

Cyril Gapp

Curriculum Vitae

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🌐 [gapp-c.github.io](https://github.com/gapp-c)

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Education

- 2022–2026 **PhD (Astronomy)**, *Max Planck Institute for Astronomy (MPIA), Atmospheric Physics of Exoplanets (APEx) Department, and Ruprecht Karl University, Heidelberg, Germany*
Thesis: Observational characterization of transiting exoplanets' atmospheres
- 2018–2021 **Master's (Physics)**, *Georg August University, Göttingen, Germany*
Thesis: Characterization of Jupiter's atmosphere using far infrared spectra measured with PACS onboard the Herschel Space Observatory (completed at *Max Planck Institute for Solar System Research, Planetary Science department, Göttingen, Germany*)
- 2020 **Visiting student (Meteorology)**, *University Centre in Svalbard, Longyearbyen, Norway*
Scholarship: PROMOS stipend of the German Academic Exchange Service (DAAD)
- 2017–2018 **Visiting student (Physics)**, *University of Seville, Seville, Spain*
Scholarship: ERASMUS+ stipend (EU exchange program)
- 2014–2017 **Bachelor's (Geophysics)**, *University of Münster, Münster, Germany*
Thesis: Numerical simulation of double-diffusive convection in the finger regime under the influence of homogeneous background shear

Research experience

- 2021–2022 **Researcher**, *Max Planck Institute for Solar System Research, Göttingen, Germany*
Planetary Science department, Planetary Atmospheres group
- 2020 **Student assistant**, *University of Bremen, Bremen, Germany*
Six-week research expedition M164 (physical oceanography), R/V Meteor
- 2016 **Summer intern**, *Harvard University, Cambridge, MA, USA*
Department of Earth and Planetary Sciences, Harvard Seismology Group
Scholarship: PROMOS stipend of the German Academic Exchange Service (DAAD)
- 2014 **Summer intern**, *University of California, Santa Cruz, CA, USA*
Department of Astronomy and Astrophysics

Publications

First author papers

- Gapp, C., Evans-Soma, T. M., Barstow, J. K. et al. *WASP-121 b's Transmission Spectrum Observed with JWST/NIRSpec G395H Reveals Thermal Dissociation and SiO in the Atmosphere.* **AJ** 169 341 (2025). DOI: 10.3847/1538-3881/ad9c6e
- Gapp, C., Rengel, M., Hartogh, P., et al. *Abundances of trace constituents in Jupiter's atmo-*

sphere inferred from *Herschel*/PACS observations. **A&A**, 688, A10 (2024). DOI: 10.1051/0004-6361/202347345

Co-author papers

- Coulombe, L.-P., Benneke, B., Krissansen-Totton, J., et al. *Possible Evidence for the Presence of Volatiles on the Warm Super-Earth TOI-270 b*. **AJ**, 170, 226 (2025). DOI: 10.3847/1538-3881/adfc6a.
- Kahle, K. A., Blecic, J., Ashtari, R. et al. *The SPACE Program I: The featureless spectrum of HD 86226 c challenges sub-Neptune atmosphere trends*. **A&A**, 701, A184 (2025). DOI: 10.1051/0004-6361/202554916.
- Evans-Soma, T. M., Sing, D. K., Barstow, J. K. et al. *Silicon monoxide in an ultrahot Jupiter atmosphere with a super-stellar C/O*. **NatAs** 9, 845–861 (2025). DOI: 10.1038/s41550-025-02513-x.
- Fu, G., Stevenson, K. B., Sing, D. K. et al. *Statistical trends in JWST transiting exoplanet atmospheres*. **ApJL** 985 L10 (2025). DOI: 10.3847/1538-4357/ad7bb8.
- Ahrer, E. M., Radica, M., Piaulet-Ghorayeb, C. et al. *Escaping Helium and a high metallicity, low C/O atmosphere on the sub-Neptune GJ 3090 b from JWST NIRISS and NIRSpec transit spectroscopy*. **ApJL** 985 L10 (2025). DOI: 10.3847/2041-8213/add010.
- Lothringer, J. D., Bennett, K. A., Sing, D. K. et al., *Refractory and Volatile Species in the UV-to-IR Transmission Spectrum of Ultra-hot Jupiter WASP-178b with HST and JWST*. **AJ** 169 274 (2025). DOI: 10.3847/1538-3881/adc117.
- Piaulet-Ghorayeb, C., Benneke, B., Radica, M. et al. *JWST/NIRISS Reveals the Water-rich “Steam World” Atmosphere of GJ 9827 d*. **ApJL** 974 L10 (2024). DOI: 10.3847/2041-8213/ad6f00.
- Vogt, S. S., Burt, J., Meschiari, S. et al. *Six planets orbiting HD 219134*, **ApJ**, 814 12 (2015). DOI: 10.1088/0004-637X/814/1/12.

Accepted observing proposals

As PI

2023 **JWST Cycle 2**, GO 3818

To be or not to be in equilibrium: Probing disequilibrium chemistry on the warm sub-Neptune TOI-270 d

As co-I

2023 **JWST Cycle 2**, GO 3969

Hot Jupiter Atmospheric Forecast: are mornings cloudier than evenings in other worlds?

