

Natan de Isídio

Ph.D. candidate

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📄 NASA/ADS

EDUCATION

B.Sc. in Astrophysics

🏛️ Valongo Observatory, Federal University of Rio de Janeiro
📅 2018 – 2022

- **First class honors**
- Research internship at ESO in Garching, Germany
- Thesis: “Modeling the dark matter distribution in Milky Way analog galaxies”
- Advisor: Prof. Karín Menéndez-Delmestre

M.Sc. in Astrophysics

🏛️ Valongo Observatory & Very Large Array - NRAO, USA
📅 2023 – 2024

- **First class honors** (GPA: 4.0/4.0)
- Thesis: “Dark matter distribution in Milky Way analog galaxies”
- Supervisors: Prof. Karín Menéndez-Delmestre & Dr. Pedro Beaklini

Ph.D. in Astrophysics

🏛️ European Southern Observatory (ESO), Germany
📅 2024 – present

- **Selected through the IMPRS Program** (>700 applicants)
- ESO PhD Fellowship (3.5 years) + ERC Scholarship (0.5 year)
- Thesis: “How do galaxies die? Deep dive into quenching mechanisms and their evolution from low- to high-redshift”
- Supervisor: Dr. Paola Popesso

GRANTS, AWARDS & HONORS

(2019-2022) Undergraduate Research Scholarship

CNPq Scholarship for undergraduate research.
Grant: 153284/2019-6 (extended in 2020, 2021, and 2022), Brazil

(2022) Honorable Mention

Outstanding performance presentation in the 11th SIAC, Brazil

(2022) Research Grant PI

Sigma Xi, The Scientific Research Honor Society.
Grant: G20211001-465, USA | \$2 000

(2022) ESO Summer Research Programme

Fully funded internship at ESO to develop a summer research project at the ESO Headquarters in Garching, Germany | €4 000

(2023) Honorable Mention

Outstanding performance presentation in the 12th SIAC, Brazil

(2023) Nominated for the “Best B.Sc. Research Award”

Nominated for the award on the best scientific research led by undergraduate students on Natural Sciences in Brazil.

(2023) M.Sc. Scholarship

M.Sc. scholarship by Coordination for the Improvement of Higher Education Personnel (CAPES Scholarship: 88887.821755/2023-00), the national funding agency for graduate research.

(2023) IAU International Travel Grant

IAU International Travel Grant to give a talk at the IAU regional meeting (LARIM) in Uruguay.

(2024) Studentship for a joint M.Sc. degree at the NRAO Facilities in New Mexico, USA

Studentship supported by the National Radio Astronomy Observatory (NRAO), National Science Foundation (NFS), and Serrapilheira Institute for a joint M.Sc. at the VLA/NRAO Facilities, USA.

(2024) IMPRS PhD Scholarship at ESO, Germany (Accepted)

(2024) PhD Scholarship at Leiden University, Netherlands (Declined)

(2024) IMPRS PhD Scholarship at MPE, Germany (Declined)

(2024) IMPRS PhD Scholarship at MPA, Germany (Declined)

(2024) Medal of Honor for outstanding achievements on research

Medal of honor presented by the Brazilian State government.

(2026–2027) ERC Scholarship

European Research Council Grant – Project Number: 101045437

RESEARCH POSITIONS & EXPERIENCE

Deputy of EMPOWER Large Program Working Group

📅 Jul 2026 – present 📍 KMOS/Very Large Telescope (VLT), Cerro Paranal, Chile

Summer Internship

🏛️ European Southern Observatory (ESO) 📅 Jun – Aug, 2022 📍 Garching near Munich, Germany

Project: “Wind-blown bubbles around accreting neutron stars and black holes”

- Research project supervised by Dr. Marianne Heida and Dr. María Diaz-Trigo (ESO staff, Garching) | [Interview after program here](#)

