

# PRACHI PRAJAPATI<sup>1,2</sup>

📍 <sup>1</sup>University of Cologne, <sup>2</sup>Max Planck Institute for Radio Astronomy, Germany  
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☎ (+91) 81 5399 5366 📺 Interview & Blog: Lindau Nobel Laureate Meeting (LINO24)

## RESEARCH INTERESTS (NON-EXHAUSTIVE)

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Multiwavelength observational cosmology, Large surveys of high- $z$  galaxies,  
Galaxy formation and evolution, Cosmic star formation history

## EMPLOYMENT / RESEARCH

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<b>Guest Researcher</b> Max Planck Institute for Radio Astronomy (MPIfR)	09/2023 – present Bonn, Germany
<b>Doctoral Researcher</b> I. Institute of Physics (PH1), University of Cologne	09/2023 – present Cologne, Germany
<b>Scientist/Engineer – SD (promoted)</b> , Astronomy & Astrophysics Physical Research Laboratory (PRL), Government of India	01/2023 – 08/2023 Ahmedabad, India
<b>Scientist/Engineer – SC</b> , Astronomy & Astrophysics Physical Research Laboratory (PRL), Government of India	09/2019 – 12/2022 Ahmedabad, India

## EDUCATION

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**PhD in Astrophysics**, University of Cologne, Germany 2023 – (expected 2026)  
Advisor: Prof. Dr. Dominik Riechers  
*Thesis: Role of cold molecular gas in fueling star formation in galaxies across cosmic epochs*

**PhD in Planetary Sciences**, Physical Research Laboratory (PRL), India  
(declined the offer)

**Dual Degree (BTech in Engineering Physics + MS in Astrophysics)** 2014 – 2019  
Indian Institute of Space Science and Technology (IIST), India CGPA: 8.49/10.00  
*Thesis: Investigating the low-frequency radio emission in the Wolf-Rayet bubble G2.4+1.4*

## COLLABORATIONS

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**Vz-GAL**; VLA CO(1–0) large program for dusty galaxies at  $z = 1 - 6$  (**PhD Thesis**)  
**z-GAL**; NOEMA spectroscopic redshift survey for 135 high- $z$  dusty galaxies  
**SFB 1601 / German Science Foundation**; Habitats of massive stars across cosmic time

## PEER-REVIEWED PUBLICATION STATISTICS (FULL LIST AT THE END)

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16 total, 64 citations (3 as 1st author + 4 instrumentation-based as a co-author + 1 white paper) – ORCID 0000-0002-3094-1077; ADS library

## TEACHING EXPERIENCE

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**Advanced Astrophysics**, Teaching Assistant, U.Cologne Winter 2025 – 2026

**Additional teaching competencies:**

Cosmology, Radio-Submillimeter Astronomy, Galaxies (Structure, Dynamics and Evolution), Undergraduate Astronomy/Physics Courses

## MENTORING EXPERIENCE

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**Niankun Yu**, Postdoctoral project CASA training, MPIfR 01/2025 – present  
**Florian Brettschneider**, Master’s thesis, U.Cologne 11/2024 – (expected 12/2025)  
**Priyanka Khandelwal**, Master’s thesis, PRL 12/2022 – 07/2023  
**Aastha Gupta**, Bachelor’s thesis, PRL 11/2022 – 04/2023  
**Akash Trivedi**, Bachelor’s thesis, PRL 11/2022 – 04/2023  
**Ananya Rawat**, PhD coursework project, PRL 05/2021 – 11/2021  
**Vineet Rawat**, PhD coursework project, PRL 05/2020 – 11/2020

## OBSERVING PROGRAMS

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**Principal Investigator (PI) accepted:**

VLA (25B-147) [45 hrs]

“HerS-3 : Exploring Cold Molecular Gas Dynamics in an Exceptional Einstein Cross”

**co-Investigator (co-I) accepted:**

VLA (VLA/26A-383; PI: Wuji Wang) [21.5 hrs]

ALMA (2025.1.00156.S; Cycle 12; PI: Riechers) [ACA (7m): 68 hrs]

