

Anish Kalsi

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Education

Nicolaus Copernicus Astronomical Center of the Polish Academy of Sciences, Poland **Dec 2025**

Doctor of Philosophy in Astronomy

Supervisor: Dr. Krzysztof Helminiak

University of Padova, Italy **2023 - 2025**

Master of Science in Astrophysics and Cosmology; Grades: 108/110

Thesis: Spectro-photometric study of the population of B/Be stars in the open cluster Trumpler 11

Supervisors: Prof. Lydia Cidale (UNLP) and Dr. Antonino Milone (UniPd)

Delhi Technological University (Formerly DCE), India **2019 - 2023**

Bachelor of Technology (B.Tech) in Engineering Physics

Minor in Computational Intelligence; Final Grade: 8.87/10

Publications

1. A Catalogue of Low-Mass X-ray Binaries in the Galaxy: From the *INTEGRAL* to the *Gaia* era. F. Fortin, **A. Kalsi**, F. García, A. Simaz-Bunzel, and S. Chaty. *Astronomy and Astrophysics*, Vol. 684, January 2024. [Link](#)
2. GRB Optical and X-ray Plateau Properties Classifier Using Unsupervised Machine Learning. S. Bhardwaj, M.G. Dainotti, T.S.S Venkatesh, A. Narendra, **A. Kalsi**, E. Rinaldi, and A. Pollo. *Monthly Notices of the Royal Astronomical Society*, Volume 525, Issue 4, Pages 5204–5223, August 2023. [Link](#)

Conference Proceedings:

1. Comparative Study of Unsupervised Machine Learning Methods for Membership Association in Clusters Using GAIA DR3 Data. **A. Kalsi**, D. Tyagi, H. Choudhary, and A. Kumar. *ICCASA 2023 Proceedings*, European Chemical Bulletin. [Link](#)
2. Analytical Studies of Electrostatic Solitary Structures in an Ultra-Relativistic Plasma and the Evolution of Rogue Wave. **A. Kalsi** and S. Chandra. *Proceedings of the Summer Workshop on Plasma Physics 2020* (ISBN 9786204198934). [Link](#)

Experience

Universidad Nacional de La Plata, Argentina **Mar 2025 - Aug 2025**

International Exchange Program (Master's Thesis)

La Plata, Argentina

- * Search for B/Be stars in open cluster, Trumpler 11, using photometric and spectroscopic data from Gemini Observatory
- * *Skills*: Stellar Astrophysics, Photometry, Spectroscopy.

AstroParticule et Cosmologie (APC) laboratory, Université Paris Cité **June 2023 - Aug 2023**

Summer Internship 2023

Paris, France

- * Supervisor: Prof. Sylvain Chaty, catalogue of Low-mass X-ray Binaries (LMXBs) [Catalogue](#)
- * *Skills*: Intense literature review and X-ray binaries spectral study.

Delhi Technological University **Aug 2022 - July 2023**

B.Tech Final Year Project (Bachelor's Thesis)

Delhi, India

- * Analysis of machine learning algorithms to determine membership probability of stars in clusters using Gaia DR3 data.
- * *Skills*: Literature survey, GMM, DBSCAN, and pyUPMASK in PYTHON, scientific writing and group management.

Indian Institute of Technology, Hyderabad **June 2022 - July 2023**

Summer Internship 2022

Remote

- * Simulated populations of repeating Fast Radio Bursts (FRBs) sources across the sky. Determined observation patterns of RFRBs by CHIME and its hypothetical variants over a two-year observation run.
- * *Skills*: Simulations in PYTHON and radio observations.

Indian Institute of Technology, Bombay **June 2022 - Sept 2022**

Krittika Summer Project 3.0

Remote

- * Photometric analysis using SExtractor and PSFEx to obtain a color-magnitude diagram and determine the age of the star population of globular clusters using PanSTARRS data.
- * *Skills*: Photometry

SciComm

Dec 2019 - Sept 2020

Educator (Experimental Science) and Subject Matter Expert

Delhi, India

- * Taught Science and Astronomy to students by taking sessions and workshops at schools (SRGS Delhi West, TAFS Delhi) and Astrocamps. Night sky observation using telescopes and astrophotography.
- * Content for Physics, Chemistry, Mathematics, and Logical Reasoning. Authored a high-school-level computer science book for the college entrance exam (CUET). (May 2022)
- * *Skills*: Science communication

Relevant Skills

Programming Languages: PYTHON (AstroPy and scikit-learn), C/C++, SQL, R.
Softwares and OS: IRAF, MATLAB, L^AT_EX, Linux.

Awarded Scholarships

- **Ulisse Exchange Program 2024** for the master thesis at Universidad Nacional de La Plata (UNLP), Argentina. Benefits: travel expenses (up to 1500 Euros) and 700 Euros per month.
- **Regione Veneto Scholarships**: Full tuition fee waiver and 7655 Euros (in 2024)/ 8068 Euros (in 2025) per annum.
- **Charpak Lab Scholarship 2023**: to pursue a research internship in France. Benefits: 700 Euros per month.
- **Merit-Cum-Means Scholarships** Benefits: 50,000 INR per annum from 2019 till 2022.

Extracurricular

DelTech Engineering Physics Technical Hub (DEPTH)

Student President

- * Elected as President (2022-23) of *DEPTH*, the official technical and physics society of Delhi Technological University(DCE).
- * Organised and led numerous events, workshops, expert lecture series, and educational trips, and formed teams to participate in inter-university events.
- * Collaborated and Contributed as a core team member in the Cosmology Club, DTU.

Other Projects (Physics)

- * Joint Institute for Nuclear Research (JINR), May 2021 - Mar 2022. (Remote)
Study of OPERA experiment [Project Report](#). Analysis of Heavy Ions collisions events [Project Report](#)
- * Defence Research and Development Organisation (DRDO) SSPL, July 2021 - Aug 2021. (Delhi, India)
Experiments with/on graphene-based Terahertz detectors and fabrication processes with applications in Astronomy.

Courses and Workshops

- * Completed various astronomy and astrophysics MOOC courses.
- * Attended several astronomy summer schools, workshops, conferences, and lectures like **YAM CAMK 2026**, **EDUCADO-MWGaiaDN training school 2026**, **ExCoDOT 2025**, **LAPIS Astronomy 2025**, **Karpacz Winter School 2025**, **Winter School Tonale 2024**, **EAS Padova 2024**, **ESSENA 2024**, **ATSOA 2023**, IIA Summer School 2022, IUCAA-ISSAA 2021 and 2022, InPTA Student Week 2021 and 2022, RAWS 2021, and many more.
[Certificates](#)

Academic Referees

Dr. Krzysztof Helminiak

Associate Professor, Nicolaus Copernicus Astronomical Center of the Polish Academy of Sciences, Poland
Email: xysiek@ncac.torun.pl

Prof. Lydia Cidale

Professor, Universidad Nacional de La Plata (UNLP), Argentina
Email: lydia@fcaglp.unlp.edu.ar

Dr. Antonino Milone

Associate Professor, University of Padova, Italy
Email: antonino.milone@unipd.it