Dr. Bibiana Prinoth

Independent Research Fellow, European Southern Observatory, Germany

bibiana.prinoth@eso.org https://bibianaprinoth.ch bprinoth
0000-0001-7216-4846 bibiana-prinoth-699841175

Academic Background & relevant Employment History

2025 – present **Research Fellow, European Southern Observatory, Garching b. München, Germany**
75% independent research, 25% organisational duties (ELT)

2025 **Postdoctoral Researcher, Lund University, Sweden**
4 months post-PhD

2020 – 2025 **Ph.D. in Astronomy & Astrophysics, Lund University, Sweden**
& European Southern Observatory, Chile
Thesis title: *High-resolution Transmission Spectroscopy of Gas Giant Atmospheres*
Main advisors: H. Jens Hoeijmakers (LU), Elyar Sedaghati (ESO)
ESO Studentship in Santiago, Aug 2023 - Jul 2024

2018 – 2020 **M.Sc. ETH in Physics, ETH Zürich, Switzerland**
Thesis title: *Detectability of Radial Velocity Planets with ELT / METIS*
Advisor: Sascha Quanz

2015 – 2019 **B.Sc. ETH in Physics, ETH Zürich, Switzerland**
Thesis title: *An Attempt to Calculate the Disc Fractional Polarisation of HD 142169.*
Advisor: Hans-Martin Schmid

2022 **Social Media Internship at the Europlanet Science Congress**
Europlanet Science Congress in Granada, Spain, Sep 18 – 23, 2022

2015 – 2016 **Substitute Teacher in Mathematics**
Kantonsschule Sargans (Gymnasium), Switzerland, Sep 21 – 25, 2015 / Feb 15 – 19, 2016

Awards and Grants

2026 ○ **Oscar II:s stipendium**
Award for the best doctoral thesis in Natural Sciences at Lund University (6000 SEK, approx. 550 EUR)
https://www.fysik.lu.se/en/article/thesis-exploring-extreme-exoplanet-atmospheres-awarded-oscar-ii-scholarship

2025 ○ **SSDF 2026**
Science Support Discretionary Fund of ESO's Director for Science for hosting a 3-month stay of a student at ESO in 2026 (6800 EUR)

○ **ESO Workshop Grant**
European Southern Observatory for hosting a workshop at ESO during 2026 (5000 EUR)

○ **ESO Fellowship**
European Southern Observatory, 3-year fellowship with 75% science time, 25% duties

2024 ○ **Research Grant**
Royal Physiographic Society of Lund, Walter Gyllenberg Foundation (SEK 46 000, approx. 4200 EUR)

2023 ○ **ESO Studentship**
European Southern Observatory, 1-year studentship

2022 ○ **Research Grant**
Royal Physiographic Society of Lund, Walter Gyllenberg Foundation (SEK 56 063, approx. 5100 EUR)

○ **Seminar Grant**
Royal Physiographic Society of Lund, Gunnar & Gunnel Källén's Memorial Fund (SEK 50 000, approx. 4600 EUR)

2021 ○ **Research Grant**
Royal Physiographic Society of Lund, Walter Gyllenberg Foundation (SEK 100 000, approx. 9200 EUR)

2020 ○ **Research Grant**
Royal Physiographic Society of Lund, Walter Gyllenberg Foundation (SEK 105 000, approx. 9700 EUR)

○ **VMP Assistentenaward: Award for excellent teaching**
Association of mathematics and physics students at ETH Zürich (VMP)
https://vmp.ethz.ch/en/ta-awards/

Supervision

2026 – · · · ○ **Supervisor of Mariana Azevedo Fernandes de Melo e Sousa** (SSDF student, 3 months) - Working on infrared Rossiter-McLaughlin analysis of a TOI-1842 b with ESPRESSO and CRIRES+, start in September 2026

○ **Main supervisor of Shariat Ullah** (ESO Summer Research Programme student) - Working on Rossiter-McLaughlin analysis of a warm Jupiter system, start in June 2026

○ **Co-supervisor of Klaudia Jaworska** (Ph.D. student at Lund University) - Working on high-resolution spectroscopy of exoplanet atmospheres, start in June 2026

2025 – · · · ○ **Co-supervisor of Sydney Vach** (ESO studentship, ESO Garching) - Working on young planetary atmospheres

2025 ○ **Co-supervisor of Alex Ståhlén** (B.Sc. thesis, Lund University) - Project on characterising the WASP-121 b system using transit light curves and radial velocity measurements, duration 1 semester

2023 ○ **Co-supervisor of Yuri Carrilho Damasceno** (M.Sc. thesis, ESO Vitacura internship)
Project published in *A&A* (Damasceno, Seidel, Prinoth et al. 2024). *Now PhD student in Astronomy at the University of Porto*. Awarded **Europlanet Early Career Prize for Best Iberian M.Sc. Thesis (2024)** — link, duration: 3 months