NOEMA (E24AM; DDT; PI: Cox) [4 hrs]

VLA (25A-177; PI: Riechers) [10 hrs]

VLA Vz-GAL Large Program, (25A-099; PhD Thesis) [161 hrs]

VLA Vz-GAL Large Program, (23B-169; PhD Thesis) [194 hrs]

GMRT (38-070; PI: Tej) [18 hrs]

**Telescope Duties:**

Mount Abu Infrared Observatory, PRL, India [~75 nights over 3.5 years]  
Observations, telescope handling, and instrument testing

104cm Sampurnanand Telescope, ARIES, India [observations for 5 nights]

**Telescope Visits / Trainings:**

VLA (USA), Effelsberg (Germany), GMRT (India), DOT & ILMT (India), KSO (India)

## COLLOQUIA & SEMINAR TALKS

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**Contributed talk**, 247th AAS Meeting, Arizona, USA 01/2026

**Contributed talk**, Radio Astronomy Meeting, Heidelberg, Germany 11/2025

**Invited seminar**, Bonn-Cologne-Cornell CCAT line intensity mapping telecon 10/2025

<b>Invited seminar</b> , Institut Astrophysique de Paris (IAP), France	10/2025
<b>Scheduled talk</b> , SFB 1601 Science Meeting, Cologne, Germany	10/2025
<b>Invited colloquium</b> , Astronomical Observatory of Strasbourg, France	09/2025
<b>Contributed talk</b> , NA-TW Joint ALMA Workshop, ASIAA, Taiwan	06/2025
<b>Poster talk</b> , SFB 1601 Retreat, Koblenz, Germany	03/2025
<b>Scheduled talk</b> , IMPRS Conference, MPIfR, Germany	04/2025
<b>Invited seminar</b> , Astrophysics Division, PRL, India	02/2025
<b>Talk</b> , Baryon Cycle Across Space & Time, Tenerife, Spain	10/2024
<b>Contributed talk</b> , German Astronomical Society (AG) Meeting, Germany	09/2024
<b>Invited panel member</b> , Reminiscence from the LINO24, MPIfR, Germany	09/2024
<b>Scheduled talk</b> , SFB 1601 Student Seminars, Bonn, Germany	07/2024
<b>Scheduled talk</b> , Sciathon Forum Finalist, LINO24, Germany	06/2024
<b>Scheduled talk</b> , IMPRS Retreat, Ringberg Castle, Germany	01/2024
<b>Scheduled talk</b> , IMPRS Retreat, Oostende, Belgium	09/2023
<b>Invited talk</b> , Vikram Ambalal Sarabhai Jayanti Program, PRL, India	08/2023
<b>Poster</b> , 3rd BINA Indo-Belgian Workshop, ARIES, India	03/2023
<b>Invited Boltzmann Lecture</b> , IIT-Madras, India	09/2020
<b>Contributed talk</b> , Regional Astronomy Meeting, IUCAA, India	07/2020
<b>Contributed talk</b> , Astronomical Society of India (ASI) Meeting, India	02/2020
<b>Invited seminar</b> , Astrophysics Division, PRL, India	12/2019

## GRANTS AND SCHOLARSHIPS

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<b>International Max Planck Research School (IMPRS), Bonn-Cologne</b>	2023 – present
Additional financial support of \$4700 during my PhD	
<b>SFB 1601 CRC, German Science Foundation (DFG)</b>	2023 – present
Salary award (around \$2700 per month) and additional support	
<b>Department of Space (DoS) Scholarship, Government of India</b>	2014 – 2019
Financial assistance of about \$6000 throughout my studies at the IIST	
<b>Department of Space (DoS) Book Grant, Government of India</b>	2014 – 2019
About \$370 for purchasing technical / non-technical books	
<b>Indian Institute of Astrophysics (IIA) Summer Project Fellowship</b>	2018
About \$130 and additional travel expenses	

