

# Thiago Ferreira dos Santos

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## EDUCATION

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### Yale University

Ph.D. in Astronomy

08/2023 – Present

New Haven (CT), US

### Universidade de São Paulo – Instituto de Astronomia, Geofísica e Ciências Atmosféricas

M.Sc. in Astronomy

08/2021 – 06/2023

São Paulo (SP), Brazil

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

Advisor: Jorge Luis Meléndez Moreno, Ph.D.

### Universidade Federal de Santa Catarina

B.Sc. in Physics

03/2016 – 08/2021

Florianópolis (SC), Brazil

Advisor: Roberto Kalbusch Saito, Ph.D.

## PUBLICATIONS

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Full record at [ADS Library](#)

### Referred Publications

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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### Pre-Thesis Doctoral Research

08/2023 – Present

Department of Astronomy, Yale University

*Advisors:*

Earl P. Bellinger, Ph.D. (**Evolution of Low-Mass Population III stars**), and

Malena Rice, Ph.D. (**Formation of Brown Dwarfs**)

### M.Sc. Graduate Research Assistant

08/2021 – 08/2023

#### Seeking Solar System Analogues

*Abstract:* We aim to elucidate the uniqueness of the Solar System by characterising exoplanetary systems with Jupiter analogues through high-precision ESO/HARPS radial velocity observations of solar twins. Moreover, we study the possible connection between those planets and the chemical compositions of their host stars.

*Advisor:* Jorge Luis Meléndez Moreno, Ph.D.

### Undergraduate Research Assistant

08/2017 – 08/2021

#### Time-series analysis of near-IR variabilities with the ESO/VVV & VVV-X surveys

*Abstract:* We examined relatively small photometric variations in the near-IR Ks-band light curves of the ESO/VISTA Variables in the Via Láctea (VVV) & VVV eXtended (VVV-X) surveys by implementing the Lomb-Scargle method for characteristically sine-like signals of variable stars, and the Box Least-Squares method to detect and model exoplanetary transit candidates on M dwarf stars, primarily selected based on VVV photometric and *Gaia* DR3 astrometric datasets.

*Advisor:* Roberto Kalbusch Saito, Ph.D.

## OBSERVING EXPERIENCE & ACCEPTED PROPOSALS

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\*\*\* *Observations personally conducted*

### GHOST / Gemini South, Cerro Pachón (Chile) – DDT - 5.6 hrs

2025B

*Confirming the First Exoplanet Around a Milky Way Halo Star*

### MIKE/PFS / Clay–Magellan II, Las Campanas Observatory (Chile) – 2 nights

2025A

*Confirming Thick Disc Membership for Known Exoplanets and TESS Objects of Interest*

<b>***WINERED / Clay–Magellan II, Las Campanas Observatory (Chile) – 1 night</b>	2025A
<i>Investigating Atmospheric Outflows in the Neptunian-Desert Planet TOI-1943 b Using He III <math>\lambda 10\,833\text{ \AA}</math></i>	
<b>MIKE / Clay–Magellan II, Las Campanas Observatory (Chile) – 2 nights</b>	2024B
<i>Correlated Abundances of Exoplanets and Their Host Stars? Constraints from Polluted White Dwarfs in Stellar Binaries</i>	
<b>MIKE / Clay–Magellan II, Las Campanas Observatory (Chile) – 4 nights</b>	2024B
<i>Exploring the Star-Planet Connection with Host Solar-Type Stars</i>	
<b>***HARPS / ESO 3.6-m, La Silla Observatory (Chile) – 6 nights</b>	2023A
<i>How rare are analogues of the Solar System?</i>	

## TEACHING APPOINTMENTS

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

## FELLOWSHIPS, AWARDS & GRANTS

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• 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

## CONFERENCE PRESENTATIONS

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14. exoLaTam 22, Santiago, Chile	Dec 2022
HIP 102152b: A Low-Mass Planet Candidate Around an Old Solar Twin [Talk].	
13. XLV Annual Meeting of the Brazilian Astronomical Society - Virtual	Oct 2022
HIP 102152b: A Low-Mass Planet Candidate Around an Old Solar Twin [Poster & Flash Talk].	
12. Cool Stars 21 - Virtual	Jul 2022
HIP 102152b: A Low-Mass Planet Candidate Around an Old Solar Twin [Poster & Flash Talk].	
11. 31° Seminário de Iniciação Científica, UFSC - Virtual	Jul 2021
Studies of Stellar Astrophysics and Exoplanets in the Central Region of the Milky Way [Talk].	
10. Exoplanets III - Virtual	Jul 2021
A Box-Fitting Implementation for the Transit Method Detection of Exoplanets [Poster].	
9. Sagan Exoplanet Summer Workshop - Virtual	Jul 2021
Time-Series Analysis of Near-IR Variabilities on VVV M Dwarf Stars [Poster & Flash Talk].	
8. 30° Seminário de Iniciação Científica, UFSC - Virtual	Oct 2020
Transiting Extrasolar Planets Orbiting Red Dwarf Stars Towards the Galactic Bulge [Talk].	
7. ALMA Planets2020 Workshop, Santiago, Chile	Mar 2020
Exoplanetary Transits in the Galactic Bulge [Poster & Flash Talk].	

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| 6. VIII PPGFSC/UFSC Meeting, Florianópolis, Brazil<br>The Asymptotic Evolution of the Blue Straggler V1309 Sco [Poster].                                       | Feb 2020 |
| 5. 29° Seminário de Iniciação Científica, UFSC - Virtual<br>Stellar Variability Towards the Central Region of the Milky Way with the VVV/VVV-X Surveys [Talk]. | Oct 2019 |
| 4. EWASS 2019 - European Astronomical Society<br>Infrared Counterparts of Gaia Alerts (Ivanov+ incl. Ferreira, T.) [Poster].                                   | Jun 2019 |
| 3. 28° Seminário de Iniciação Científica, UFSC - Virtual<br>Stellar Variability Towards the Central Region of the Milky Way with the VVV/VVV-X Surveys [Talk]. | Oct 2018 |
| 2. VVV & VVV-X Science Workshop, Florianópolis, Brazil<br>On the Photometric Study of the Cataclysmic Variable IGR J17014-4306 [Poster & Flash Talk].          | 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 [Poster].       | Feb 2018 |

## WORKSHOPS AND ADVANCED SCHOOLS ATTENDED

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| • Yale Tinsley Workshop, New Haven, USA  | Oct 2024 |
| • New York Area Exoplanets Meeting, New York, USA                                  | May 2024 |
| • exoLaTam 22, Santiago, Chile   | Dec 2022 |
| • ESO The 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, PhD (MSc Advisor)

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

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

### Roberto Kalbusch Saito, PhD (Undergrad Advisor)

Departamento de Física, Universidade Federal de Santa Catarina – Brazil

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

### Dante Minniti, PhD

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

Vatican Observatory, I-00120 Vatican City State, Italy

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

## 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.