2022–2023 ○ **Co-supervisor of Klaudia Jaworska** (B.Sc. thesis, Lund University)
Now M.Sc. student in Astronomy at Lund University. Awarded the **Rosa Tengborg Prize (Swedish Astronomical Society, 500€)** — link. Project published in *A&A* (Hoeijmakers, Jaworska & Prinoth, 2024), duration: 1 year

Responsibilities regarding research activities

2027 (upcoming) ○ **Co-proposer and member of the SOC of an Lorentz Centre Workshop** on exoplanet weather *"How's the Weather Over There?"* to be held in February 2027

2026 ○ **Master's thesis examiner** for Gian Michele Bravo
supervised by Jens Hoeijmakers and Nils Ryde, Lund University

○ **Proposer, main organiser and head of the LOC, Bridging Horizons Conference**
Garching b. München, November 2026 (see also Awards and Grants)
`https://www.eso.org/sci/meetings/2026/BridgingHorizons.html`

○ **Member of the LOC, VLT beyond 2030 Conference**
Garching b. München, Germany, January 2026
`https://www.eso.org/sci/meetings/2026/VLT_beyond_2030.html`

2025 – · · · ○ **Lead of ELT Working Group on Advanced Signal Prossessing of Exoplanet Spectroscopy (ASPEX)**
I conceived and lead a working group under ELT Programme Manager Michele Cirasuolo, developing and testing next-generation methods for spectral disentangling and sub-pixel velocity extraction. This effort addresses key challenges including stellar activity, pulsations, and telluric contamination, and brings together experts across ESO member and partner states to ensure that the community is conceptually and technically ready to characterise long-period and cooler exoplanets with the ELT.
`https://elt.eso.org/about/workinggroups/`

○ **Co-organiser and -host** for the Stellar and Planetary EXchange meeting at ESO (SPEX)
organise speakers, and host meetings for people working on exoplanets and stars.

2025–2026 ○ **Co-organiser and project supervisor, ESO Summer Research Programme (8th edition)**
Garching b. München, Summer 2026 (June–July, 6 weeks)
`https://www.eso.org/sci/meetings/2026/SummerResearch2026.html`

2025 ○ **Scientific assistant for ESO Observing Programme Committee (OPC), P117**
Served on three review panels

○ **Master's thesis examiner** for Kira Lund
The cosmic journey of a dust grain, supervised by Oscar Agertz and Anders Johansen, Lund University

○ **Postdoctoral hiring committees**
Participated in three postdoc recruitment processes at Lund University
(two searches for Dr. Jens Hoeijmakers; one for Dr. Alexander Mustill)

since 2023 ○ **Regular reviewer for A&A, AJ, PASP, and MNRAS**

2021–2022 ○ **Organiser and host, Kallén Seminars for Young Astronomers**, Lund Observatory
Led a seminar series targeted towards young astronomers (focus on master's, Ph.D and postdocs).

2020 ○ **Member of the selection committee for a professorship appointment**, Department of Physics, ETH Zürich

○ **Student representative, assistant professorship faculty search**, Department of Physics, ETH Zürich

Responsibilities regarding teaching activities

2026
- **Observing nights for ESO's Pupils Internship** — during two observing runs, I guide pupils from schools in Munich and surroundings through the process of observing.
- **Workshop at ESO Girls' Day** — teaching high-school girls about exoplanets, and how we detect them using transits
- **Lecturer at ESO Summer Research Programme 2026** — Lecture on exoplanets for the participants of the 8th edition of this programme.

2024
- **Co-organiser, Python Coffee Series, ESO Chile** — Established an informal discussion and training space to exchange computational tools and foster peer-driven learning among researchers.

2022–2025
- **Teaching Assistant, ASTB01 — Introduction to Astrophysics**
  Department of Astronomy and Theoretical Physics, Lund University

2022
- **Co-evaluator for high-school research project** — Provided assessment and feedback for Iza Stand's project *"Moving everyday life into outer space (Förflyttning av vardagslivet till yttre rymden)"* (Swedish).

2021–2023
- **Teaching Assistant, FYSB21 — Mathematical Methods for Waves, Vibrations and Diffusion**
  Department of Astronomy and Theoretical Physics & Department of Physics, Lund University
  (Apr–Jul 2021; Nov 2021–Jan 2022; Apr–Jul 2022; Nov 2022–Jan 2023)
  I contributed to the refinement of computational labs for Mathematical Methods for Waves, Vibrations and Diffusion (*FYSB21*), ensuring a alignment between theoretical instruction and coding exercises. Feedback from students and colleagues led to the adoption of these materials as the standard version for subsequent cohorts. Beyond content development, I supported assessment design, grading coordination, and overall course logistics – ensuring smooth delivery and high teaching standards

2020–2025
- **Teaching Assistant, ASTC01 — Astrobiology**
  Department of Astronomy and Theoretical Physics & Department of Physics, Lund University
  I led the redesign of the Astrobiology laboratory exercises after the legacy software became obsolete. I developed a new Python-based framework and an online platform for analysing exoplanetary transits and radial velocities. The resulting lab module now forms a core part of the course (*ASTC01/ASTC11*) and has been used successfully since 2021.

