

# ANASTASIYA YILMAZ

## PERSONAL INFORMATION

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## EDUCATION

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**Charles University, Prague– Czech Republic**

*01 October 2020 - Current*

Ph.D. Student

Faculty of Mathematics and Physics– Astronomical Institute of Charles University

Astronomical Institute of the Czech Academy of Sciences

**Bogazici University, Istanbul– Turkey**

*07 September 2012 - 17 August 2018*

Master of Science + Bachelor’s of Science

Faculty of Education– Department of Mathematics and Science Education, Teaching Physics Program

## RESEARCH INTERESTS

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Spectral Evolution of Black Hole X-ray Binaries,

Study of X-ray Binaries (HMXBs and LMXBs),

Physics of Accretion Phenomena in X-ray Binaries,

Spectral and Timing Studies of Ultraluminous X-ray Sources

## GRADUATE-UNDERGRADUATE RESEARCH EXPERIENCE AND PROJECTS

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**Ph.D. Project: Evolution of Accretion States in Black Hole X-ray Binaries**

*01 October 2020 - Current*

Spectral evolution of accretion states and properties of the accretion disks in black hole X-ray binaries using observations with RXTE, XMM-Newton, Chandra, NuSTAR, Swift and MAXI with more detailed spectral models under the supervision of Dr. Jiri Svoboda.

**MSc. Project: Spin, Thermal and Magnetic Field Evolution of Young Neutron Stars**

*26 November 2018 - 28 July 2019*

Focus on the spin, thermal and magnetic field evolution of young neutron stars using observations with Chandra. Funded by The Scientific and Technological Research Council of Turkey (TUBITAK). Istanbul Technical University, Department of Physics Engineering High Energy Astrophysics Laboratory, under the supervision of Prof. K. Yavuz EKSI.

**Graduate Research on X-ray Analysis of Ultraluminous X-ray Sources using XMM-Newton, Chandra and NuSTAR Observations** *03 September 2018 - 28 July 2019*  
Focus on X-ray study of ultra-luminous X-ray sources in starburst galaxies and accretion phenomena using XMM-Newton, Chandra and NuSTAR observations.  
Istanbul Technical University, Department of Physics Engineering High Energy Astrophysics Laboratory, under the supervision of Prof. K. Yavuz EKSI.

**Project: Summer School of High Energy Physics for High School Students**  
*09-16 September 2018*

The project aims to encourage gifted and underprivileged high school students to pursue a career in science through engaging them in higher level experiments, lectures and projects. Funded by The Scientific and Technological Research Council of Turkey (TUBITAK).  
Bogazici University, Department of Physics, under the supervision of Prof. V. Erkcan OZCAN.

**Undergraduate Research on X-ray Analysis of Galaxy Clusters using XMM-Newton Observations** *18 June 2015 - 03 September 2018*  
Focus on cool-core galaxy clusters, chemical enrichment and evolution of galaxy clusters, radial temperature, pressure, entropy profiles of clusters and AGN activity using observations done with XMM-Newton.  
Bogazici University, Department of Physics High Energy Astrophysics Laboratory, under the supervision of Prof. E. Nihal ERCAN.

**Undergraduate research on Physics Education** *28 September 2015- 16 January 2015*  
Research Proposal: "Undergraduate Physics Students Misconceptions About Basic Astronomy Concepts: A New Course In Physics Teaching Program At Bogazici University".  
Bogazici University, Department of Education, under the supervision of Asst. Prof. Olga GKIOKA.

## COLLABORATION MEMBERSHIP

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ATHENA(Advanced Telescope for High ENergy Astrophysics) X-Ray Observatory team member,  
Science Working Group 3.3 ( SWG 3.3 : End Points of Stellar Evolution)

## PUBLICATIONS

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Gurbuz, S.; Adiguzel, A.; Ozcan, V.; Kirpici, S.; Yilmaz A. *Experimental High Energy Physics Summer School For High Schools*. Canadian Journal of Physics, 2019, 97(11): 1229-1234.  
DOI: 10.1139/cjp-2018-0823

## ACADEMIC POSITIONS

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**Istanbul Technical University, Department of Physics Engineering  
High Energy Astrophysics Laboratory, Istanbul/Turkey** Graduate Researcher  
26 November 2018 - 28 July 2019

· Project title: Spin, Thermal and Magnetic Field Evolution of Young Neutron Stars (The Scientific and Technological Research Council of Turkey (TUBITAK)).

