

SIMON M. DANNHAUER

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EDUCATION

PhD Student (Dr. rer. nat.) in Astrophysics

University of Cologne

📅 Nov 2023 – Ongoing

📍 I. Physics Institute

- "Massive star formation and feedback in the Milky Way: Dynamics and physical properties of the Interstellar Medium from observations of ionized and neutral atomic carbon"

As a member of the SFB 1601 and the International Max Planck Research School (IMPRS) I am working with Dr. Robert Simon, Dr. Nicola Schneider and Prof. Dominik A. Riechers on connecting astrophysical scales by feedback.

Max-Planck Institute for Radio Astronomy

📅 Apr 2024 – Ongoing

📍 Guest Contract, MPIfR

Laboratoire d'astrophysique de Bordeaux

📅 Jan 2026

📍 Research Stay, LAB

Research stay hosted by Dr. Timea Csengeri, working on SED fitting of the dusty envelope of the NASCENT-stars cores and the bipolar outflow nebula S106.

Master of Science (MSc.) in Astrophysics

University Bonn

📅 2021 – 2023

📍 Argelander Institute for Astronomy

- Thesis "Radio AGN fraction in the first eROSITA all-sky survey"
- Research Internship: Report "eROSITA observations of the η -Chamaeleontis star cluster: Catalogue of extended background sources"

Bachelor of Science (BSc.) in Physics

University Bonn

📅 2015 – 2021

📍 Argelander Institute for Astronomy

- Thesis "Correction of space-weather related effects on eROSITA data"

International Collaborations

Member SKAO Working Groups "SWG Extragalactic Continuum", "SWG Our Galaxy"

09/2024-Ongoing

Member NASCENT-stars: "NOEMA Astrochemistry of Cygnus protostars"

02/2024-Ongoing

Member CCAT/FYST: "GEco: Galactic Ecology of the dynamic ISM"

11/2023-Ongoing

Member SOFIA legacy project "FEEDBACK"

11/2023-Ongoing

Member SFB 1601 "Habitats of massive stars across cosmic time"

11/2023-Ongoing

Member (New-)Athena Working Group "SWG3: Stars and their environment"

04/2023-05/2025, 04/2026-Ongoing

Member eROSITA-DE Collaboration (Cluster Working Group)

05/2022-2024

EXPERIENCES AND SKILLS

Programming languages: Python, bash, C++ (basics)

Astronomy packages/software: astropy, numpy, matplotlib, linmix, emcee, SAOImageDS9, eSASS, TOPCAT, MESA, HEASOFT, GILDAS/CLASS, GILDAS/MAPPING, CASA, CARTA, $\LaTeX$

Publications

First and second author:

N. Schneider, **S. Dannhauer**, E. Keilmann, *et al.*, "Globules and pillars in Cygnus X - IV. Velocity-resolved [OI] 63 μ m map of a peculiar proplyd-like object," *Astronomy and Astrophysics*, vol. 704, A271, 2025. DOI: 10.1051/0004-6361/202557227.

S. M. Dannhauer, S. Vider, N. Schneider, *et al.*, "The Diamond Ring in Cygnus X: Advanced stage of an expanding bubble of ionised carbon," *Astronomy and Astrophysics*, vol. 703, A197, 2025. DOI: 10.1051/0004-6361/202556159.

E. Keilmann, **S. Dannhauer**, S. Kabanovic, *et al.*, "[CII]-deficit caused by self-absorption in an ionized carbon-filled bubble in RCW79," *Astronomy and Astrophysics*, vol. 697, p. L2, May 2025. DOI: 10.1051/0004-6361/202453445.

Co-author:

L. Bonne, N. Schneider, **S. Dannhauer**, *et al.*, "Molecular cloud dispersal traced by the ionized carbon 158 μ m line," *Astronomy & Astrophysics*, acc.

A. Veronica, T. H. Reiprich, F. Pacaud, *et al.*, "The life of central radio galaxies in clusters: AGN-ICM studies of eRASS1 clusters in the ASKAP fields," *Publications of the Astronomical Society of Australia*, vol. 43, e001, 2026. DOI: 10.1017/pasa.2025.10131.

Schneider, Nicola, Ossenkopf-Okada, Volker, Röllig, Markus, *et al.*, "The HI-to-H2 transition in the Draco cloud," *Astronomy and Astrophysics*, vol. 699, A354, 2025. DOI: 10.1051/0004-6361/202555308.

A. Merloni, G. Lamer, T. Liu, *et al.*, "The SRG/eROSITA all-sky survey: First X-ray catalogues and data release of the western Galactic hemisphere," *Astronomy and Astrophysics*, vol. 682, A34, Jan. 2024. DOI: 10.1051/0004-6361/202347165.