PEER-REVIEWED PUBLICATIONS

1st to 5th author papers

ⓈPaper of students I supervised/co-supervised

- **de Isídio et al.**, 2026b, A&A – “Circumgalactic medium depletion drives satellite quenching in IllustrisTNG”
- **de Isídio et al.**, 2026a, A&A, 709, A263 – “The kinematic imprinting of environmental quenching in $z < 0.2$ galaxies”
- **de Isídio et al.**, 2024, ApJ, 971, 69 – “Dark matter distribution in Milky Way analog galaxies”
- ⓈGonçalves et al. (incl. **de Isídio**), 2026, MNRAS, xxx, yyy – “SAMI and TNG-Cluster: tracing galaxy spin and environmental trends across cluster phase-space”
- Mazengo et al. (incl. **de Isídio**), 2026, A&A, xxx, yyy – “What’s Missing in AGN Feedback? Lessons learnt from Magneticum, IllustrisTNG and Simba”
- Araujo-Carvalho et al. (incl. **de Isídio**), 2025, ApJ, 991(1), 3 – “Observational Biases on Rotation Curves from Integral Field Unit Data at Cosmic Noon”
- ⓈCavalcante-Siviero et al. (incl. **de Isídio**), 2026, ApJ, 971, 69 – “The Universality of Dark Matter Density Profiles for Milky Way Analog Galaxies”

Other peer-reviewed co-author papers

- Toptun et al. (incl. **de Isídio**), 2026, A&A, xxx, yyy – “The stellar-to-halo mass relation of central galaxies across three orders of halo mass”
- Marini et al. (incl. **de Isídio**), 2026, A&A, xxx, yyy – “The impact of assembly history on the X-ray detectability of halos: From galaxy groups to galaxy clusters”

COMMITTEES (TAC, LOC, SOC, ETC.)

- (2024 – present) **Giant Metrewave Radio Telescope Time Allocation Committee**
- (2024) **B.Sc. Thesis Committee**
Member of B.Sc. thesis evaluation committee of Ms. Maria Clara Cavalcante-Siviero, Valongo Observatory, Brazil
- (2024) **Research Symposium Evaluation Committee**
Invited member of the research evaluating committee of the B.Sc. & M.Sc. student symposium at the New Mexico Institute of Technology (New Mexico Tech), USA

Local Organizing Committee

- (2024 – present) “ESO/MPE/MPA Seminars on Galaxy Evolution” (Co-Chair) Garching, Germany
- (September, 2026) Workshop: “MAVIS & ELT conference” Garching, Germany
- (July, 2026) Conference: “The Many Scales of Galaxy Environments” Ascona, Switzerland
- (June, 2026) Event: “ESO Science Day 2026” (Chair) Garching, Germany
- (October, 2025) Conference: “How Feedback Shapes the Nature of the CGM, Halo Gas, and Galaxies” Olbia, Italy
- (October, 2025) ESO Panel: “Observing Programmes Committee (OPC 116)” Online
- (July, 2025) Event: “ESO Science Day 2025” (Co-chair) Garching, Germany
- (May, 2025) Symposium: “19th IMPRS Symposium” Garching, Germany
- (April, 2025) Conference: “H₀, VLT & Celebrating Bruno Leibundgut’s contributions” Garching, Germany
- (2024 – 2025) “ESO Informal Discussion Cycle of Seminars” Garching, Germany
- (March, 2025) Conference: “The Role Of Accretion And Ejection Variability” Garching, Germany
- (December, 2024) Conference: “A decade of discoveries with MUSE and beyond” Garching, Germany
- (October, 2024) ESO Panel: “Observing Programmes Committee (OPC 115)” Online
- (June, 2024) Workshop: “Interferometric Data Reduction with CASA” (Chair) Rio de Janeiro, Brazil
- (2022 – 2023) “Cycle of Seminars on Astronomy” at Valongo Observatory Rio de Janeiro, Brazil
- (June, 2024) Winter School: “IV Winter School of the Valongo Observatory” Rio de Janeiro, Brazil

PRESENTATIONS

Invited talks

- (July, 2026) Conference: “Massive Galaxies and their Environments” Sexten, Italy
- (March, 2026) Department of Astronomy, Yale University New Haven CT, USA
- (March, 2026) ITC colloquium, CfA - Harvard University Boston MA, USA
- (November, 2025) ESO/MPE/MPA Seminars on Galaxy Evolution Garching, Germany
- (August, 2025) S-PLUS Survey Annual Meeting Rio de Janeiro, Brazil
- (May, 2025) PhD Days Conference Kufstein, Austria
- (March, 2024) VLA/NRAO Weekly Talk Socorro NM, USA

