Shahrzad Sheikhi

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Education

- **M. Sc. in physics - Astronomy and Astrophysics:** Alzahra university, Tehran, Iran (Sep 2021 - Feb 2024) - Grade: 16.5 / 20
- **B. Sc. in Physics - Solid State:** Alzahra University, Tehran, Iran, (Aug 2016 - June 2021) - Grade: 16 / 20

Research and Academic Projects

- **Deciphering evolution of chemical spots on HgMn stars , Currently working** - Using FEROS data from ESO data server to study changes in surface abundances of certain types of chemically peculiar stars.

- **standard candle for absolute properties of eclipsing binary stars , In process** - Upgrading the TOPCAT data server for eclipsing binary stars using exact properties of systems.

- **Identifying 1RXS J180408.9-342058:** Conducted photometric and SED analysis using deep learning approaches with EFOCS data in ESO data server to identify our object as an ultra compact X-ray binary (UCXB) - (Feb 2024)

- **B.Sc. Project:** Simulating the evolution of a main sequence star and a binary system in MESA platform. (Sep 2019 - Mar 2020)

- **M.Sc. Thesis:** GeV radiation in GRBs
  Supervisors: Dr. Fatemeh Rastegarnia (ICRANet, Italy) - Prof. Taghi Mirtorabi (Alzahra University, Iran) - Dr. Arash Danesh (IPM, Iran)

Publication

- Sheikhi, s., Noroozi, S., Rastegarnia, F., Moradi, R. (2024). Determining the Mass and Spin of the Black Hole in GRB 220101A Using 0.1-100 GeV Data Observed by Fermi/LAT. [link]

Outreach Experience (10+ years)

- Delivered interactive science demonstrations to 10+ middle school students to increase interest in astrophysics.
- Organized Astro Festivals, school visits and night sky observations using 14” dobsonian telescopes and binoculars.

Computer Skills

- **Programming:** Python ((including NumPy, Matplotlib, SciPy, Astropy, Pandas) for data processing and analysis; familiar with C++ and JAVA script; Machine Learning; LaTex.
- **Astronomy Software:** FERMI, Swift, HEASARC, GTBurst, 3ML, ESO science data server, MESA, SYMBAD, TOPCAT.
- **Graphic Software**: Adobe Photoshop, Adobe Illustrator, 3D motion.

HONORS

- Astrophysics and Astronomy national high school Olympiad 1st ranked (Gold medal) and awarded full funding for B.Sc. and M.Sc. 2014
- Ranked 125th among 60000+ applicants in the national entrance exam (Konkur). 2021

Teaching Experience:

- Teaching assistant, Alzahra university (Astrophysics I, Numerical calculations, Cosmology)
- Science Teacher in private kindergarten and elementary schools (2022-2025)
- Physics Teacher in middle schools (2020-2024)
- Astronomy teacher in Khayyam association (2015-2020)

Selected conference Presentation

- **17th Marcel Grossman Meeting:** Exact properties of the blackhole inside GRB220101A. (Pescara, Italy, 2024)
- **2nd Conference on Astronomy Heritage of the Middle East(AHME2)**: History's Cherry on Top: Leveraging The History of Astronomy for Modern Inspiration (Yerevan, Armenia, 2025)
- **International Symposium of High Energy Physics (ISHEP):** Determining the mass and spin of black holes using 3ML data (Antalya, Turkey, 2024)

INTERNATIONAL WORKSHOPS AND CONFERENCES SELECTED TO ATTEND

- **JWST-UVIT Workshop**, 20–31 Oct 2025, CHRIST University, Bangalore – Full funding granted
- **IAU/I-HOW Astronomy Workshop, Optical Astronomy**, Sharjah, UAE, 12–23 Jan 2025 - Full funding granted
- **4th Regional Astronomical Summer School,** Byurakan, Armenia Sep 2025 - Funding Granted
- **5th Zeldovich meeting** – Yerevan, Armenia, June 2023 - Funding Granted
- **3rd Astronomy Survey and Big Data symposium** – Yerevan, Armenia, October 2025 - Funding Granted
- **7th Shaw-IAU Workshop on Astronomy for Education** - Funding Granted
- **30th and 31st IPM Physics spring school** – Tehran, Iran, April 2023

Organizing

- 1st Astronomy workshop on gamifying education method in astronomy – Tehran, Iran, VaDoostan, 2025
- High energy astronomy for kindergarten kids – Tehran, Iran, BioMoon, 2025
- Gamma Ray radiations – Tehran , Iran, Gonbade Mina Planetarium, 2024 -
- High Energy Astrophysics Upcoming Data – Tehran, Iran, Alzahra University

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Languages

- **Persian**: Native
- English: Fluent
- German: Advanced
- Python Programming: Professional