2020
- **Teaching Assistant, Physics II**
  Institute for Particle Physics and Astrophysics, ETH Zürich, Feb–Aug 2020
  I was awared the Teaching Assistant Award in 2020 for this course. The award is given by the student union in Mathematics, Physics, and Computational Science and Engineering (VMP) every semester for the best teaching assistants following a student survey.

2018–2020
- **Teaching Assistant, Physics I & II**
  Institute for Particle Physics and Astrophysics, ETH Zürich, Sep 2018–Jan 2020
  Together with Prof. Günther Dissertori, I substantially revised and re-typeset the lecture scripts for Physics I & II, tailoring them to the needs of medicine students. The work involved rephrasing and restructuring material to ensure conceptual clarity for non-physicists while maintaining scientific rigour, removing hidden assumptions, and integrating worked examples. These scripts have since remained part of the course materials used at ETH Zürich. In parallel, I developed mock exams, structured exercise collections, and materials for intensive revision weeks within the first-year examinations programme. These initiatives improved students' preparedness and confidence ahead of major assessments and were well received in formal feedback surveys.

2016–2020
- **Student representative and president of the student association** — Served in the teaching committees (*Unterrichtskommission / GemUK*) of the Departments of Mathematics and Physics, ETH Zürich.

Observational Experience and Proposals

Principal Investigator
- 117.29SY, ESO P117, VLT, CRIRES+, 30 hours
  115.2857, ESO P115, VLT, CRIRES+, 54 hours
  23A036 (rescheduling), OPTICON 2023B, Southern African Large Telescope, HRS, 5 hours
  23A036, OPTICON 2023A, Southern African Large Telescope, HRS, 5 hours
  22A024, OPTICON 2022A, Southern African Large Telescope, HRS, 5 hours
  107.22QF, ESO SC107, VLT, ESPRESSO, 5.5 hours

Co-Investigator
- 108.22CZ, ESO P108, VLT, CRIRES+, 11 hours (PI: Allart)
  108.22AN, ESO P108, VLT, CRIRES+, 6.4 hours (PI: Borsato)
  108.22BR, ESO P108, VLT, CRIRES+, 5x0.4 nights (PI: Hoeijmakers)
  109.236F, ESO P109, VLT, CRIRES+, 4 hours (PI: Hoeijmakers)
  109.23D2, ESO P109, VLT, CRIRES+, 0.5 nights (PI: Thorsbro)
  111.251V, ESO P111, VLT, CRIRES+, 0.5 nights (PI: Hoeijmakers)
  112.25NQ, ESO P112, VLT, CRIRES+, 0.75 nights (PI: Borsato)
  116.297R, ESO P116, VLT, UVES, 18.5 h (PI: Novais)
  117.2AEF, ESO P117, ESO3.6, NIRPS, 2 nights (PI: Novais)
  65-001, NOT Cycle 65, Nordic Optical Telescope, FIES, 2 transits (PI: Johansen)
  64-021, NOT Cycle 64, Nordic Optical Telescope, FIES, 2 transits (PI: Johansen)
  Keck, HIRES (PI: Borsato)
  Gemini-North, MAROON-X, 2 transits (PI: Pelletier)
  ID 4195, JWST Cycle 2 (PI: Fisher); ID 4126, JWST Cycle 2 (PI: Fisher); ID 3969, JWST Cycle 2 (PIs: Espinoza, Powell); ID 3730, JWST Cycle 2 (PIs: Diamond-Lowe, Mendonça); ID 3279, JWST Cycle 2 (PI: Hoeijmakers); ID 7675, JWST Cycle 4 (PI: August)

Seminars, Talks and Presentations

2026
- **The landscape and challenges of the observables now and coming up**
  EXOMINTS conference (invited talk)
  `https://faculty.thecollege.asu.edu/exoteric/exomints-2026`
- **The future of high-resolution exoplanet studies in the ELT era**
  HoRS3S conference, Granada (invited keynote)
  `https://sites.google.com/view/hors3s/home`
- **Pushing the limits of what we can see from home: Observing gas giant exoplanet atmospheres from the ground**
  Lagrange Seminar, Observatoire de la Côte d'Azur