## TECHNICAL SKILLS

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### Data Analysis

XMM-Newton (X-ray Multi-Mirror Mission, The European Space Agency-ESA) - SAS (Science Analysis Software) + ESAS (Extended Source Analysis Software)

Chandra X-ray Telescope (NASA) – CIAO (Chandra Interactive Analysis of Observations)

NuSTAR (Nuclear Spectroscopic Telescope Array, NASA)

The Neil Gehrels Swift Observatory (NASA)

RXTE (The Rossi X-ray Timing Explorer)

SUZAKU (NASA)

### Software

Python: Intermediate

HTML: Intermediate

Machine Learning(with python): Beginner

C++: Beginner

## SEMINARS AND CONFERENCE TALKS

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Talk at the Week of Doctoral Students, Faculty of Mathematics and Physics of Charles University: "Evolution of Accretion States in Black Hole X-Ray Binaries" (17 June 2021 Prague, Czech Republic).

Seminar at the Astronomical Institute of the Czech Academy of Sciences, "Timing and Spectral Properties of Ultraluminous X-ray Sources: Black Holes vs. Neutron Stars" (15 January 2021 Prague, Czech Republic).

## CONFERENCES/WORKSHOPS AND ACADEMIC SCHOLARSHIPS

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### Conferences, Schools and Workshops

X-ray Spectral Fitting Winter School (7-11 February 2022, Hybrid/Prague, Czech Republic)

50 Years Astronomical X-ray Spectroscopy in the Netherlands ( 17-19 January 2022, Virtual)

Timing X-ray Binaries: On the Road to eXTP (7-8 October 2021, Virtual)

Chandra Data Science Workshop (17 August-1 September 2021, Virtual)

X-ray Data Modeling of Accreting Black Holes Workshop (17-25 July 2021 Hradec nad Moravici, Czech Republic)

The Spring 2021 NICER Analysis Workshop (10-14 May 2021, Virtual)

The Transient High-Energy Sky and Early Universe Surveyor (THESEUS) Conference (23-26 March 2021, Virtual)

Chandra Frontiers in Time-Domain Science Workshop (7-30 October 2020, Virtual)

AtomDB Workshop and Advanced Spectroscopy School (3-5 August 2020, virtual)

Workshop on Quantum Computing and Quantum Programming, Quantum Turkey, (7-8 March 2020 Istanbul, Turkey)

The Scientific and Technological Research Council of Turkey, Research Institute for Fundamental Sciences "Gravitational Waves: New Challenges and Opportunities" Summer Research School (7-14 July 2019 Gebze, Turkey)

The Scientific and Technological Research Council of Turkey, Research Institute for Fundamental Sciences "Quantum to Cosmos: Ideas and Applications" Summer Research School (25 June -05 July 2019 Gebze, Turkey)

12th INTEGRAL Conference and 1st AHEAD Gamma-ray Workshop (11-15 February 2019 Geneva, Switzerland)

Istanbul University High Energy Physics, Astrophysics and Cosmology Workshop (30-31 January 2019 Istanbul, Turkey)

Istanbul University 7. Physics Workshop (13-14 February 2017 Istanbul, Turkey )

Istanbul University 6. Physics Workshop (18-19 February 2016 Istanbul, Turkey)

### **Scholarships and Academic Support**

The Scientific and Technological Research Council of Turkey, Research Institute for Fundamental Sciences, Full Scholarship for "Gravitational Waves: New Challenges and Opportunities" Summer Research School (7-14 July 2019 Gebze, Turkey)

The Scientific and Technological Research Council of Turkey, Research Institute for Fundamental Sciences, Full Scholarship for "Quantum to Cosmos: Ideas and Applications" Summer Research School (25 June -05 July 2019 Gebze, Turkey)

AHEAD (Integrated Activities in the High Energy Astrophysics Domain) Trans-National Access Support for Data Analysis – Support for visit to the Astronomy Department, University of Geneva (04-09 February 2019 Geneva, Switzerland)

The Scientific and Technological Research Council of Turkey (TUBITAK), Scholarship for Undergraduate School at the TUBITAK National Observatory (06-11 August 2018 Antalya, Turkey)

Turkish Government Graduate Academic Fund (09 October 2018-June 2020)

Turkish Government Undergraduate Academic Fund (06 September 2012- 09 June 2018)

Istanbul Technical University Alumni Association (Graduate Scholarship) (15 October 2018- 15 July 2019)

Bogazici University Alumni Association (Undergraduate Scholarship) (June 2017-August 2018)

### **LANGUAGE SKILLS**

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English: Proficient.

Turkish: Proficient.

German: Intermediate.

French: Beginner.