2023 **JWST Cycle 2**, GO 2961

Vaporized rocks: detecting silicate cloud precursors in ultra-hot Jupiters

Attended conferences, workshops and summer schools

Jun 2025 **Annual meeting of the European Astronomical Society (EAS 2025)**, Cork, Ireland

Contributed poster: Thermal dissociation and SiO in the ultrahot Jupiter WASP-121 b

- Sep 2024 **Europlanet Science Congress (EPSC2024)**, Berlin, Germany
Contributed talk: WASP-121 b's transmission spectrum observed with JWST/NIRSpec G395H reveals thermal dissociation and SiO in the atmosphere. DOI: 10.5194/epsc2024-191
Contributed poster: Abundances of trace constituents in Jupiter's atmosphere inferred from Herschel/PACS observations. DOI: 10.5194/epsc2024-208
- Jul 2024 **The Great Link Workshop**, MPA, Heidelberg, Germany
Contributed talk: Thermal dissociation and SiO in the Ultra-Hot Jupiter WASP-121 b
- Jun 2024 **Exoplanets 5**, Leiden, Netherlands
Contributed poster: WASP-121 b's transmission spectrum observed with JWST/NIRSpec G395H reveals partially dissociated atmosphere
- Jul 2023 **2023 Sagan Exoplanet Summer Hybrid Workshop**, NASA Exoplanet Science Institute, Pasadena, CA, USA
 Tutor for hands-on session IV: Retrievals using petitRADTRANS
- Jun 2023 **Exoclimes VI**, Exeter, UK
Contributed talk: The Transmission Spectrum of WASP-121 b through JWST/NIRSpec G395H
- Jun 2023 **ExoSLAM Summer School**, Exeter, UK
- May 2023 **4th Advanced School on Exoplanetary Science (ASES 4)**, Vietri sul Mare, Italy
Contributed talk: Transmission Spectrum of WASP-121 b using JWST/NIRSpec G395H
- Nov 2022 **Celebrating JWST's first six months of exoplanet data**, Kreuth, Germany
- Aug 2022 **Astronomy, astrochemistry and the origin of life, IMPRS-HD**, Heidelberg, Germany
- Oct 2021 **SPP 1992 all-hands-on-deck meeting 2021**, Online
Contributed talk: Deciphering Jupiter's atmospheric chemistry as a benchmark for extrasolar gas giants using Herschel/PACS
- Sep 2021 **Annual meeting of the Astronomische Gesellschaft (AG2021)**, Online
Contributed talk: Deciphering Jupiter's atmospheric chemistry as a benchmark for extrasolar gas giants using Herschel/PACS
- Aug 2021 **18th annual meeting of the Asia Oceania Geosciences Society (AOGS2021)**, Online
Contributed talk: Characterization of Jupiter's Atmosphere Using Far Infrared Spectra Measured with PACS Onboard the Herschel Space Observatory
- Sep 2020 **Europlanet Science Congress (EPSC2020)**, Online
Contributed poster: Retrieval of Jupiter's atmospheric parameters using far infrared spectra measured with PACS onboard the Herschel Space Observatory. DOI: 10.5194/epsc2020-152

Seminar talks

- Jul 2025 **Exocoffee**, MPA, Heidelberg, Germany
Title: WASP-121 b's transmission spectrum observed with JWST/NIRSpec G395H reveals thermal dissociation and SiO in the atmosphere
- Nov 2024 **Physics research seminar**, University of Newcastle, Newcastle, Australia
Title: The Ultra-Hot Jupiter WASP-121 b: Opportunity and challenge for atmospheric characterization

- Jul 2024 **Exocoffee**, *MPIA*, Heidelberg, Germany
Title: Abundances of trace constituents in Jupiter's atmosphere inferred from Herschel/PACS observations
- Nov 2023 **Astro Seminar**, *University of Kansas*, Online
Title: The Transmission Spectrum of WASP-121 b through JWST/NIRSpec G395H

Teaching and supervision experience

- Jul 2025 **A New Era in Exoplanet Atmosphere Observation and Characterisation**, *German Physical Society (DPG) summer school*, Bad Honnef, Germany
 Tutor for the whole week
- 2024 **Summer intern co-supervisor**, *MPIA*, Heidelberg, Germany
 Co-supervision (with Dr. Eva-Maria Ahrer) of Djemma Ruseva for a ten-week internship about limb asymmetries in WASP-121 b
- 2023–2025 **Teaching assistant**, *Ruprecht Karl University*, Heidelberg, Germany
 Tutor for 'CCD photometry in modern astronomy' (advanced lab experiment for undergraduate physics students)
- 2021–2022 **Teaching assistant**, *Georg August University*, Göttingen, Germany
 Tutor for 'Experimental physics III: waves, optics and atomic physics' (semester long second year course for prospective high school teachers in physics)
- 2020 **Teaching assistant**, *Georg August University*, Göttingen, Germany
 Tutor for the preparatory course 'Mathematical methods of physics' (two week block course for first year undergraduate physics students directly before the start of lectures)

Community services

- 2025 **Referee**, *Monthly Notices of the Royal Astronomical Society*
- 2022–2024 **Exocoffee organizer**, *MPIA*, Heidelberg, Germany
 Weekly seminar series of the APEX Department
Tasks: Inviting speakers (external and internal) and charing sessions
- 2016–2017 **Chair of the students' representative**, *University of Münster*, Münster, Germany
 Department of Physics, Institute of Geophysics
Tasks: Serving on university panels and representative coordination
- 2015–2016 **Co-organizer**, *Geophysical Activity Program 2016*, Münster, Germany
 Student-driven annual international meeting of geophysics students
Tasks: Recruitment of private sponsors and event organization
- 2015–2017 **Member of the students' representative**, *University of Münster*, Münster, Germany
 Department of Physics, Institute of Geophysics
Tasks: Planning visits to scientific institutes and organization of career talks

Skills

- Languages **German:** Native, **English:** Fluent (C1), **Spanish:** Fluent (B2), **French:** Beginner (A1)
- Computing Python, MATLAB, Fortran90, git, L^AT_EX, Linux, Mac