

NDIOGOU NIANG

Post doctoral Research Fellow

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RESEARCH INTERESTS

Neutron star low-mass X-ray binaries, X-ray pulsars, gravitational wave sources, X-ray binary evolution, MESA.

CURRENT POSITION

2025 – Today **TÜBİTAK Post doctoral Research Fellow** *Sabancı University*

- Faculty of Engineering and Natural Sciences, Istanbul, Türkiye.
- Project 125F197, supported by the Scientific and Technological Research Council of Türkiye (TÜBİTAK).

EDUCATION

02/2020 – 07/2025 **Ph.D. in Astrophysics** *Sabancı University, Istanbul*

- Thesis: *Rotational phases and long-term evolution of weakly magnetized LMXBs.*

09/2017 – 09/2019 **M.Sc. in Physics** *Boğaziçi University, Istanbul*

- Incomplete.

09/2013 – 06/2017 **B.Sc. in Physics** *Yıldız Technical University, Istanbul*

- Valedictorian.

TEACHING EXPERIENCE

02/2020 – 07/2025 **Teaching Assistant** *Sabancı University*

- Science of Nature II (NS 102): led the recitation sections of this active-learning course.
- Teaching Awards 2025: first place in the first-year teaching assistant category.
- Teaching Awards 2024: runner-up in the first-year teaching assistant category.
- PROJ 201 (undergraduate project course, Fall 2022): supervised a group of three sophomore students on the project “Genesis and the classification of black holes”.

08/2022 **Teaching Assistant** *Hakkı Ögelman Summer School*

- Physics for Astronomers, 8–12 Aug 2022, Istanbul, Türkiye.

09/2018 – 06/2019 **Teaching Assistant** *Ibn Haldun University*

- Led recitations in Science of Nature 101/102 for two semesters.

RESEARCH EXPERIENCE

2025 – 2027 **Long-Term Evolutionary Stages of Accreting Neutron Stars** *TÜBİTAK 1001*

- 1001 Scientific and Technological Research Projects Support Program, Project 125F197, supported by TÜBİTAK.
- Long-term evolution of AMXP and RMSP populations with the MESA code.

2023 – 2025 **Neutron Stars in Low-Mass X-ray Binaries** *TÜBİTAK 1001*

- 1001 Scientific and Technological Research Projects Support Program, Project 123F083, supported by TÜBİTAK.
- Formation and evolution of AMXPs with the MESA code.
- Formation and evolution of UCXBs with the MESA code.
- Evolution of the neutron star spin period, combining MESA outputs with newly developed analytical models.
- Studied the lack of X-ray pulsations in most LMXBs using a newly developed analytical model (published).

2021 – 2023 **Rotational Phases of Mass-Transferring Neutron Stars** *TÜBİTAK 1001*

- 1001 Scientific and Technological Research Projects Support Program, Project 120F329, supported by TÜBİTAK.
- Studied the torque reversals and rotational phases of accreting neutron stars with a newly developed analytical model (published).

PUBLICATIONS

- 2026 **The Torques Acting on Accreting Millisecond X-ray Pulsars in the Outburst and Quiescent States, and during the Long-Term Evolution** *MNRAS*, 549
F. Ertuğrul, A. A. Gençali, Ü. Ertan, N. Niang
doi:10.1093/MNRAS/STAG946
- 2026 **Evolution of Calvera and Descendants of Calvera-like Central Compact Objects** *MNRAS*, 551
A. A. Gençali, Ü. Ertan, F. Ertuğrul, Ş. Demirok, N. Niang
doi:10.1093/MNRAS/STAG1431
- 2026 **Binary and Neutron Star Evolution in Low-Mass X-ray Binaries on the Evolutionary Tracks of Accreting Millisecond X-ray Pulsars** *MNRAS*, 548, 1–19
N. Niang, Ü. Ertan, A. A. Gençali, F. Ertuğrul, A. Ulubay, E. Devlen, M. A. Alpar
doi:10.1093/MNRAS/STAG745
- 2024 **On the Lack of X-ray Pulsation in Most Neutron Star Low-Mass X-ray Binaries** *MNRAS*
N. Niang, Ü. Ertan, A. A. Gençali, O. Toyran, A. Ulubay, E. Devlen, . . . , E. Güğercinoğlu
doi:10.1093/MNRAS/STAE1595
- 2022 **The Torque Reversals of 4U 1626–67** *A&A*, 658, A13
A. A. Gençali, N. Niang, O. Toyran, Ü. Ertan, A. Ulubay, S. Şaşmaz, . . . , M. A. Alpar
doi:10.1051/0004-6361/202141772

