

# Aline Novais (Ribeiro)

PHD CANDIDATE · SCIENCE COMMUNICATOR

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## Education

- PhD Candidate in Astronomy** · Valongo Observatory, Federal University of Rio de Janeiro (OV/UFRJ) 2019 – PRESENT  
· Guest researcher at the Ludwig Maximilian University of Munich (LMU-Munich) February 1 – July 31, 2023
- Master Degree in Astronomy** · Valongo Observatory, Federal University of Rio de Janeiro (OV/UFRJ) 2017 – 2019
- Bachelor Degree in Astronomy** · Valongo Observatory, Federal University of Rio de Janeiro (OV/UFRJ) 2012 – 2017  
· Research at the National Observatory (ON), Rio de Janeiro 2015 – 2017

## Publication

3. **A. Novais**, C. Fisher, K. Heng, L. Ghezzi (submitted). *Parameter degeneracies associated with interpreting HST WFC3 transmission spectra of exoplanetary atmospheres*. Monthly Notices of the Royal Astronomical Society (MNRAS).
2. A. Lueber, **A. Novais**, C. Fisher, K. Heng, 2024. *Information content of JWST spectra of WASP-39b*. Astronomy & Astrophysics (A&A). [ [arXiv](#) ]
1. **A. Novais**, D. Andrade, H. Boechat-Roberty, 2020. *Formation and destruction of organic molecules in the upper atmosphere of Titan*. Bulletin of the Brazilian Astronomical Society (SAB), v. 32, n. 1, p. 10-11. ISSN: 0101-3440. [ [PDF](#) ]

## Projects

### Information content of JWST spectra of WASP-39b

Members: A. Novais, A. Lueber, C. Fisher, K. Heng 2023 – 2024  
· We use data from JWST ERS Program from four different instruments to reassess the atmospheric composition and thermal structure of WASP-39b. Using a suite of atmospheric retrievals, we attempt to address the level of complexity (in temperature-pressure profile and cloud treatment) required to fit JWST spectra.

### Parameter degeneracies associated with interpreting HST WFC3 transmission spectra of exoplanetary atmospheres

Members: A. Novais, C. Fisher, L. Ghezzi, K. Heng 2019 – PRESENT  
· We revisit previously studied HST WFC3 transmission spectra for 38 objects in order to identify, comprehend, and possibly overcome degeneracies between parameters in atmospheric retrievals [ [read full thesis](#) ]

### Formation and Destruction of Organic Molecules in the Upper Atmosphere of Titan

Members: A. Novais, D. P. P. Andrade, H. M. Boechat-Roberty 2017 – 2019  
· We used the DASSLC/MATLAB model by Pinotti & Boechat-Roberty (2016) to simulate the chemical reactions and obtain molecule abundances that possibly occur in Titan's atmosphere [ [read full thesis](#) ]

### Study of Possible Atmospheres from a Sample of Terrestrial Exoplanets Identified by the Kepler Mission

Members: A. Novais, M. Garcia, M. Borges Fernandes 2015 – 2017  
· We used the photochemical code written by Kasting et al. (1985) and Pavlov et al. (2001), and their two separate models – high O<sub>2</sub> and high CO<sub>2</sub>/CH<sub>4</sub> – to study the atmospheres of seven rocky planets [ [read full thesis](#) ]

## Presentation

### ORAL PRESENTATION

- XVII Latin American Regional IAU Meeting (LARIM)** · Montevideo, Uruguay November 28, 2023
- XLVI Anual Meeting of the Brazilian Astronomical Society (SAB)\*** · Rio de Janeiro, Brazil October 2, 2023  
\*Plenary session
- Goldschmidt** · Lyon, France July 11, 2023
- CN-2 “Planets and other Habitats” Science Afternoon** · Garching, Germany March 6, 2023
- XLV Anual Meeting of the Brazilian Astronomical Society (SAB)** · Online September 28, 2022
- Exoplanet Atmospheres Workshop** · Online March 9, 2022
- IV Anual Meeting of the Brazilian Society of Astrobiology (SBAstrobio)** · Online November 26, 2021
- Astrobiology Graduate Conference (AbGradCon)** · Online September 17, 2021

