

Martin Schlecker

POSTDOCTORAL RESEARCHER · EXOPLANETEER · STATISTICS ENTHUSIAST

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Education

PhD (Dr. rer. nat.) in Astronomy

Heidelberg, Germany

MAX PLANCK INSTITUTE FOR ASTRONOMY/UNIVERSITY OF HEIDELBERG

2017 – 2021

Thesis: *The Architectures of Planetary Systems: Population Synthesis Meets Observations*

Advisors: Thomas Henning, Hubert Klahr

Fellow of the International Max Planck Research School (IMPRS) for Astronomy and Cosmic Physics

Master of Science (MSc) in Nuclear, Particle and Astrophysics

Munich, Germany

TECHNICAL UNIVERSITY OF MUNICH

2013 – 2017

Thesis @European Southern Observatory (ESO): *Irregular Variability in Kepler Photometry* photometry

Discovered and characterized a new exoplanet candidate

Bachelor of Science (BSc) in Physics

Munich, Germany

TECHNICAL UNIVERSITY OF MUNICH

2010 – 2013

Thesis @Max-Planck Institute for Extraterrestrial Physics: *Alignment and Calibration of the X-Ray Telescope μ ROS*

Selected Presentations

ESO workshop: The Star-Planet Connection

Santiago de Chile (virtual)

CONTRIBUTED CONFERENCE TALK

Oct. 2021

Königstuhl Colloquium

MPIA (virtual)

INVITED COLLOQUIUM

Jun. 2021

MPIA Exocoffee

MPIA (virtual)

INVITED SEMINAR

Jan. 2021

EDEN Science Workshop

University of Arizona (virtual)

CONTRIBUTED CONFERENCE TALK

Dec. 2020

PLATO Extrasolar Planet 2020

virtual

CONTRIBUTED CONFERENCE TALK

Dec. 2020

MIT Exoplanet Tea

MIT Kavli Institute (virtual)

INVITED SEMINAR

Nov. 2020

Exoplanet Demographics Conference

NExSci, IPAC/Caltech (virtual)

CONTRIBUTED CONFERENCE TALK

Nov. 2020

CfA Stars & Planets Seminar

Harvard & Smithsonian (CfA) (virtual)

INVITED SEMINAR

Nov. 2020

Exploring the Diversity of Extrasolar Planets

DLR/FU Berlin (virtual)

CONTRIBUTED CONFERENCE TALK

Sep. 2020

Pebbles, Planetesimals, and Protoplanets Conference

Ringberg Castle

CONTRIBUTED CONFERENCE TALK

Mar. 2020

11th CARMENES Scientific Meeting

Jena

CONSORTIUM MEETING

Nov. 2019

Institute Colloquium

Tautenburg Observatory

INVITED SEMINAR

Jun. 2019

Planet Formation and Evolution Conference

University of Rostock

CONTRIBUTED CONFERENCE TALK

Mar. 2019

Japanese-German Meeting on Exoplanets and Planet Formation

Edesheim

CONTRIBUTED CONFERENCE TALK

Sep. 2018

Ad Valvas Seminar

KU Leuven, Belgium

INVITED SEMINAR

Jul. 2018

Teaching, Leadership, and Outreach

Research Advisor: Bachelor Student Antonia Seifert (Uni Heidelberg)

Designed and guided Bachelor project (Planetary systems around M dwarfs)

[MPIA Heidelberg](#)

Apr. 2021 – Jul. 2021

Team Lead: EDEN Transit Survey

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

[MPIA Heidelberg/University of Arizona](#)

Jun. 2018 – Jan. 2021

Research Advisor: Summer Student Dang Pham (Cornell)

Designed and guided summer project (*paper* in press)

[MPIA Heidelberg](#)

Jul. 2019 – Jan. 2021

Teaching Assistant: Numerical Methods Block Course

Held lectures and tutorials on numerical methods for BSc/MSc students

[Heidelberg University](#)

Feb. 2018, 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

[Berufsoberschule Technik, Augsburg](#)

Apr. 2017

Team Lead: MOVE II Cubesat

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

[Scientific Workgroup for Rocketry and Spaceflight](#)