AWARDS, HONORS & DISTINCTIONS

- 12/2025 **Teaching Award – First Place** *Sabancı University*
First place in the first-year teaching assistant category.
- 12/2024 **Teaching Award – Runner-up** *Sabancı University*
Runner-up in the first-year teaching assistant category.
- 06/2017 **Valedictorian** *Yıldız Technical University*
Ranked first in the graduating class of the B.Sc. in Physics.
- 07/2025 **Bronze Donation Medal** *Turkish Red Crescent*
Awarded for completing 10 voluntary blood donations.

CONFERENCES AND PRESENTATIONS

- 08/2026 15-min talk “Binary and Neutron Star Evolution in LMXBs on the Evolutionary Tracks of AMXPs” at the 46th COSPAR Scientific Assembly, Event E1.3 (1–9 Aug 2026), Florence, Italy.
- 06/2026 40-min talk “Binary and Neutron Star Evolution in LMXBs on the Evolutionary Tracks of AMXPs” at the IV. Beyazıt High Energy Astrophysics Meeting (14 Jun 2026), Istanbul University, Istanbul, Türkiye.
- 06/2025 Poster “Evolutionary Tracks of LMXBs Leading to AMXPs” at the European Astronomical Society Annual Meeting (EAS 2025, 23–27 Jun 2025), Cork, Ireland.
- 09/2024 15-min talk (in Turkish) “X-ray Pulsations in Neutron Star Low-Mass X-ray Binaries” at the 23rd National Astronomy Congress (2–6 Sep 2024), Istanbul University, Istanbul, Türkiye.
- 06/2024 Poster “X-ray Pulsations from Neutron Star Low-Mass X-ray Binaries” at the XMM-Newton 2024 Science Workshop – The X-ray Mysteries of Neutron Stars and White Dwarfs (5–7 Jun 2024), ESAC, Madrid, Spain.
- 05/2024 15-min talk “X-ray Pulsations from Neutron Star Low-Mass X-ray Binaries” at the II. Beyazıt High Energy Astrophysics Meeting (25 May 2024), Istanbul University, Istanbul, Türkiye.
- 12/2022 15-min talk (in French, online) “A Review of X-ray Astronomy” at the launch of the Senegalese astronomy clubs network, Orion Astro Lab (27 Dec 2022), Diourbel, Senegal.

SERVICE, MEMBERSHIPS, AND OUTREACH

2026 – Today	Junior Member	<i>International Astronomical Union (IAU)</i>
2025 – Today	Member	<i>African Astronomical Society (AfAS)</i>
2024 – Today	Member	<i>Turkish Astronomical Society (TAD)</i>
06/2019 – 07/2023	President <ul style="list-style-type: none">Assisted Senegalese students and promoted Senegalese culture in Türkiye.	<i>Senegalese Students Association in Türkiye</i>
09/2017 – 01/2020	Personal Assistant of the Honorary Consul of Senegal <i>Istanbul</i> <ul style="list-style-type: none">Translator in French, Turkish, and English.Assistance to Senegalese people.	<i>Honorary Consulate of Senegal,</i>
2017	Physics Department Representative <ul style="list-style-type: none">Mentored freshman and sophomore students.	<i>Yıldız Technical University</i>

SKILLS

Research Codes	MESA, POSYDON
Languages	Wolof (Native), French (Native), English (Fluent), Turkish (Fluent)