

# Martin Schlecker

PHD CANDIDATE · EXOPLANETEER · STATISTICS ENTHUSIAST

Max Planck Institute for Astronomy, Heidelberg, Germany

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## Education

### Max Planck Institute for Astronomy

PHD CANDIDATE IN ASTRONOMY; IMPRS FELLOW

Advisors: Thomas Henning, Hubert Klahr · Expected Graduation: July 2021

[Heidelberg, Germany](#)

2017 – Present

### European Southern Observatory

MASTER'S THESIS: IRREGULAR VARIABILITY IN KEPLER PHOTOMETRY

Created the Python package `1cps` for transit detection in *Kepler* photometry

[Garching, Germany](#)

2015 – 2017

### MSc: Technical University of Munich

MASTER OF SCIENCE IN PHYSICS (NUCLEAR, PARTICLE AND ASTROPHYSICS), MARCH 2017

[Munich, Germany](#)

2013 – 2017

### BSc: Technical University of Munich

BACHELOR OF SCIENCE IN PHYSICS

Thesis: Alignment and Calibration of the X-Ray Telescope  $\mu$ ROSI · Max-Planck Institute for Extraterrestrial Physics

[Munich, Germany](#)

2010 – 2013

## Selected Presentations

### EDEN Science Workshop

CONTRIBUTED CONFERENCE TALK

[University of Arizona \(virtual\)](#)

Dec. 2020

### PLATO Extrasolar Planet 2020

CONTRIBUTED CONFERENCE TALK

[virtual](#)

Dec. 2020

### MIT Exoplanet Tea

INVITED SEMINAR

[MIT Kavli Institute \(virtual\)](#)

Nov. 2020

### Exoplanet Demographics Conference

CONTRIBUTED CONFERENCE TALK

[NExSci, IPAC/Caltech \(virtual\)](#)

Nov. 2020

### CfA Stars & Planets Seminar

INVITED SEMINAR

[Harvard & Smithsonian \(CfA\) \(virtual\)](#)

Nov. 2020

### Exploring the Diversity of Extrasolar Planets

CONTRIBUTED CONFERENCE TALK

[DLR/FU Berlin \(virtual\)](#)

Sep. 2020

### Pebbles, Planetesimals, and Protoplanets Conference

CONTRIBUTED CONFERENCE TALK

[Ringberg Castle](#)

Mar. 2020

### 11th CARMENES Scientific Meeting

CONSORTIUM MEETING

[Jena](#)

Nov. 2019

### Institute Colloquium

INVITED SEMINAR

[Tautenburg Observatory](#)

Jun. 2019

### Planet Formation and Evolution Conference

CONTRIBUTED CONFERENCE TALK

[University of Rostock](#)

Mar. 2019

### Japanese-German Meeting on Exoplanets and Planet Formation

CONTRIBUTED CONFERENCE TALK

[Edesheim](#)

Sep. 2018

### IAU General Assembly

CONFERENCE FLASH TALK

[Vienna](#)

Aug. 2018

### Ad Valvas Seminar

INVITED SEMINAR

[KU Leuven, Belgium](#)

Jul. 2018

## Honors & Awards

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2016	<b>Mobility grant</b> , TUM Physics Department	<i>Garching, Germany</i>
2013	<b>Travel Award</b> , TUMexchange Program	<i>Munich/Singapore</i>
2012	<b>Best Business Plan</b> , UnternehmerTUM Business Plan Seminar	<i>Garching, Germany</i>
2011	<b>Outstanding Performance Award</b> , MAN Training Center	<i>Augsburg, Germany</i>
2007	<b>Talent Promotion</b> , “Begabtenförderung Berufliche Bildung”, Chamber of Trade and Industry	<i>Augsburg, Germany</i>

## Teaching, Leadership, and Outreach

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### Team Lead: EDEN Transit Survey

*MPIA Heidelberg/University of Arizona*

- + Coordinated a team of 14 observers; managed ~180 nights (CAHA 1.23m)

*Jun. 2018 – Jan. 2021*

### Research Advisor: Summer Student Dang Pham (Cornell)

*MPIA Heidelberg*

- + Designed and guided summer project (paper in preparation)

*Jul. 2019 – Jan. 2021*

### Teaching Assistant: Numerical Methods Block Course

*Heidelberg University*

- + Hold lectures and tutorials on numerical methods for BSc/MSc students

*Feb. 2018, Feb. 2020*

### Author: Q&A feature

*All About Space Magazine*

- + Wrote a short article about planet formation around Population III stars

*Nov. 2019*

### Invited Speaker: Student Information Day

*Berufsoberschule Technik, Augsburg*

- + Advised senior grade students on perspectives in the natural sciences

*Apr. 2017*

### Team Lead: MOVE II Cubesat

*Scientific Workgroup for Rocketry and Spaceflight*

- + Head of communications and ground control; successful launch in Dec. 2018

*Jan. 2011 – Apr. 2015*

### Tutor: Math Prep Course for Physics Students

*Technical University of Munich*

- + Taught 30 first year students in mathematical concepts in physics

*Sep. 2011*

## Community Services

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2021	<b>Journal Referee</b> , Astronomy & Astrophysics	
2020	<b>Co-organized Climate Hackathon</b> , Scientists for Future	<i>virtual</i>
2019	<b>MPIA Half Marathon Fundraise</b> , Raised 2000+ EUR for rare disease research (Milly's Mission)	<i>Heidelberg</i>
2019	<b>HGSFP Winter School: SOC+LOC</b> , Co-organized a winter school for 60 participants	<i>Obergurgl</i>
2018	<b>Japanese-German Meeting on Planet Formation: SOC+LOC</b> , Co-organized an international workshop	<i>Edesheim</i>
2017–	<b>PhD Student Representative</b> , Intl. Max Planck Research School	<i>Heidelberg</i>
2017–	<b>Fellowship Selection Board</b> , Intl. Max Planck Research School	<i>Heidelberg</i>

