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Profile Summary

Degree in Physics from the Federal University of Alagoas (2019), a Master's Degree in Physics from the State University of Rio Grande do Norte (2021), and a PhD in Astronomy from the National Observatory (2025), with an internship at the Paris Observatory (2024). I am a Postdoctoral Researcher at the National Astrophysics Laboratory, working on the study of massive stars, focusing on Be stars and stars in multiple (hierarchical) systems, in addition to participating in observation projects (National/International) of stars and exoplanets, in the optical and near-infrared, and in the processing of photometry, spectroscopy, and interferometry data. I have carried out several scientific outreach and training activities throughout Brazil, mainly with the Brazilian Astronomy and Astronautics Olympiad (OBA). I was a juror at the IOAA 2024. My main areas of expertise are: Stellar and Observational Astrophysics, Exoplanets, and Astronomy Education/Outreach. I am part of international scientific group BLOeM, and of the organization of the Alagoas Rocket Olympiad.

Education

Aug 2021 – Oct 2025	PhD., Astronomy, Observatório Nacional
	Thesis Title: Be stars in binary Systems
	Supervisor: Dr. Marcelo Emilio
Aug 2019 – jul 2021	M.Sc., Physics, University Estadual do Rio Grande do Norte
Aug 2013 – jul 2019	Degree in Physics, University Federal de Alagoas

Postdoctoral Position

nov 2025 - now	Laboratório Nacional de Astrofísica

Selected Honours and Awards

- 2023, PhD awarded with highest distinction (Grade: 10/10), FAPERJ
- 2013, Silver Medal, MOBFOG/SAB and OAFOG
- 2012, Honorable Mention, OBMEP/SBM

Academic Appointments and Teaching Experience

- 2014 to 2025 High School, Scientific Olympics Teaching
- 2022 to 2024 Student Representative, Astronomy, Observatório Nacional
- 2014 to 2019 Teaching Assistant, Physics, University Federal de Alagoas
- 2016 to 2018 Teaching Assistant, Physics, Secretaria de Educação de Estado de Alagoas

Publications List

[1] **Rocha, D. F.**, ... (2026). The Triple System V1371 Tau: An Eclipsing Binary with an Outer Be Star. The Astrophysical Journal, 996 61. DOI: 10.3847/1538-4357/ae1d57

[2] A. Kokori, A. Tsiaras, ..., **Rocha, D. F.**, ... (2025). ExoClock Project IV: A homogeneous catalogue of 620 updated exoplanet ephemerides. Submitted to ApJS. astro-ph DOI: 10.48550/arXiv.2511.14407

[3] Sana, H., ..., **Rocha, D. F.**, ... (2025). A high fraction of close massive binary stars at low metallicity. Nature Astronomy, 9, pages 1337–1346. DOI: 10.1038/s41550-025-02610-x

[4] J. Bodensteiner, T. Shenar, H. Sana, ..., **Rocha, D. F.**, ... (2025). Binarity at Low Metallicity (BLOeM) – Multiplicity properties of Oe and Be stars. Astronomy & Astrophysics, 698, A38. DOI: 10.1051/0004-6361/202452623

[5] J. I. Villaseñor, ..., **Rocha, D. F.**, ... (2025). Binarity at Low Metallicity (BLOeM) – Enhanced multiplicity of early B-type dwarfs and giants at $Z = 0.2Z_{\odot}$. Astronomy & Astrophysics, 698, A41. DOI: 10.1051/0004-6361/202453166

[6] Shenar, T., Bodensteiner, J., Sana, H., Crowther, P. A., Lennon, D. J., Abdul-Masih, M., ..., **D.F. Rocha**,... & Willcox, R. (2024). Binarity at LOw Metallicity (BLOeM)-A spectroscopic VLT monitoring survey of massive stars in the SMC. Astronomy & Astrophysics, 690, A289. DOI: 10.1051/0004-6361/202451586

[7] Navarete, F., Damineli, A., Ramirez, A. E., **Rocha, D. F.**, & Almeida, L. A. (2022). Distance and age of the massive stellar cluster Westerlund 1. I. Parallax method using Gaia-EDR3. Monthly Notices of the Royal Astronomical Society, 516(1), 1289-1301. DOI: 10.1093/mnras/stac2374

[8] **Rocha, D. F.**, Almeida, L. A., Damineli, A., ..., & Mace, G. N. (2022). Distance and age of the massive stellar cluster Westerlund 1–II. The eclipsing binary W36. Monthly Notices of the Royal Astronomical Society, 517(3), 3749-3762. DOI: 10.1093/mnras/stac2927

Telescope time

Observing as Principal Investigator:

- 2 nights at 4-m SOAR telescope with TripleSpec [SO2026A-018]
- 2 nights at 4-m SOAR telescope with TripleSpec [SO2024A-024]
- TESS Investigator program Cycle 7 [Proposal ID: G07166]

Over 10 additional projects obtained as co-I at TESS, OPD, SOAR, Gemini telescopes.

Selected Main Conferences & Talks

[1] 2025 - XLVIII Annual Meeting of the Brazilian Astronomical Society. Hotel Glória, Caxambu, Minas Gerais, Brazil. Presentation in a parallel session.

[2] 2024 - Cesam2k20 workshop II: Transport Processes. Observatoire de Paris-Meudon, OBSPM, Paris, France.

[3] 2024 - VLTI Interferometry School. Observatoire de la Côte d'Azur. Porquerolles, France.

[4] 2023 - XLVI Annual Meeting of the Brazilian Astronomical Society. Planetary of Rio de Janeiro, Brazil, 2023. Presentation in plenary session.

Posters

[1] 2024 - Poster session presented at the Binary and Multiple Stars in the Era of Big Sky Surveys. Czech Republic.

Professional Activities

- Reviewer, Astrophysical Journal, 2023-now.

Event Organization

- 2012 to 2016 and 2025 - Organizing committee member of the Alagoas Rocketry Olympiad, responsible for the coordination of scientific outreach activities, logistical planning, and student engagement in experimental rocketry, promoting STEM education across the state of Alagoas, Brazil.