Observing Proposals

	Telescope	Title	Time
PI	CCAT/FYST Summer 2026	"GEco Early Science: The carbon budget of M17-NE"	8.5h acc.
PI	CCAT/FYST Summer 2026	"GEco Early Science: ISM and PDR physics in Mon R2"	3.0h acc.
PI	NOEMA+30m SS25	"Outflows and shocks in a proplyd in Cygnus"	24.5h obs.
PI	IRAM 30m SS24	"The Diamond Ring in Cygnus X: Composition and Evolution of an unusual ring in CII"	25.4h obs.
Co-I PI: W. Kim	APEX 2026B	"Solving the chemical mysteries of CF+ in M17 SW: Is it a tracer of neutral or ionized carbon?"	33.3h subm.
Co-I PI: L. Böhm	ALMA Cycle 13	"What survives the fall? Tracing filamentary inflow down to ~ 10 au scales"	30.0h subm.
Co-I PI: D. Panda	ALMA Cycle 13	"Accretion or Companions? Unveiling the Onset of accretion in massive protostars"	7.6h subm.
Co-I PI: R. Simon	CCAT/FYST Summer 2026	"GEco Early Science: HMSFRs and IVCs/HVCs"	54.9h acc.
Co-I PI: N. Schneider	IRAM 30m SS25/WS25	"Revealing the nature of a proplyd-like object in Cygnus X"	5.4h obs.
Co-I PI: E. Keilmann	APEX 2024A	"RCW79: An evolutionary tale of three interstellar bubbles"	17.7h obs.

subm.= submitted, acc.= accepted, obs.= observed
I have extensive observing experience at the IRAM 30m telescope, VLBI experience at Effelsberg and participate in the commissioning of CCAT/FYST.

Conferences & Workshops

Orion & Beyond: Ionization & Winds in HII Region Invited Participant + Chair	25. -29. Januar 2027 Leiden, NL (scheduled)
The Future of PDR Modelling - Current Challenges and Next Steps Invited Participant	16. -20. November 2026 Leiden, NL (scheduled)
Cologne-Bonn Symposium on the habitats of massive stars across cosmic time	17. -21. August 2026

Contributed Talk "The lifecycle of molecular clouds as seen by FEEDBACK"	Cologne, GER (scheduled)
Les Houches summer school: From the Interstellar Medium to the Formation of Stars	6. -31. July 2026
Participant + Contributed Talk "Feedback-mediated accretion in S106"	Les Houches, FR (scheduled)
Valongo Observatory (UFRJ) Main Colloquia	23. June 2026
Seminar Talk "The lifecycle of molecular clouds as seen by FEEDBACK"	Rio de Janeiro, BR
European ALMA school	26. -30. January 2026
Participant	Leiden, NL
FEMIS group meeting	15. January 2026
Talk "FEEDBACK and friends"	Bordeaux, FR
CRC1601 Main Colloquia (w/ Dr. Robert Simon)	25. November 2025
Contributed Talk "Studying SF in the Milky Way and Magellanic Clouds, the CCAT and SOFIA connection"	Cologne, GER
CCAT Collaboration Meeting CCM6	1. -3. October 2025
Participant	Cologne, GER (online)
Stellar Origins 2025	15. -19. September 2025
Poster Presentation	Vienna, AUT
Unlocking ALMA's Potential with Focal Plane Arrays	2. -4. September 2025
Participant	Bonn, GER
Charting the Cosmos: From Cosmic Nurseries to Evolved Stars using High Powered Telescopes	18. -22. August 2025
Poster Presentation + Flash Talk	Ingelheim, GER
International summer school on the ISM of galaxies (GISM3)	21. July -1. August 2025
Participant	Banyuls-sur-Mer, FR
CRC1601 Science Seminar "Comparing observations and simulations"	8. July 2025
Contributed Talk "The 'Diamond Ring': Insights from comparing simulations with observations"	Cologne, GER
Star Formation, Stellar Feedback, and the Ecology of Galaxies (Ballyfest)	26. -30. May 2025
Contributed Talk "The future of FEEDBACK: Key findings and outlook"	Visegrad, HU
Special Lecture Series "Galactic and Extragalactic Astrochemistry"	31.3. -3. April 2025
by Prof. Serena Viti (Leiden+Bonn), Participant	Bonn, GER
12th IRAM Interferometry School	18. -22. November 2024
Participant	Grenoble, FR
"Physics and Chemistry of the Interstellar Medium" (PCMI Bordeaux)	28. -31. October 2024
Poster Presentation	Bordeaux, FR
Workshop "Artificial intelligence for astrochemistry"	24. -25. October 2024
Participant	Bordeaux, FR (online)
"Star formation across cosmic time"-Annual Meeting of the German Astronomical Society	9. -13. September 2024
Contributed Talk "[CII] Bubbles in FEEDBACK: Towards an evolutionary sequence?"	Cologne, GER
IMPRS Black Board Lectures "Manifestations and Physics of Galactic Winds and Outflows"	4. -5. September 2024
by Prof. Mark Morris (UCLA), Participant	Bonn, GER
NASCENT-stars Collaboration Kick-Off Meeting	27. -28. May 2024
Contributed Talk "Large scale view of Cygnus X: FEEDBACK and PDR modelling"	Bordeaux, FR
Heritage of SOFIA – Scientific Highlights and Future Perspectives	22. -26. April 2024
Poster Presentation + Flash Talk	Stuttgart, GER
Workshop "Introduction to Bayesian Statistical Learning"	18. -22. March 2024
Jülich Supercomputing Centre (JSC)	Jülich, GER (online)
The X-ray Universe 2023	13. -16. June 2023
Poster Presentation	Athens, GR
20th German eROSITA Consortium meeting 2023	2. - 5. May 2023
Participant	Garching, GER (online)
2nd & 3rd Australian/eROSITA-DE Joint Collaboration Workshop	23. - 24. March 2023
Participant	15. - 17. February 2022
Workshop "Gravitational Waves"	6.- 10. Jan 2023
Bethe Center for Theoretical Physics	Bonn, GER
"Astrophysics from Ground to Space"-Annual Meeting of the German Astronomical Society	12. - 16. September 2022
Participant	Bremen, GER

