

ADRIANA ZACHAROVÁ

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bshidvb

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Brno, Czech Republic

EDUCATION

Master's Degree in Astrophysics

Masaryk University

Sept 2024 – Ongoing

Thesis topic: *Investigating Stellar Populations and the Impact of a Variable Initial Mass Function in High-Redshift Galaxies*

Thesis supervisor: Tereza Jeřábková (Assistant Professor at MUNI)

Thesis consultant: Zhiqiang Yan (Researcher at NJU)

In thesis we are investigating the role of a variable stellar initial mass function (IMF) in shaping the properties of massive galaxies formed within a few hundred million years after the Big Bang. The scope includes chemical modeling, comparisons with cosmological simulations, and observational data.

Zacharova et al. in preparation

Bachelor's Degree in Astrophysics

Masaryk University

Sept 2021 – June 2024

Thesis topic: *Building a Reissner-Nordström black hole from scratch*, grade: very good

Thesis supervisor: Klaus Bering Larsen (Associate Professor at MUNI)

The aim of the thesis was to prove that energy of a charged black hole can be expressed using sum of energies of infalling, spherically symmetric, infinitesimally thin shells of matter.

WORK EXPERIENCE

Research Internship

Masaryk University

June 2025 – Aug 2025

- Research internship under the supervision of Dr. Tereza Jeřábková, focused on the chemical evolution of high-redshift galaxies

Production of Video Series about Astronomy for Wide Audience

Masaryk University

Mar 2024 – Ongoing

- Producer of department's science education videos – *Conversation about the Cosmos*
- Shooting, editing audio, video, translating subtitles and adding graphics
- Working in a small team, experience with communicating and managing my own work-time
- Experience with Adobe Premiere Pro, Adobe Photoshop, Adobe Audition

Science Communication

Masaryk University

Oct 2022 – Ongoing

- Participation in events for public (STARMUS, Researchers' night, Festival of Science, MjUNI – junior university)
- Organising and designing science education activities (Researchers' night)

ATTENDED CONFERENCES

European Astronomical Society (EAS)

Cork, Ireland

06/2025

Presented ePoster *Variable IMF and Stellar Populations in High-Redshift Galaxies*

SKILLS

Programming: Python (sklearn, tensorflow, seaborn, lightkurve, gdt.core – fermi-gdt, numpy, scipy, astropy, matplotlib), LLM OpenAI Codex CLI

OS: Linux (Ubuntu and Debian), Windows, MacOS

Software: CASA, DS9, VSCode, Munipack, Rawtran, OBS Studio

Other: Bash, \LaTeX

LANGUAGES

Slovak

Czech

English

German

Spanish



HOBBIES

Advocating for social and climate justice, climate activism, veganism, star gazing and observations, cycling, hiking, creative writing, drawing and painting

Member of Astronomers for Planet Earth (A4E)

REFERENCES

Master Thesis supervisor: **Dr. Tereza Jerabkova**

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Master Thesis consultant: **Dr. Zhiqiang Yan**

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Outreach collaborator and co-presenter of astronomy vidcasts: **Prof. Norbert Werner**

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