2025
- **Caught in the act: Observing an eccentric gas giant during periastron**
  USM exoplanet observers meeting (invited seminar)
- **Pushing the limits: From Ultra-Hot Jupiters to Warm Gas Giants**
  CSH/WP seminar at the University of Bern, Switzerland (invited seminar)
  `https://www.space.unibe.ch/studies/division_seminars_wp_csh_colloquium/index_eng.html`
- **Right Time, Right Place: Probing Atmospheric C/O in Eccentric Warm Giants with CRIRES+**
  Planet formation and exoplanets in the ELT era (ExoELT), Garching, Germany (contributed conference talk)
  `https://www.eso.org/sci/meetings/2025/exo-elt/programme.html`
- **Hidden in plain sight: Using ESPRESSO's superpower to detect depleted titanium in WASP-121 b**
  Exoclimes Conference, Montréal, Canada (contributed talk)
  `https://exoclimes.org/program.html`
- **Hidden in plain sight: Using ESPRESSO's superpower to detect depleted titanium in WASP-121 b**
  Astrophysics seminar in Lund (invited seminar)
  `https://www.astro.lu.se/calendar/seminar-bibiana-prinoth-topic-titanium-atmosphere-exoplanet`
- **Titanium chemistry of WASP-121 b with ESPRESSO in 4-UT mode**
  TOP seminar in Nice (invited seminar)

2024
- **Cross-correlation challenges in the ANDES era: Observing warm Jupiters on eccentric orbits**
  Two HoRSEs: High-Resolution Exoplanet and Stellar Characterization Today and in the ELT Era, Berlin, Germany, July 15-19, 2024 (contributed talk)
  `https://sites.google.com/view/two-horses/`
- **Revealing the Formation History of Ultra-Hot Jupiters through Refractory-to-Volatile Elemental Ratios: Benchmarking with WASP-189 b**
  Challenge Accepted: Linking Planet Formation with Present-Day Atmospheres, Heidelberg, Germany, July 8-12, 2024 (contributed talk)
  `https://the-great-link.github.io/`
- **Cross-correlation challenges in the ANDES era: Observing warm Jupiters on eccentric orbits**
  ESO Seminar, ESO Garching, Germany, June 11, 2024
- **Time-resolved transmission spectroscopy of the ultra-hot Jupiter WASP-189 b**
  Exoplanets 5, Leiden, Netherlands, June 17-21, 2024 (poster presentation)
  `https://exoplanets5.org/`

- **Exploring the Limits of Atmospheric Studies on Warm Jupiters: The Role of System Architectures**
  Seminar at Universidad Adolfo Ibañez, Santiago, Chile, April 17, 2024
- **Exploring Extreme Worlds: Insights on Ultra-hot Jupiters from WASP-189 b**
  Astro Seminar, American Museum of Natural History, New York, April 9, 2024
- **Time-resolved transmission spectroscopy of the ultra-hot Jupiter WASP-189 b**
  Extreme Solar Systems V, Christchurch, New Zealand, March 16-21, 2024 (poster presentation)
  `https://aas.org/meetings/exssV`
- **Exploring Extreme Worlds: Insights on Ultra-hot Jupiters from WASP-189 b**
  MQAAAstro Seminar, Macquarie University, Sydney, Australia, March 15, 2024
- **Exploring Extreme Worlds: Insights on Ultra-hot Jupiters from WASP-189 b**
  Astro Seminar, University of New South Wales, Sydney, Australia, March 13, 2024

2023
- **Time-resolved transmission spectroscopy of the ultra-hot Jupiter WASP-189 b**
  OPAGA, Puerto Natales, December 4 - 8, 2023 (contributed talk)
  `https://astrofisicamas.cl/opaga/`
- **Time-resolved transmission spectroscopy of the ultra-hot Jupiter WASP-189 b**
  Seminar at Universidad Adolfo Ibañez, Santiago, Chile, October 24, 2023
- **Time-resolved transmission spectroscopy of the ultra-hot Jupiter WASP-189 b**
  Thirty-Minutes-Talk ESO Chile, October 18, 2023
- **Time-resolved transmission spectroscopy of the ultra-hot Jupiter WASP-189 b**
  DPS-EPSC, October 1-6, 2023 (remote attendance, contributed talk)
  `https://aas.org/meetings/dps55`
- **Exploring the atmosphere of the ultra-hot Jupiter WASP-189 b**
  Stockholm University Astronomy Departmental Seminar, June 2, 2023
  `https://www.albanova.se/event/astronomy-departmental-seminar-bibiana-prinoth-lund/`
- **Through the telescope: Exploring the atmosphere of the ultra-hot Jupiter WASP-189 b**
  SPI-MAX Astrophysics Seminar, May 10, 2023
  `https://www.physics.ox.ac.uk/events/spi-max-bibiana-prinoth`
- **Exploring the atmosphere of the ultra-hot Jupiter WASP-189 b**
  Helsinki Astrophysics Seminar, March 2023 (online)
  `https://wiki.helsinki.fi/display/astjourn/Astrophysics+seminar`

