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- **Stellar Astrophysics:** Population III stars, spectroscopy and chemical abundances, stellar oscillations and activity, solar analogues and twins, blue stragglers, white dwarfs, wide and close binary systems
- **Galactic Structure and Archaeology:** stellar surveys, Galactic bulge and disc, stellar content, infrared observations
- **Exoplanets and Sub-stellar Objects:** brown dwarfs, planet formation and evolution, orbital dynamics, wide binaries, star–planet interactions, detection methods (radial velocity, transit photometry), atmospheric escape

## PUBLICATIONS

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Full record at [ADS Library](#) | [Google Scholar](#) **Metrics:** 97 citations, h-index = 5 (September 2025)

### Peer-Reviewed Publications—[ADS Library](#)

11. Winnick, I., et al., (incl. **Ferreira, T.**), submitted to ApJ ([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

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

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

## OBSERVING EXPERIENCE

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\*\*\* *Observations personally conducted*

<b>GHOST / Gemini South, Cerro Pachón (Chile) – Co-I; DDT, 5.6 hrs</b>	2025A
<b>MIKE &amp; PFS / Clay–Magellan II, Las Campanas Observatory (Chile) – 2 nights</b> <i>Co-I – Confirming thick disc membership for known exoplanets and TESS objects of interest</i>	2025A
<b>***WINERED/ Clay–Magellan II, Las Campanas Observatory (Chile) – 1 night</b> <i>Co-I – Investigating atmospheric outflows in a Neptunian-desert planet using He I <math>\lambda 10\,833\text{ Å}</math></i>	2025A
<b>MIKE / Clay–Magellan II, Las Campanas Observatory (Chile) – 2 nights</b> <i>Co-I – Correlated abundances of exoplanets and their host stars: constraints from polluted white dwarfs in stellar binaries</i>	2024B
<b>MIKE / Clay–Magellan II, Las Campanas Observatory (Chile) – 4 nights</b> <i>Co-I – Exploring the star–planet connection with solar-type hosts</i>	2024B
<b>***HARPS/ ESO 3.6-m, La Silla Observatory (Chile) – 6 nights</b> <i>PI – How rare are analogues of the Solar System?</i>	2023A

## TEACHING APPOINTMENTS

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

## SERVICES

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

## FELLOWSHIPS, AWARDS & GRANTS

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• Yale Conference Travel Fund	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
• 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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<b>Research Talk, Theory and Observation of Stars (TOS) group, HITS/Heidelberg-DE</b> Asteroseismology of Low-Mass Population III Stars	Jul 2025
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### Talks

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

### Posters

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| 10. 9th TESS/16th Kepler Asteroseismic Science Consortium Workshop – Vienna, Austria<br>On the Structure and Oscillations of the First Stars.    | Jul 2025 |
| 9. XLV Annual Meeting of the Brazilian Astronomical Society – Virtual<br>HIP 102152b: A Low-Mass Planet Candidate Around an Old Solar Twin.      | Oct 2022 |
| 8. Cool Stars 21 – Virtual<br>HIP 102152b: A Low-Mass Planet Candidate Around an Old Solar Twin.   | Jul 2022 |
| 7. Exoplanets III – Virtual<br>A Box-Fitting Implementation for the Transit Method Detection of Exoplanets.                                      | Jul 2021 |
| 6. Sagan Exoplanet Summer Workshop – Virtual<br>Time-Series Analysis of Near-IR Variabilities on VVV M Dwarf Stars.                              | Jul 2021 |
| 5. ALMA Planets2020 Workshop – Santiago, Chile<br>Exoplanetary Transits in the Galactic Bulge.   | Mar 2020 |
| 4. VIII PPGFSC/UFSC Meeting – Florianópolis, Brazil<br>The Asymptotic Evolution of the Blue Straggler V1309 Sco.                                 | Feb 2020 |
| 3. EWASS 2019 – European Astronomical Society<br>Infrared Counterparts of Gaia Alerts (Ivanov+ incl. Ferreira, T.).                              | Jun 2019 |
| 2. VVV & VVV-X Science Workshop – Florianópolis, Brazil<br>On the Photometric Study of the Cataclysmic Variable IGR J17014-4306.                 | Apr 2018 |
| 1. VI PPGFSC/UFSC Meeting – Florianópolis, Brazil<br>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

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### Jorge Luis Meléndez Moreno, Ph.D. (MSc Advisor)

[jorge.melendez@iag.usp.br](mailto:jorge.melendez@iag.usp.br)

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

### Roberto Kalbusch Saito, Ph.D. (Undergraduate Advisor)

[robsaito@gmail.com](mailto:robsaito@gmail.com)

Departamento de Física, Universidade Federal de Santa Catarina – Brazil

### Dante Minniti, Ph.D.

[vvvdante@gmail.com](mailto:vvvdante@gmail.com)

Instituto de Astrofísica, Facultad de Ciencias Exactas, Universidad Andres Bello – Chile  
Vatican Observatory, I-00120 Vatican City State, Italy

## COMPLEMENTARY INFORMATION

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### Languages

**Portuguese** (native), **English** (fluent), **Spanish** (basic).

### Other

- Programming:  $\text{\LaTeX}$ , 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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