

# 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: August 2021

Heidelberg, Germany

2017 – Present

### European Southern Observatory

MASTER'S THESIS: IRREGULAR VARIABILITY IN KEPLER PHOTOMETRY

- + Created the Python package **lcps** for transit detection in *Kepler* photometry
- + Discovered and characterized a new planetary candidate

Garching, Germany

2015 – 2017

### MSc: Technical University of Munich

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

Munich, Germany

2013 – 2017

### National University of Singapore

STUDY ABROAD (ASTROPHYSICS AND NUMERICAL METHODS)

Singapore

2014

### BSc: Technical University of Munich

BACHELOR OF SCIENCE IN PHYSICS, SEPTEMBER 2013

- + Thesis: Alignment and Calibration of the X-Ray Telescope ROSI, Max-Planck Institute for Extraterrestrial Physics

Munich, Germany

2010 – 2013

## Publications

refereed: 10 — first author: 3 — citations: 87 (2020-09-22)

### Refereed first author

- 3 **Schlecker, M.**; Pham, D.; Alibert, Y.; Mordasini, C.; Emsenhuber, A. *et al.*, *The Determinism of Global Planet Formation Models*, advanced draft in prep.
- 2 **Schlecker, M.**; Kossakowski, D.; Brahm, R.; Espinoza, N.; Henning, T. *et al.*, *A Highly Eccentric Warm Jupiter Orbiting a Solar-Type Star*, AJ (subm.)
- 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 a strong architecture-composition link*, A&A (in press)

### Refereed

- 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
- 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

- 5 Brahm, R. et al. (incl. **Schlecker, M.**), *TOI-481 b & TOI-892 b: Two long period hot Jupiters from the Transiting Exoplanet Survey Satellite*, ArXiv, 2020 ([arXiv:2009.08881](#))
- 4 Nowak, G. et al. (incl. **Schlecker, M.**), *The CARMENES search for exoplanets around M dwarfs. Two planets on the opposite sides of the radius gap transiting the nearby M dwarf LP 729-54*, ArXiv, 2020 ([arXiv:2003.01140](#))
- 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

## Selected Presentations

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### 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  | <a href="#">Garching, Germany</a> |
| 2013 | <b>Travel Award</b> , TUMexchange Program   | <a href="#">Munich/Singapore</a>  |
| 2012 | <b>Business Plan Award</b> , UnternehmerTUM Business Plan Seminar                               | <a href="#">Garching, Germany</a> |
| 2011 | <b>Outstanding Performance Award</b> , MAN Training Center                                      | <a href="#">Augsburg, Germany</a> |
| 2007 | <b>Talent Promotion</b> , "Begabtenförderung Berufliche Bildung", Chamber of Trade and Industry | <a href="#">Augsburg, Germany</a> |

## Teaching, Leadership, and Outreach

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### Team Coordinator

PROJECT EDEN

- + Leading a team of 12 student observers; managed >150 nights for a transit survey (CAHA 1.23m telescope)

*MPIA Heidelberg/University of Arizona*

*Jun. 2018 – Present*

### Research Advisor

SUMMER STUDENT DANG PHAM (CORNELL)

- + Designed and guided project “The Determinism of Global Planet Formation Models” (paper in preparation)

*MPIA Heidelberg*

*Jul. 2019 – Present*

### Teaching Assistant

NUMERICAL METHODS BLOCK COURSE

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

*Heidelberg University*

*Feb. 2020*

### Author

Q&A FEATURE

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

*All About Space Magazine*

*Nov. 2019*

### Invited Speaker

STUDENT INFORMATION DAY

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

*Berufshochschule Technik, Augsburg*

*Apr. 2017*

### Tutor

MATH PREP COURSE FOR PHYSICS STUDENTS

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

*Technical University of Munich*

*Sep. 2011*

### Invited Speaker

OUTREACH TALK AT VDI/VDE FORUM

- + Gave a talk on the supermassive black hole at the Galactic Center

*University of Applied Sciences Augsburg*

*Mar. 2009*

## Community Services

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### PhD Student Representative

INTERNATIONAL MAX PLANCK RESEARCH SCHOOL ON ASTRONOMY AND COSMIC PHYSICS

- + Organized a four-day retreat for 19 PhD students
- + Promoted salary increase for future PhD students of IMPRS Heidelberg

*Heidelberg*

*2017 – present*

### S4F Climathon Organizer

SCIENTISTS FOR FUTURE

- + Co-organizing a hackathon to tackle climate challenges

*Heidelberg*

*2020*

### HGSFP Winter School SOC+LOC

HEIDELBERG GRADUATE SCHOOL OF FUNDAMENTAL PHYSICS

- + Co-organized a winter school for ~ 60 participants

*Obergurgl*

*2018 – 2019*

### Workshop SOC+LOC

JAPANESE-GERMAN MEETING ON EXOPLANETS AND PLANET FORMATION

- + Co-organized an international workshop

*Edesheim*

*2018*

### Fellowship Selection Board

INTERNATIONAL MAX PLANCK RESEARCH SCHOOL ON ASTRONOMY AND COSMIC PHYSICS

*Heidelberg*

*2017 – Present*

### Journal Club Organizer

EUROPEAN SOUTHERN OBSERVATORY

*Garching*

*2016*

## Observing Experience

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15 nights **1.23 m telescope**

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

4 nights **1.22 m telescope**

2 nights **1.8 m telescope**

1 nights **92 cm telescope**

*Calar Alto Observatory*

*La Silla Observatory*

*Asiago Astrophysical Observatory*

*Asiago Astrophysical Observatory*

*Asiago Astrophysical Observatory*