2022
- **What else is there to see? Revisiting the transmission spectrum of WASP-189 b**
  Astronomdagarna, Oct 4-6, 2022 (contributed talk)
- **Titanium oxide and chemical inhomogeneity in the atmosphere of WASP-189 b**
  EAS 2022, Jun 27 - Jul 2, 2022 (poster presentation)
- **Titanium oxide and chemical inhomogeneity in the atmosphere of WASP-189 b**
  Exoplanets IV, May 1-6, 2022 (poster presentation)
- **Revealing dynamics, atmospheric stratification and chemical inhomogeneities in the atmosphere of WASP-189 b**
  Uppsala University Astronomy/Space physics seminar in February 2022 (invited seminar)

2021
- **Revealing Dynamics, Three-Dimensional Stratification, and Chemical Inhomogeneities in the Atmosphere of an Ultra-Hot Jupiter**
  Astronomdagarna, Oct 22-23, 2021 (contributed talk)
  `https://indico.cern.ch/event/1016890/contributions/4498334/`
- **Interpreting Detections of Metals in the Transmission Spectra of Ultra-hot Jupiters**
  ESO Atmospheres Conference & Workshop, Aug 23-27, 2021 (contributed talk)
  `https://eso.org/sci/meetings/2021/Atmo2021/program/Prinoth.html`

Voluntary Work in Committees and Boards

2024 – 2025 **Equal Opportunity, Diversity and Inclusion Committee**
Lund University, Department of Physics, Sweden, Sep 2024 – Jul 2025

2023 – 2025 **Student Council for Physics Doctoral Students**
Lund University, Department of Physics, Sweden, Jun 2023 – Jun 2025

2022 **Founding Member of SENECA — The Swedish Network for Early Career Astronomers**
`https://seneca-astro.github.io`

2022 – 2023 **NDR Working Committee Member**
Naturvetenskapliga Doktorandrådet (NDR), Jul 2022 – Jun 2023

2021 – 2024 **PhD representative in the Research Education Board**
Naturvetenskapliga Doktorandrådet (NDR), Jan 2021 – June 2023

2021 – 2022 **NDR Chair**
Naturvetenskapliga Doktorandrådet (NDR), Jul 2021 – Jun 2022

2018 – 2020 **Co-Secretary General of IDEALiStiC**
IDEA League Students in Conference, Feb 2018 – Oct 2020

2018 – 2019 **President of the Council for Student Associations**
Verband der Studierenden an der ETH Zürich, Sep 2018 - Feb 2019

2017 – 2018 **Board member for communication at VSETH**
Verband der Studierenden an der ETH Zürich, Sep 2017 - Mar 2018

2016 – 2017 **President of VMP**
Verein der Mathematik- und Physikstudierenden an der ETH Zürich, Oct 2016 - Oct 2017

2015 – 2016 **Founding member and president of [phimale] (Equal opportunity group of the student union)**
Verein der Mathematik- und Physikstudierenden an der ETH Zürich, Oct 2015 - Oct 2016

Outreach Activities

2026 **Girls' Day at ESO**
Guiding a group of girls throughout the day, teach team about transiting exoplanets

Girls' Day at EPO *Outreach talk at the European Patent Office in Munich about my path to becoming an astronomer at ESO*

2025 **Pint of Science, Sweden**
Outreach talk
`https://pintofscience.se/event/otherworldly-adventures`

2024 **Astronomical Youth district conference in Lund**
Talks about exoplanets and my way into academia as a first-gen for high-school students

Culture Night
Public observing night during Kulturnatten in Lund
`https://www.lu.se/node/35015#eng`

2023 **Knut Lundmark-dagarna at Lund University**
Lectures about exoplanets for high-school students organised by Astronomisk Ungdom
`https://www.astronomiskungdom.se/knut-lundmark-dagarna`

Monthly meeting of ASTB at Lund University
"Genom teleskopet: utforskning av andra världars atmosfärer", talk for the monthly meeting of the astronomiska sällskap Tycho Brahe
`https://www.astb.se/index.php/aktiviteter/m-och-frag-mainmenu-38/600-utforskningen-av-andra-varldars-atmosfarer`

NMT Days at Lund University
Lectures about exoplanets for high-school students during the NMT (naturvetenskap, medicin, teknik) days at Lund University
`https://www.nmt.lu.se/app/?nav`

2022 **Social Media Internship at the Europlanet Science Congress**
Europlanet Science Congress in Granada, Spain, Sep 18 – 23, 2022

ALVA at Lund University
Outreach talk to the astronomy club at Lund Unversity about "The planets beyond our solar system"
`https://www.astro.lu.se/ALVA`