## Observing Experience

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### Accepted PI proposal:

31 nights **2.2 m MPG/ESO telescope**

*La Silla Observatory*

### Telescope time as primary observer:

15 nights **1.23 m telescope**

*Calar Alto Observatory*

13 nights **2.2 m MPG/ESO telescope**

*La Silla Observatory*

4 nights **1.22 m telescope**

*Asiago Astrophysical Observatory*

2 nights **1.8 m telescope**

*Asiago Astrophysical Observatory*

1 night **92 cm telescope**

*Asiago Astrophysical Observatory*

## Publications

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first author: 3 — refereed co-author: 12 — citations: 134 (2021-02-18) — [ads search](#)

### First Author

- 3 **Schlecker, M.**; Pham, D.; Alibert, Y.; Mordasini, C.; Emsenhuber, A. et al., *The Determinism of Global Planet Formation Models*, subm. to A&A
- 2 **Schlecker, M.**; Kossakowski, D.; Brahm, R.; Espinoza, N.; Henning, T. et al., *A Highly Eccentric Warm Jupiter Orbiting a Solar-Type Star*, AJ, **160**, 275, 2020
- 1 **Schlecker, M.**; Mordasini, C.; Emsenhuber, A.; Klahr, H.; Henning, T. et al., *The New Generation Planetary Population Synthesis (NGPPS). III. Warm super-Earths and cold Jupiters: A weak occurrence correlation, but with a strong architecture-composition link*, A&A (in press)

### Refereed Co-Author

- 12 Addison, B. C. et al. (incl. **Schlecker, M.**), *TOI-257b (HD 19916b): A Warm sub-Saturn Orbiting an Evolved F-type Star*, MNRAS, 2020 ([arXiv:2001.07345](#))
- 11 Dreizler, S. et al. (incl. **Schlecker, M.**), *The CARMENES search for exoplanets around M dwarfs. LP 714-47 b (TOI 442.01): populating the Neptune desert*, A&A, **644**, 2020 ([arXiv:2011.01716](#))
- 10 Brahm, R. et al. (incl. **Schlecker, M.**), *TOI-481 b and TOI-892 b: Two Long-period Hot Jupiters from the Transiting Exoplanet Survey Satellite*, AJ, **160**, 235, 2020 ([arXiv:2009.08881](#))
- 9 Kemmer, J. et al. (incl. **Schlecker, M.**), *Discovery of a hot, transiting, Earth-sized planet and a second temperate, non-transiting planet around the M4 dwarf GJ 3473 (TOI-488)*, A&A, **642**, 2020 ([arXiv:2009.10432](#))
- 8 Nowak, G. et al. (incl. **Schlecker, M.**), *The CARMENES search for exoplanets around M dwarfs. Two planets on opposite sides of the radius gap transiting the nearby M dwarf LTT 3780*, A&A, **642**, 2020 ([arXiv:2003.01140](#))
- 7 Jahnke, K. et al. (incl. **Schlecker, M.**), *An astronomical institute's perspective on meeting the challenges of the climate crisis*, Nature Astronomy, **4**, 812, 2020 ([arXiv:2009.11307](#))
- 6 Bluhm, P. et al. (incl. **Schlecker, M.**), *Precise mass and radius of a transiting super-Earth planet orbiting the M dwarf TOI-1235: a planet in the radius gap?*, A&A, **639**, 2020 ([arXiv:2004.06218](#))
- 5 Gibbs, A.; Bixel, A.; Rackham, B. V.; Apai, D.; **Schlecker, M.** et al., *EDEN: Sensitivity Analysis and Transiting Planet Detection Limits for Nearby Late Red Dwarfs*, AJ, **159**, 169, 2020 ([arXiv:2002.10017](#))
- 4 Espinoza, N. et al. (incl. **Schlecker, M.**), *HD 213885b: a transiting 1-d-period super-Earth with an Earth-like composition around a bright (V = 7.9) star unveiled by TESS*, MNRAS, **491**, 2982, 2020 ([arXiv:1903.07694](#))
- 3 Kossakowski, D. et al. (incl. **Schlecker, M.**), *TOI-150b and TOI-163b: two transiting hot Jupiters, one eccentric and one inflated, revealed by TESS near and at the edge of the JWST CVZ*, MNRAS, **490**, 1094, 2019 ([arXiv:1906.09866](#))
- 2 Morales, J. C. et al. (incl. **Schlecker, M.**), *A giant exoplanet orbiting a very-low-mass star challenges planet formation models*, Science, **365**, 1441, 2019 ([arXiv:1909.12174](#))
- 1 Luque, R. et al. (incl. **Schlecker, M.**), *Planetary system around the nearby M dwarf GJ 357 including a transiting, hot, Earth-sized planet optimal for atmospheric characterization*, A&A, **628**, 2019 ([arXiv:1904.12818](#))

### Preprints & Other

- 3 **Schlecker, M.**, *lcps: Light curve pre-selection*, Astrophysics Source Code Library, 2018
- 2 **Schlecker, M.**, *Irregular Variability in Kepler Photometry*, Master's Thesis, 2016
- 1 Tiedemann, L. et al. (incl. **Schlecker, M.**), *The development of the  $\mu$ ROSI X-ray telescope*, SPIE, **8859**, 885905, 2013