Contributed talks

- (July, 2026) Conference: “The Many Scales of Galaxy Environments” Ascona, Switzerland
- (February, 2026) Conference: “The End of Star Formation” Urbana-Champaign IL, USA
- (October, 2025) Conference: “How Feedback Shapes the Nature of the CGM, Halo Gas, and Galaxies” Olbia, Italy
- (July, 2025) Conference: “Galaxy Ecosystems” (flash talk) at Perimeter Institute Waterloo, Canada
- (January, 2025) Conference: “Horizons for Optical Long Baseline Interferometry” Paris, France
- (January, 2025) Lunch Talk at NRAO Socorro NM, USA
- (February, 2024) PhD Recruitment Workshop at Leiden University Leiden, Netherlands
- (February, 2024) IMPRS PhD Recruitment Workshop; Joint talk at MPA, MPE, LMU & ESO Garching, Germany

- (February, 2024) IMPRS PhD Recruitment Workshop; Joint talk at University of Bonn & MPIfR
- (November, 2023) Conference: “XVII IAU Meeting (LARIM)”
- (October, 2023) Conference: “Surveying the Milky Way” (flash talk) at Caltech
- (October, 2023) Conference: “XLVI Annual Meeting of the Brazilian Astronomical Society”
- (July, 2023) Conference: “1st Rio Dark Matter Meeting”
- (July, 2023) Symposium: “Graduate Research Week”
- (May, 2023) Symposium: “Academic Integration Week”
- (October, 2022) Hands-on Workshop: “The VLT High angular resolution Observations Workshop”
- (August, 2022) Symposium: “ESO Summer Research Programme”
- (May, 2022) Symposium: “Academic Integration Week”

Online
 Montevideo, Uruguay
 Pasadena CA, USA
 Rio de Janeiro, Brazil
 Rio de Janeiro, Brazil
 Rio de Janeiro, Brazil
 Santiago, Chile
 Garching, Germany
 Online

SUPERVISING & TEACHING EXPERIENCE

Supervising

- (2026) ESO Summer Research Program supervisor of Ms. Ágnes Bógdan (6-week intensive work)
- (2025) ESO Summer Research Program supervisor of Mr. Gustavo Gonçalves (6-week intensive work → MNRAS paper)
- (2024 – present) Co-supervising 2 undergrad students at the Valongo Observatory, Brazil (one with an ApJ paper)

Teaching

- (2022 – 2022) Teaching Assistant of Modern & Quantum Physics at the Institute of Physics of UFRJ
- (2021 – 2021) Teaching Assistant of Particle Physics, General Relativity and Cosmology for high school teachers

OBSERVATIONAL PROPOSALS

As Co-PI:

- 75.7 hours of HI observations with the Very Large Array (VLA): “*A Realistic Dark Matter Halo Model for our Milky Way based on Milky-Way Analogs*”: Proposal ID: VLA/24A-421
- 80 hours of HI observations with the Giant Metrewave Radio Telescope (GMRT): “*Building a More Realistic Dark Matter Halo for our Milky Way: a Focus on Nearby Milky-Way Analogs*”: Proposal ID: 44_006
- 100 hours of Perkin-Elmer Telescope (OPD): “*Looking at the stellar distribution: a focus on Milky Way-analogs*”

As Co-I:

- Large Program (150 nights) with the instrument KMOS on the Very Large Telescope (VLT): “*Emission Line Mapping of the Galaxy Population in the Cosmic Web Environments (EMPOWER survey)*”. PI: Paola Popesso
- 42 hours of observations with SOAR Telescope: “*Census of Austral Nearby Galaxies (CANGA survey): a focus on Milky Way analogs*”. PI: Karín Menéndez-Delmestre

CODING, PACKAGES AND INSTRUMENTS

X-ray

X-ray stacking

DR pipelines

Optical

LePhare, pPXF, X-Shooter DR pipeline

Radio

CASA, CARTA

Infrared

NIRCam, NIRCam grism, NIRSpect, X-Shooter, KMOS & GRAVITY

Simulations

IllustrisTNG (TNG50, TNG100 & TNG300); EAGLE; Magneticum

Others: Python, IDL (basic), TOPCAT, ^{3D}BAROLO, KINEMETRY, SAOImageDS9, QFitsView, SQL, MCMC, etc.