The Interplanetary Podcast
Guest on a podcast, talking about Ultra-hot Jupiters
`https://www.interplanetary.org.uk/`

NMT Days at Lund University
Lectures about exoplanets for high-school students during the NMT (naturvetenskap, medicin, teknik) days at Lund University
`https://www.nmt.lu.se/app/?nav`

2021 **The Meridian Podcast**
Field reporter on the podcast of Lund Observatory during season 2
`https://www.astro.lu.se/TheMeridian`

Outreach Talk at Polhemskola, Lund
Invited talk at a high school in Lund
`https://www.astro.lu.se/TheMeridian`

2021 – present **Skype A Scientist**
Talks to several school classes
`https://www.skypeascientist.com/`

2020 – 2025 **Outreach activities at the telescope**
Visits to our telescopes with school classes and interested groups, public observing

Codes

- **tayph**, an open-source package for cross-correlation analysis of high resolution spectroscopy, contributor; Zenodo link: `https://doi.org/10.5281/zenodo.11506198`
- **ExoAtmoSim**, an open-source package for prediciting cross-correlation detections; developer; Zenodo link: `https://zenodo.org/records/11505486`
- **StarRotator**, an open-source package for modelling the Rossiter–McLaughlin effect during exoplanet transits, contributor; Zenodo link: `https://doi.org/10.5281/zenodo.13789135`

Research Publications

First-authored

1. **B. Prinoth**, V. Parmentier, S. Pelletier, and et al., "A population view of transiting hot giant exoplanets: Tracing Fe and Ti chemistry with ESPRESSO and MAROON-X," under review, available upon request.
2. **B. Prinoth**, J. V. Seidel, H. J. Hoeijmakers, B. M. Morris, et al., "Titanium chemistry of WASP-121 b with espresso in 4-ut mode," *Astronomy & Astrophysics*, vol. 694, A284, Feb. 2025, ISSN: 1432-0746. DOI: 10.1051/0004-6361/202452405.
3. **B. Prinoth**, E. Sedaghati, J. V. Seidel, H. J. Hoeijmakers, et al., "High-resolution Transmission Spectroscopy of Warm Jupiters: An ESPRESSO Sample with Predictions for ANDES," *The Astronomical Journal*, vol. 168, no. 3, p. 133, Aug. 2024, ISSN: 1538-3881. DOI: 10.3847/1538-3881/ad5a7f.
4. **B. Prinoth**, H. J. Hoeijmakers, B. M. Morris, M. Lam, et al., "An atlas of resolved spectral features in the transmission spectrum of wasp-189 b with maroon-x," *Astronomy & Astrophysics*, vol. 685, A60, May 2024, ISSN: 1432-0746. DOI: 10.1051/0004-6361/202349125.
5. Seidel, J. V. & **Prinoth, B.**, E. Knudstrup, H. J. Hoeijmakers, J. J. Zanazzi, and S. Albrecht, "Detection of atmospheric species and dynamics in the bloated hot jupiter wasp-172 b with espresso," *Astronomy & Astrophysics*, vol. 678, A150, Oct. 2023, ISSN: 1432-0746. DOI: 10.1051/0004-6361/202347160.
6. **B. Prinoth**, H. J. Hoeijmakers, S. Pelletier, D. Kitzmann, et al., "Time-resolved transmission spectroscopy of the ultra-hot jupiter wasp-189 b," *Astronomy & Astrophysics*, vol. 678, A182, Oct. 2023, ISSN: 1432-0746. DOI: 10.1051/0004-6361/202347262.
7. **B. Prinoth**, H. J. Hoeijmakers, D. Kitzmann, E. Sandvik, et al., "Titanium oxide and chemical inhomogeneity in the atmosphere of the exoplanet WASP-189 b," *Nature Astronomy*, vol. 6, no. 4, pp. 449–457, Jan. 2022, ISSN: 2397-3366. DOI: 10.1038/s41550-021-01581-z.

Co-authored (student papers highlighted: M.Sc., B.Sc.)

