

Alexander J. Dimoff

Max Planck Institute for Astronomy (MPIA), Heidelberg, Germany

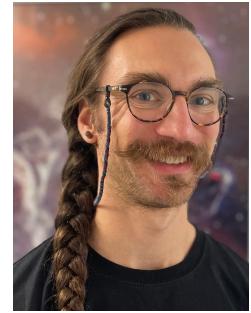
Date of Birth: 11. December, 1994

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Education

Goethe University Frankfurt

PhD in Astrophysics, Germany

2022–2025

Research focus: nuclear astrophysics; spectroscopy, binary stellar evolution, nuclear experiments.

Advisors: Prof. Dr. Camilla J. Hansen, Sen. Lec. Dr. Richard J. Stancliffe

San Diego State University

M.Sc. in Astronomy, USA

2019–2021

Thesis: Apsidal Motion in Eclipsing Binaries.

Advisor: Prof. Dr. Jerome Orosz

Pennsylvania State University

B.Sc. in Astrophysics, USA

2013–2017

Minors: Physics, German Language & Culture.

Advisor: Evan Pugh Prof. Dr. James Kasting

Research

Max Planck Institute for Astronomy

Postdoctoral Researcher, Heidelberg, Germany

2025–Present

Star-planet connections through n-capture elements, radiogenic heating in exoplanets.

Goethe University Frankfurt Institute of Applied Physics and MPIA

Doctoral Researcher, Frankfurt and Heidelberg, Germany

2022–2025

Spectroscopy, stellar abundances, radial velocities, binary accretion and evolution, nuclear reaction cross-sections.

San Diego State University

Master's Researcher, San Deigo, USA

2020–2021

Orbital dynamics of massive binaries, apsidal motion, stellar structure.

Pennsylvania State University

Post-graduate Research Assistant, Pennsylvania, USA

2017–2019

Isotope fractionation in stellar nebulae, modeling equilibrium and kinetic chemistry.

Teaching and Mentoring

Goethe University Frankfurt

Master's Student Co-Supervision, Frankfurt, Germany

2024–2025

Orbital dynamics and exoplanet studies; limb-darkening laws for high-metallicity stars.

Goethe University Frankfurt

Teaching Assistant, Frankfurt, Germany

2022–2024

Courses: Astronomy I & II (2 semesters).

San Diego State University

Teaching Associate, San Diego, USA

2021

Astronomy 101 lecture course (1 semester).

San Diego State University

Teaching Associate, San Diego, USA

2020–2021

Astronomy 109 laboratory (3 semesters).

Awards and Scholarships

- William and Nhung Booth Scholarship (2021)
- Ruth and Clifford Smith Astronomy Fellowship (2020)
- Reginal F. Bueller Endowment Scholarship (2020)
- William F. Lucas SDAA Endowment Scholarship (2020)
- Awona W. Harrington Astronomy Scholarship (2020)
- NASA Pennsylvania Space Grant (2017)

Skills

Languages: English (native), German

Programming: Python, Bash, FORTRAN, Julia, ROOT

Libraries: NumPy, SciPy, Astropy, Pandas, Scikit-Learn, JAX, Numba, Matplotlib

Tools: Git, LaTeX, HPC (MPI/OpenMP, Slurm), ADQL/SQL

Methods: MCMC, Bayesian Inference, Maximum Likelihood, Gaussian Processes, Cross-Correlation, Uncertainty Quantification, Data Visualization

Professional Development

- Max Planck International Research School (IMPRS), PhD student (2022 - 2025)
- Student Representative MPIA, Max Planck Society (2022 – 2024)
- Sustainability Committee Member, MPIA (since 2023)
- Organizer, MPIA Galaxies and Cosmology department retreat (2023)
- Workshops and Schools: ESO Stellar Spectroscopy Workshop (2024), ECR Astronuclear School (2024), Russbach Winter School (2023), Ondrejov Observing School (2022), NPA-X Summer School CERN (2022)

Conferences and Presentations (selected)

- 2025 - s-Process Signatures of Binary Interaction across the Milky Way (AIP, Potsdam, Germany)
- 2025 – Modeling the Progenitors of Low-Mass Post-Accretion Binaries (sirEN Conference, Italy)
- 2025 - Modeling the Progenitors of Low-Mass Post-Accretion Binaries (ESO, Chile)
- 2024 – Connecting Binary Accretion and Abundances (Nuclear Physics and Astrophysics XI, Germany)
- 2024 – Tracing Carbon from AGB Stars through Binary Accretion (NAOJ, Tokyo)
- 2024 – S-Process Nucleosynthesis in AGB Stars (IAP Seminar, Frankfurt; XIV Torino AGB Workshop, Italy)
- 2023 – s- and i-Process Nucleosynthesis (i-Process Workshop, Cyprus; Russbach Winter School, Austria)
- 2022 – Spectral Observations of s-Process Stars (ChETEC-INFRA, Italy; Ondrejov School, Czech Republic)