Apostolos Menis

MSc Astrophysics Student, LMU Munich
Apo.Menis@campus.lmu.de — amenis@mpe.mpg.de
+49 175 7681571 – ORCID – LinkedIn – Personal Website

RESEARCH INTERESTS

Active Galactic Nuclei (AGN), AGN Feedback, Galaxy Clusters, Observational Astrophysics, X-ray Astronomy, Cosmology

EDUCATION

LMU Munich, Munich, Germany — 10.2025 — Present
MSc Astrophysics — GPA: 1.17 (Sehr Gut)
Thesis Title: *AGN Feedback in Groups of Galaxies*

National and Kapodistrian University of Athens (NKUA), Athens, Greece — 10.2021 — 06.2025
BSc Physics — GPA: 8.59/10.00 (Excellent)
Thesis Title: *The Fraction of AGNs Detected in Clusters from Deep and Wide-Field X-ray Surveys*

Panhellenic University Entrance Examinations, Greece — 06.2021
Overall Score: 18,088/20,000

Ionideios High School of Piraeus, Piraeus, Greece — 09.2018 — 06.2021
High School Diploma — GPA: 19.9/20.0

RESEARCH EXPERIENCE

Max Planck Institute for Extraterrestrial Physics (MPE) / LMU Munich — Garching, Germany
MSc Thesis – AGN Feedback in Groups of Galaxies — 09.2026 — Present
Supervisor: Dr. Esra Bulbul

- Investigating AGN feedback and its impact on the intragroup medium in galaxy groups.
- Analysing X-ray observations to study the interaction between central AGNs and the surrounding hot gas.

IAASARS, National Observatory of Athens — Athens, Greece
Research Internship, BSc Thesis & Independent Research — Summer 2024 — Present
Supervisor: Dr. Elias Koulouridis

- Investigated the distribution and incidence of active galactic nuclei (AGNs) in galaxy groups and clusters using X-ray observations.
- Analysed astrophysical catalogues and observational data from *eROSITA* and XMM-Newton using statistical and computational methods.
- Studied the dependence of AGN activity on cluster-centric distance, galaxy population, and cluster properties, such as cluster mass and redshift.
- Compared AGN populations identified in wide-field and deep X-ray surveys, including eRASS1 and XCLASS.
- Continued the BSc thesis work as an independent research project following graduation.

National and Kapodistrian University of Athens (NKUA) — Athens, Greece
Astrophysics Laboratory Project – Spectroscopic Study of S-type Stars — 12.2024 — 01.2025
Supervisor: Professor Theocharis Apostolatos

- Analysed spectroscopic observations of S-type stars orbiting the Galactic Centre.
- Determined stellar radial velocities and combined them with the projected orbital motion on the sky.
- Derived orbital parameters and estimated the mass of the central supermassive black hole associated with Sgr A*.

National and Kapodistrian University of Athens (NKUA) — Athens, Greece
Research Project – Gravitational Lensing and X-ray Dust Scattering — 10.2023 - 02.2024
Supervisor: Assistant Professor Maria Petropoulou

- Studied gravitational lensing and the time delays produced by a point-mass gravitational lens.
- Investigated the scattering of X-rays emitted by gamma-ray bursts (GRBs) by interstellar dust clouds and the resulting time-delay signatures.

PUBLICATIONS

Koulouridis, E., **Menis, A.**, & Drigga, E., "AGN Activity Across Cluster Environments: A Comparison Between XCLASS and eRASS1." *Manuscript in preparation.*

CONFERENCES, WORKSHOPS & SCHOOLS

Annual Meeting of the Astronomische Gesellschaft (AG2026) Garching, Germany
Building Blocks of Cosmic Structure – Poster Presentation 09.2026
"The fraction of AGNs detected in clusters from deep and wide-field X-Ray surveys"

6th Hel.A.S. Astrophysics Summer School – Multi-Messenger Astronomy Athens, Greece
National and Kapodistrian University of Athens 08.2026

Athens Xmas Workshop in Theoretical Physics 2025 Athens, Greece
National and Kapodistrian University of Athens 12.2025

Summer School of Gravity and Cosmology 2024 Athens, Greece
IAASARS, National Observatory of Athens 04.2024

3rd Python & Machine Learning Bootcamp Athens, Greece
INPP, NCSR Demokritos 07.2023

TECHNICAL SKILLS

- **Programming & Scripting:** Python, C, SQL, HTML/CSS, Bash/Unix
- **Scientific Computing & Data Analysis:** NumPy, SciPy, pandas, Matplotlib, Astropy, Jupyter
- **Astronomy & Scientific Software:** TOPCAT, SAOImage DS9, MATLAB, LoggerPro
- **Development & Tools:** Linux, Git, GitHub, LaTeX, Astro, Figma

SELECTED COURSEWORK

Master's Courses

- Introduction to Advanced Astrophysics – 1.3
- Cosmology and Large-Scale Structure – 1.3
- Galaxy Formation from Cosmic Dawn to Present Day – 1.3
- Frontiers in Multi-Messenger Astrophysics – 1.0
- Radiative Processes and Applications in Space – 1.0
- Deep Learning for Physicists – 1.3

Bachelor's Courses

- Stellar Astrophysics – 10/10
- Astrophysical Fluids – 10/10
- Astroparticle Physics and Cosmic Rays – 10/10
- General Theory of Relativity – 9/10
- High-Energy Astrophysics – 8/10
- Space and Solar Physics – 9/10

TEACHING & OUTREACH

Private Tutoring Athens/Munich
Physics and Mathematics Tutor 2021 — Present

- Provided individual tutoring in university-level physics and mathematics, including Special Relativity, Computational Physics, Calculus, and Electromagnetism.
- Tutored high-school students in Physics and Mathematics, including preparation for university entrance examinations.

StuFessor.gr Online
Educational Content Creator – Electromagnetism 2026 – Present

- Designed and recorded a Greek-language university-level electromagnetism video series, combining theoretical instruction with detailed problem solving.

LANGUAGES

Greek	Native
English	C2 – Fluent; IELTS Academic: 8.0/9.0
German	B1 – Intermediate; Goethe-Zertifikat B1