1. J. V. Seidel, V. Parmentier, **B. Prinoth**, T. Hood, et al., "Magnetic field strengths of hot giant exoplanets consistent with Solar System values," *Nature Astronomy*, Jun. 2026, ISSN: 2397-3366. DOI: 10.1038/s41550-026-02870-1.
2. A. Simonnin, V. Parmentier, J. P. Wardenier, G. Chauvin, et al., "Time-resolved absorption of six chemical species with MAROON-X points to a strong drag in the ultra-hot Jupiter TOI-1518 b," *Astronomy & Astrophysics*, vol. 698, A314, Jun. 2025, ISSN: 1432-0746. DOI: 10.1051/0004-6361/202453241.
3. C. E. Fisher, M. J. Hooton, A. Gressier, M. Zgraggen, et al., "JWST NIRSpec finds no clear signs of an atmosphere on TOI-1685 b,", vol. 545, no. 4, Feb. 2026. DOI: 10.1093/mnras/staf2187.
4. M. Holmberg, H. Diamond-Lowe, J. M. Mendonça, D. Kitzmann, et al., "Hot Rocks Survey. V. Secondary Eclipse Photometry of GJ 3473 b with JWST/MIRI,", vol. 171, no. 4, p. 251, Apr. 2026, Art. no. 251. DOI: 10.3847/1538-3881/ae4c45.
5. A. D. Feinstein, R. A. Booth, J. B. Bergner, J. D. Lothringer, et al., "On Linking Planet Formation Models, Protoplanetary Disk Properties, and Mature Gas Giant Exoplanet Atmospheres," *arXiv preprints*, 2025. eprint: 2506.00669.

6 H. J. Hoeijmakers, **Jaworska, K. P.**, and **B. Prinoth**, "Exocomets of pictoris: I. exocomet destruction, sodium absorption and disk line variability in 17 years of harps observations," *Astronomy & Astrophysics*, vol. 700, A239, Aug. 2025, ISSN: 1432-0746. DOI: 10.1051/0004-6361/202451594.

7 N. H. Allen, N. Espinoza, H. Diamond-Lowe, J. M. Mendonça, et al., "Hot Rocks Survey. IV. Emission from LTT 3780 b Is Consistent with a Bare Rock," *The Astronomical Journal*, vol. 170, no. 4, p. 240, 2025, ISSN: 1538-3881. DOI: 10.3847/1538-3881/adfc51.

8 J. V. Seidel, **B. Prinoth**, L. Pino, L. A. dos Santos, et al., "Vertical structure of an exoplanet's atmospheric jet stream," *Nature*, vol. 639, no. 8056, pp. 902–908, Feb. 2025, ISSN: 1476-4687. DOI: 10.1038/s41586-025-08664-1.

9 V. Vaulato, M. J. Hobson, R. Allart, S. Pelletier, and J. P. e. a. Wardenier, "Atmospheric composition and circulation of the ultra-hot Jupiter WASP-121b with joint NIRPS, HARPS and CRIRES+ transit spectroscopy," *Astronomy & Astrophysics*, vol. 703, A251, Nov. 2025, Art. no. A251. DOI: 10.1051/0004-6361/202556257.

10 P. C. August, L. A. Buchhave, H. Diamond-Lowe, J. M. Mendonça, et al., "Hot Rocks Survey I: A possible shallow eclipse for LHS 1478 b," *Astronomy & Astrophysics*, vol. 695, A171, Mar. 2025, ISSN: 1432-0746. DOI: 10.1051/0004-6361/202452611.

11 E. A. Meier Valdés, B.-O. Demory, H. Diamond-Lowe, J. M. Mendonça, et al., "Hot Rocks Survey: II. The thermal emission of TOI-1468 b reveals a bare hot rock," *Astronomy & Astrophysics*, vol. 698, A68, Jun. 2025, ISSN: 1432-0746. DOI: 10.1051/0004-6361/202453449.

12 **Damasceno, Y. C.**, J. V. Seidel, **B. Prinoth**, A. Psaridi, et al., "The atmospheric composition of the ultra-hot Jupiter WASP-178 b observed with ESPRESSO," *Astronomy & Astrophysics*, vol. 689, A54, Sep. 2024, ISSN: 1432-0746. DOI: 10.1051/0004-6361/202450119.

13 M. B. Lam, H. J. Hoeijmakers, **B. Prinoth**, and B. Thorsbro, "Secrets in the shadow: High precision stellar abundances of fast-rotating A-type exoplanet host stars through transit spectroscopy," *Astronomy & Astrophysics*, vol. 691, A141, Nov. 2024, ISSN: 1432-0746. DOI: 10.1051/0004-6361/202450624.

14 E. Ahrer, J. V. Seidel, L. Doyle, S. Gandhi, et al., "Atmospheric characterization and tighter constraints on the orbital misalignment of WASP-94Ab with HARPS," *Monthly Notices of the Royal Astronomical Society*, vol. 530, no. 3, pp. 2749–2759, Apr. 2024, ISSN: 1365-2966. DOI: 10.1093/mnras/stae1000.

15 N. W. Borsato, H. J. Hoeijmakers, D. Cont, D. Kitzmann, et al., "Small but mighty: High-resolution spectroscopy of ultra-hot Jupiter atmospheres with compact telescopes: Transmission spectrum of KELT-9 b with Wendelstein's FOCES spectrograph," *Astronomy & Astrophysics*, vol. 683, A98, Mar. 2024, ISSN: 1432-0746. DOI: 10.1051/0004-6361/202347684.

