# DR. MIRIAM KEPPLER

**Data Scientist • Astronomer • Space Science & Earth Observation Enthusiast**

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## EXPERIENCE

### Postdoctoral Researcher
**The University of Arizona**

06/2022 – Ongoing | Tucson/AZ, USA

- Developing a data processing pipeline for the NASA-funded Astrophysics UV SmallSat mission *Aspera*
- Leading the development of an instrument simulator to generate *Aspera* mock observations for pipeline testing
- *Aspera* data management: Defining, developing, and prototyping data products; interfacing with the Archive
- Analyzing UV geocoronal background line emission from archival data taken by the Far Ultraviolet Spectroscopic Explorer (FUSE) mission
- Successfully lead a proposal for observing time at the highly competitive Hubble Space Telescope (worth 30 orbits of observing time)

### Postdoctoral Researcher (Graduate researcher until 11/2020)
**Max Planck Institute for Astronomy**

11/2016 – 10/2021 | Heidelberg, Germany

- Processed and analysed multi-wavelength astronomical data from the near-infrared to sub-millimeter regime
- Developed radiative transfer models of protoplanetary disks to differentiate between image artifacts and physical signals
- Led the discovery of the first planet outside the solar system that is still at the stage of formation (*link to press release)*
- Published $\gtrsim$ 40 refereed articles as first or co-author in international journals
- Coordinated projects within large international teams with 100+ collaborators
- Conceived, proposed and executed observing campaigns at international telescopes (81 hours of observing time granted)
- Presented oral and written contributions to 12 international conferences

### Undergraduate Researcher (Master Project)
**Institute of Planetology and Astrophysics Grenoble**

10/2015 – 10/2016 | Grenoble, France

- Processed and analysed ground-based spectroscopic data to search for new planets
- Executed observing campaigns at telescopes in France and Chile during 18 nights

### Undergraduate Researcher (Bachelor Project)
**Max Planck Institute for Extraterrestrial Physics**

03/2013 – 07/2013 | Munich, Germany

- Conceived numerical simulations to model the movement of stars in the Galactic Center

## ABOUT

PhD astronomer with 8+ years experience in the exploitation and analysis of large and complex data sets in fundamental research. Strong team player with enthusiasm for contributing expertise in an innovation oriented dynamic environment.

## STRENGTHS

Collaboration | Problem solving | Communication | Project management | Leadership | Operations | Enthusiasm

Remote sensing | Python | Data Analysis | Image processing | Spectroscopy | Scientific programming

## ACHIEVEMENTS

**Successful HST observing grant (08/2023)**
Got 30 orbits of observing time granted on highly competitive Hubble Space Telescope, including a grant worth $107k

**ESA Astronaut Program finalist (06/2022)**
Among top 2% of > 22000 candidates applying for the new corps of Astronauts of the European Space Agency

**Otto Hahn Medal (06/2022)**
Awarded for an outstanding PhD Thesis by the renowned Max Planck Society

**Best PhD Thesis Award (06/2021)**
Awarded by Astronomy & Astrophysics, one of the leading international scientific journals of the field

**Ernst Patzer Award (11/2018)**
Awarded for the best scientific publication by a young astrophysicist in Heidelberg by the Ernst Patzer Foundation (11/2018)

# EDUCATION

### Ph.D. Astronomy ('summa cum laude')
**University of Heidelberg**

Nov 2016 – Nov 2020

*Thesis: Giant Planet Formation in Disks: An Observational Perspective*

### Master of Science (M.Sc.) Physics
**University of Heidelberg**

Oct 2014 – Oct 2016

*Thesis: The Search for Extrasolar Planets around Young, Nearby Stars*

### ERASMUS study abroad, Physics
**Université Grenoble Alpes, France**

Sept 2013 – Sept 2014

Classes in Physics and Astronomy

### Bachelor of Science (B.Sc.) Physics
**University of Heidelberg**

Oct 2010 – Oct 2013

*Thesis: The Galactic Center Cloud G2 and Scattering Processes in the Young Stellar Ring*

# FURTHER TRAINING

### Foundations of Open Science Skills (Fall 2023)
**CyVerse / University of Arizona**

Learnt about foundations of open science during 8-week long interactive workshop. Topics covered include FAIR data, data management plans, documentation, version control, reproducibility.

### PI Launchpad Workshop (07/2023)
**NASA / University of Michigan**

Competitive workshop about how to become a NASA PI.

### Leading for Tomorrow Program (11/2021)
**German Physical Society (DPG)**

Completed competitive program for early career physicists on the training of leadership skills.

# COMMUNICATION & ORGANIZATION

- Organizing social events for the University of Arizona (UA) Postdoc Community as part of the UA Postdoc Association.
- Mentored a female high-school student within the online STEM platform 'CyberMentor'
- Communicated work to non-scientific audience (articles for amateur astronomy magazine, public talks, interviews, podcasts; e.g., NPR, BBC News). (*link to public talk in German)*

# TECHNICAL SKILLS

Operating systems: Linux | MacOS

Programming: Python | basics of C/C++

Tools & libraries: git | NumPy | SciPy | Pandas | Scikit-learn | Plotly | PyCharm

Software: LaTeX | Keynote | MS Office

# LANGUAGES

**German (native)**

**English (near-native)**

**French (near-native)**

**Spanish (intermediate)**

**Japanese (beginner)**

# VOLUNTEERING

- **Served as reviewer for the University of Arizona Postdoc travel grants**
- **Organizing events for postdocs as member of social events committee of University of Arizona Postdoc Association**
- **Volunteered at the Arizona-Sonoran Desert Museum (Tucson, Arizona)**
- **Mentored a female high-school student within the STEM platform 'CyberMentor'**

# MEMBERSHIPS

- **Society of Photo-Optical Instrumentation Engineers (SPIE)**
- **German Physical Association (DPG)**
- **German Alpine Club (DAV)**

# HOBBIES

- **Playing piano**
- **Climbing**