Jan. 2011 – Apr. 2015

Tutor: Math Prep Course for Physics Students

Taught 30 first year students in mathematical concepts in physics

[Technical University of Munich](#)

Sep. 2011

Community Services

2021 **Journal Referee**, Astronomy & Astrophysics

2020 **Co-organized Climate Hackathon**, Scientists for Future

[virtual](#)

2019 **MPIA Half Marathon Fundraise**, Raised 2000+ EUR for rare disease research (Milly's Mission)

[Heidelberg](#)

2019 **HGSFP Winter School: SOC+LOC**, Co-organized a winter school for 60 participants

[Oberurgel](#)

2018 **Japanese-German Meeting on Planet Formation: SOC+LOC**, Co-organized an international workshop

[Edesheim](#)

2017–2021 **PhD Student Representative**, Intl. Max Planck Research School

[Heidelberg](#)

2017–2021 **Fellowship Selection Board**, Intl. Max Planck Research School

[Heidelberg](#)

Observing Experience

Accepted PI proposal:

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

[La Silla Observatory](#)

Telescope time as primary observer:

16 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

refereed: 23 — first author: 3 — citations: 286 — (2021-11-16) — [ads search](#)

Refereed First Author

- 3 **Schlecker, M.**; Pham, D.; Burn, R.; Alibert, Y.; Mordasini, C. et al., *The New Generation Planetary Population Synthesis (NGPPS). V. Predetermination of planet types in global core accretion models*, A&A (in press)
- 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

- 20 Kossakowski, D. et al. (incl. **Schlecker, M.**), *TOI-1201 b: A mini-Neptune transiting a bright and moderately young M dwarf*, ArXiv, 2021 ([arXiv:2109.09346](#))
- 19 Trifonov, T. et al. (incl. **Schlecker, M.**), *A pair of warm giant planets near the 2:1 mean motion resonance around the K-dwarf star TOI-2202*, ArXiv, 2021 ([arXiv:2108.05323](#))
- 18 Sabotta, S.; **Schlecker, M.**; Chaturvedi, P.; Guenther, E. W.; Muñoz Rodríguez, I. et al., *The CARMENES search for exoplanets around M dwarfs. Planet occurrence rates from a subsample of 71 stars*, A&A, **653**, 2021 ([arXiv:2107.03802](#))
- 17 Burn, R.; **Schlecker, M.**; Mordasini, C.; Emsenhuber, A.; Alibert, Y. et al., *The New Generation Planetary Population Synthesis (NGPPS). IV. Planetary systems around low-mass stars*, ArXiv, 2021 ([arXiv:2105.04596](#))
- 16 Lin, C. et al. (incl. **Schlecker, M.**), *EDEN: Flare Activity of the Nearby Exoplanet-hosting M Dwarf Wolf 359 Based on K2 and EDEN Light Curves*, AJ, **162**, 11, 2021
- 15 Amado, P. J. et al. (incl. **Schlecker, M.**), *The CARMENES search for exoplanets around M dwarfs. Two terrestrial planets orbiting G 264-012 and one terrestrial planet orbiting Gl 393*, A&A, **650**, 2021 ([arXiv:2105.13785](#))
- 14 Hobson, M. J. et al. (incl. **Schlecker, M.**), *A Transiting Warm Giant Planet around the Young Active Star TOI-201*, AJ, **161**, 235, 2021 ([arXiv:2103.02685](#))
- 13 Addison, B. C. et al. (incl. **Schlecker, M.**), *TOI-257b (HD 19916b): a warm sub-saturn orbiting an evolved F-type star*, MNRAS, **502**, 3704, 2021 ([arXiv:2001.07345](#))
- 12 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](#))
- 11 Stock, S. et al. (incl. **Schlecker, M.**), *The CARMENES search for exoplanets around M dwarfs. Three temperate-to-warm super-Earths*, A&A, **643**, 2020 ([arXiv:2010.00474](#))
- 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 μ ROSI X-ray telescope*, SPIE, **8859**, 885905, 2013