16 H. J. Hoeijmakers, D. Kitzmann, B. M. Morris, **B. Prinoth**, et al., "The Mantis Network: IV. A titanium cold trap on the ultra-hot Jupiter WASP-121 b," *Astronomy & Astrophysics*, vol. 685, A139, May 2024, ISSN: 1432-0746. DOI: 10.1051/0004-6361/202244968.

17 S. Pelletier, B. Benneke, Y. Chachan, L. Bazinet, et al., "CRIRES+ and ESPRESSO Reveal an Atmosphere Enriched in Volatiles Relative to Refractories on the Ultrahot Jupiter WASP-121b," *The Astronomical Journal*, vol. 169, no. 1, p. 10, Dec. 2024, ISSN: 1538-3881. DOI: 10.3847/1538-3881/ad8b28.

18 S. Pelletier, B. Benneke, M. Ali-Dib, **B. Prinoth**, et al., "Vanadium oxide and a sharp onset of cold-trapping on a giant exoplanet," *Nature*, vol. 619, no. 7970, pp. 491–494, Jun. 2023, ISSN: 1476-4687. DOI: 10.1038/s41586-023-06134-0.

19 D. Kitzmann, H. J. Hoeijmakers, S. L. Grimm, N. W. Borsato, A. Lueber, and **B. Prinoth**, "The Mantis network: A standard grid of templates and masks for cross-correlation analyses of ultra-hot Jupiter transmission spectra," *Astronomy & Astrophysics*, vol. 669, A113, Jan. 2023, ISSN: 1432-0746. DOI: 10.1051/0004-6361/202142969.

20 N. W. Borsato, H. J. Hoeijmakers, **B. Prinoth**, B. Thorsbro, et al., "The Mantis Network: III. Expanding the limits of chemical searches within ultra-hot Jupiters: New detections of CaI, VI, TiI, CrI, NiI, SrII, BaII, and TbII in KELT-9 b," *Astronomy & Astrophysics*, vol. 673, A158, May 2023, ISSN: 1432-0746. DOI: 10.1051/0004-6361/202245121.

21 E. K. H. Lee, J. P. Wardenier, **B. Prinoth**, V. Parmentier, et al., "3D Radiative Transfer for Exoplanet Atmospheres. gCMCRT: A GPU-accelerated MCRT Code," *The Astrophysical Journal*, vol. 929, no. 2, p. 180, Apr. 2022, ISSN: 1538-4357. DOI: 10.3847/1538-4357/ac61d6.

22 E. K. H. Lee, **B. Prinoth**, D. Kitzmann, S.-M. Tsai, et al., "The mantis network <tt>ii</tt>: Examining the 3d high-resolution observable properties of the uhjs WASP-121b and WASP-189b through gcm modelling," *Monthly Notices of the Royal Astronomical Society*, vol. 517, no. 1, pp. 240–256, Aug. 2022, ISSN: 1365-2966. DOI: 10.1093/mnras/stac2246.

Media Coverage (selected)

2026
- **"Strange winds reveal strongest hints yet of magnetic activity in exoplanets"**
  ESO press release for Seidel et al. 2026
  - Link to English Press Release, available in all languages of the ESO member states

2025
- **"Out of science fiction": First 3D observations of an exoplanet's atmosphere reveal a unique climate**
  ESO press release for Seidel et al. 2025 and Prinoth et al. 2025
  - Link to English Press Release, available in all languages of the ESO member states
- **Titanium and mysterious jet streams discovered on extreme exoplanet**
  Lund University press release for Prinoth et al. 2025
  - Link to English Press Release
  - Link to Swedish Press Release
- **Utomjordiskt liv – ingen okomplicerad fråga**
  Interviewed by Katja Lindblom for *Populär Astronomi*
  `https://www.popularastronomi.se/2025/04/utomjordiskt-liv-ingen-okomplicerad-fraga/`
- **Exoplanets atmosfär kartlagd i tre dimensioner**
  Interviewed by Emma Fransson for *Populär Astronomi*
  Popular science article about Seidel et al. 2025
  `https://www.popularastronomi.se/2025/03/exoplanets-atmosfar-kartlagd-i-tre-dimensioner/`

2022
- **Exotic cocktail in the atmosphere of extreme exoplanet**
  Lund University press release for Prinoth et al. 2022
  - Link to English Press Release
  - Link to Swedish Press Release
- **Ultrahet exoplanet visar sig ha komplex atmosfär**
  Interviewed by Rebecca Forsberg for *Populär Astronomi*
  `https://www.popularastronomi.se/2022/02/ultrahet-exoplanet-visar-sig-ha-komplex-atmosfar/`
- **Extreme exoplanet has a complex and exotic atmosphere**
  University of Bern press release for Prinoth et al. 2022, *Nature Astronomy*
  - Link to English Press Release
  - Link to German Press Release