<b>XLIV Anual Meeting of the Brazilian Astronomical Society (SAB)</b> · Online	September 14, 2021
<b>Astrobiology Graduates in Europe (AbGradE)</b> · Online	September 2, 2021
<b>Exoplanet Atmosphere Characterization: from HST and Spitzer to JWST</b> · Online	March 11, 2021
<b>1st Brazilian Women's Meeting in Astrophysics, Gravitation and Cosmology</b> · Online	February 8, 2021
<b>Precision Spectroscopy Stellar Connections: From Galaxy Evolution to Exoplanets</b> · Online	February 1, 2021
<b>II Anual Meeting of the Brazilian Society of Astrobiology (SBAstrobio)</b> · São Paulo, Brazil	October 17, 2019
<b>Astrochemistry LLAMA Meeting (ALLAM)</b> · São Paulo, Brazil	August 9, 2019
<b>Astrobiology Graduate Conference (AbGradCon)</b> · Salt Lake City, USA	July 22, 2019
<b>Precision Spectroscopy 2018: From the First Stars to Exoplanets</b> · São Paulo, Brazil	September 10-11, 2018

## POSTER PRESENTATION

<b>Astrobiology Graduates in Europe + Europlanet Early Career Network (AbGradEPEC)</b> · La Palma, Spain	May 5, 2023
<b>Exoplanets III</b> · Online	July 31, 2020
<b>XLIII Anual Meeting of the Brazilian Astronomical Society (SAB)</b> · São Paulo, Brazil	September 12, 2019
<b>XLII Anual Meeting of the Brazilian Astronomical Society (SAB)</b> · São Paulo, Brazil	July 12, 2018
<b>1st Anual Meeting of the Brazilian Society of Astrobiology (SBAstrobio)</b> · São Paulo, Brazil	July 11, 2018
<b>XL Anual Meeting of the Brazilian Astronomical Society (SAB)</b> · Ribeirão Preto, Brazil	August 31, 2016

## Teaching Experience

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<b>Mentoring for Freshmen Students: "Astrobiology and Exoplanets"</b> · Federal University of Rio de Janeiro (UFRJ)	2021 – 2023
<b>Teaching Traineeship: "Planetary Systems" Bachelor's Course</b> · Federal University of Rio de Janeiro (UFRJ)	2020
<b>Teaching Traineeship: "Astrobiology" Bachelor's Course</b> · Federal University of Rio de Janeiro (UFRJ)	2019
<b>Introduction Course: "Astrochemistry and the Molecules of Life"</b> · Museum of Astronomy and Related Sciences (MAST)	May 2, 2019
<b>Undergraduate Tutor: "Physics IV (Optics, Special Relativity)" Bachelor's Course</b> · Federal University of Rio de Janeiro (UFRJ)	2015

## Referee Experience

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<b>Examining Board for Bachelor Thesis: "Ionic Desorption of Methanol Ice in Different Space Environments"; student Tarek Eduardo Haimuri Guimarães</b> · Federal University of Rio de Janeiro (UFRJ)	February 23, 2024
<b>Abstract Reviewer for Astrobiology Graduate Conference (AbGradCon) 2023</b> · Online	March, 2023
<b>Examining Board for Bachelor Thesis: "Use of Machine Learning for Stellar Spectral Classification"; student Julia Camões Alves</b> · Federal University of Rio de Janeiro (UFRJ)	August 19, 2022

## Honors and Awards

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<b>Honorable Mention</b> · National Observatory (ON/MCTIC)	2017
Scientific Initiation Journey at the National Observatory (JICON) for the work "Study of the Possible Atmospheres from a Sample of Terrestrial Exoplanets Identified by the Kepler Mission"	

## Extracurricular Activities

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<b>Graduate Students Representative</b> Valongo Observatory, Federal University of Rio de Janeiro (OV/UFRJ)	2017 – 2019, 2021 – 2022
<b>Science Outreach on Social Media</b> Twitter, Instagram, YouTube	2017 – PRESENT
<b>Science Outreach Talks and Roundtable Discussions</b> Valongo Observatory (OV/UFRJ), Institute of Physics (IF/UFRJ), "Pint of Science"	2018 – PRESENT
<b>Interviews, Podcasts, and Live Streams</b> "Superinteressante", "g1", "CNN Brazil", "Canal Tech"	2019 – PRESENT