Teaching

I am passionate about teaching and have been continuously tutoring since my third bachelor semester. Some of the courses I have tutored before my PhD are the advanced lab course *"Spectroscopy of Stars"* (Prof. Norbert Langer), the physics bachelor lectures *"Mechanics and Thermodynamics"*, *"Electromagnetism"* (Prof. Bernhard Ketzer) and *"Introduction to Extragalactic Astronomy"* (Prof. Peter Schneider) among *many* others. I also took part in peer tutoring in order to improve scientific teaching in the bachelor. During my PhD I participated in teaching for several lectures among them *"Introduction to Astronomy"* and *"Advanced Astrophysics"* (Prof. Dominik Riechers).

Outreach

Cologne-Bonn Symposium Public Event

Public Talk "Astronomie in luftiger Höhe"

19th Aug 2026

Cologne, GER (scheduled)

Astronomy on Tap Cologne

Public Talk "'Diamonds in the Sky'? Forschung abseits der fertigen Publikation"

4th Dec 2025

Cologne, GER

Press Release University of Cologne

Research news "Astronomers in Cologne unravel the mystery of a cosmic ring"

17th Nov 2025

Cologne, GER

Physikalischer Verein

Public Talk "Diamanten, Fliegende Sternwarten und Erkenntnisgewinn in der Wissenschaft"

10th Oct 2025

Frankfurt, GER

"Zusammen Witzhelden bewegen"

Public Talk "Astronomie aus dem Rheinland im Wandel der Zeit"

4th Feb 2025

Witzhelden, GER

Astronomy on Tap Bonn

Public Talk "Coffee, Crabs and Cathedrals: Massive Star Formation in the Milky Way"

21st Jan 2025

Bonn, GER

Lange Nacht der Astronomie"

Public Talk "Die Supernova in der Kaffeetasse"

19th Oct 2024

Cologne, GER.

eROSITA DR1 Paper Splash

Press releases and outreach coordination for the first data release

Spring 2024

Bonn, GER.

MS Wissenschaft

Development of a dark matter related exhibit with exercises for pupils as part of the

Spring 2023

Bonn, GER

"Wissenschaftsjahr 2023 - Unser Universum" (an initiative of the Ministry of Education and Research).

Astronomy on Tap Bonn

Public Talk "The art of (scientific) failure – being so wrong it's right"

31st Jan 2023

Bonn, GER

Softskill Seminars

- Workshop "Scientific Integrity", BCGS
- Seminar "Scientific Paper Writing" by Mark Buchanan and Justin Mullins (writeaboutscience.com)
- Seminar "Scientific Writing" by Prof. Peter Schneider, IMPRS for A&A
- Workshop "Tutoring for Physicists", Bonn Center for Higher Education

9th February 2026

5/6th March 2025

3rd Nov 2023

Mar 2023

AWARDS & HONORS

Poster Award 'Charting the Cosmos' Conference

08/2025

International Max Planck Research School Fellowship (IMPRS for A&A)

02/2024

Abiturpreis of the German Physical Society (DPG)

08/2015

EXTRACURRICULAR ACTIVITIES

Work experience:

- Digital Strategist NRW-SPD

2021–2023

Academic:

- Early/Mid-Career Researcher Representative, Excellence University On-Site Visit
- IMPRS Student Representative for Cologne
- Member SFB 1601 Diversity Board
- Co-Chair SFB1601 SWG "Stellar Feedback/Magnetic Fields"
- Member Local Organizing Committee AG2024
- Member SFB 1601 Student Council
- Deputy student representative AlfA
- Member AlfA DEI committee
- Telescope Licence Examiner for the AlfA roof-top observatory
- Member of several appointment committees

02/2026–05/2026

05/2024–05/2026

2023–Ongoing

05/2024–2025

Summer 2024

2023–2025

2021–2022

2023–2023

2021–2023

2021–2023

Volunteering:

- Maintenance director aviation club Luftsportverein Lindlar (LSV Lindlar)
- Public Relations LSV Lindlar
- Youth Leader LSV Lindlar

2018–Ongoing

2015–2022

2013–2015

Memberships: DPG, EAS, AG, VdS

Other interests: Gliding, hiking, photography and astrophotography, the latter one in a small amateur observatory

REFEREES

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Prof. Dr. Dominik Riechers

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Dr. Timea Csengeri

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✉ Laboratoire d'astrophysique de Bordeaux (LAB), Allée Geoffroy Saint-Hilaire, F-33615 Pessac

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