## HONORS AND AWARDS

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<b>Nominated Young Scientist, Lindau Nobel Laureate Meeting (Physics)</b>	2024
Prestigious meet with the Nobel Laureates to exchange knowledge	
<b>Poster Prize - Astreflections</b>	2019
Cash prize (\$40), Conscientia–Techfest, IIST	
<b>Quiz Winner - Astro ABC</b>	2019
Cash prize (\$40), Conscientia–Techfest, IIST	
<b>Joint Entrance Examination (JEE), Ministry of Education, India</b>	2014
All India Category Rank 2025 (98.35 %ile)	

**Aloha Abacus & Mental Arithmetic 7th National Level Competition, India** 2010  
3rd runner up in Speed Math; Trophy and Cash Prize

#### ACADEMIC LEADERSHIP/SERVICES

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**Reviewer**, ALMA Proposal Peer-Review System (10 sets) 2025  
**Organizer**, IMPRS Retreat & Proposal Writing Workshop, Essen, Germany 2025  
**Founding Member, High-z Working Group**, SFB 1601, Germany 2024 – present  
**Student Representative, SFB 1601 Executive Board**, Germany 2024 – 2025  
**1st Speaker, SFB 1601 Students Council**, Germany 2024 – 2025  
**LOC Member**, German Astronomical Society (AG) Meeting, Germany 2024  
**SOC Member, SFB 1601 Students Retreat**, Leiden, Netherlands 2024  
**LOC Member, SFB 1601 Student Seminars**, Germany 2024  
**Chairperson**, IIST Alumni Association Ahmedabad Chapter, India 2022 – 2023  
**Secretary**, IIST Alumni Association Ahmedabad Chapter, India 2021 – 2022  
**Guest Editor of “The Spectrum”**, PRL Newsletter, PRL, India 2021  
**Executive Member**, IIST Alumni Association National Body, India 2020 – 2021

#### MEMBERSHIPS

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**Lindau Nobel Laureate Meetings Alumni Network**, Life Member 2024 – present  
**European Astronomical Society (EAS)**, Student Member (#6932) 2024 – present  
**German Astronomical Society (AG)**, Student Member (#202409) 2024 – present  
**Astronomical Society of India (ASI)**, Life Member (#2334) 2021 – present  
**IIST Alumni Association (IISTAA)**, Life Member (Batch of 2014-19) 2019 – present

#### CONFERENCES AND WORKSHOPS

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**247th AAS Meeting**, Phoenix, Arizona, Contributed talk 01/2026  
**Radio Astronomy Meeting**, MPA Heidelberg, Contributed talk 11/2025  
**NA-TW Joint ALMA Workshop**, ASIAA, Contributed Talk 06/2025  
**SFB 1601 Annual Retreat (& Science Meeting)**, Poster (& Talk) 03/2025 (10/2025)  
**Baryonic Cycle Across Space & Time - Winter School**, IAC, Talk 10/2024  
**German Astronomical Society (AG) Meeting**, Contributed talk 09/2024  
**73rd Lindau Nobel Laureate Meeting (Physics)**, Scheduled talk 07/2024  
**20th NRAO Synthesis Imaging Summer School** 05/2024  
**SFB 1601 Annual Retreat** 02/2024  
**IMPRS Ringberg Retreat**, Scheduled talk 01/2024  
**IMPRS Oostende Retreat**, Scheduled talk 09/2023  
**3rd BINA Indo-Belgian Workshop**, Poster 03/2023  
**Scientific Book Writing Workshop** 09/2022

<b>Astronomical Society of India (ASI) Meeting</b> , Poster	03/2022
<b>Regional Astronomy Meeting</b> , Contributed talk	07/2020
<b>Astronomical Society of India (ASI) Meeting</b> , Contributed talk	02/2020
<b>LIGO-India: The Road Ahead (First Meeting)</b>	08/2016

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#### TECHNICAL SKILLS (5 = OUTSTANDING; 1 = PRELIMINARY)

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##### **Programming Languages:**

Python (4), Unix-shell (4), LaTeX (5), GitHub (4), C/C++ (3), HTML (4), CSS (2)

##### **Software:**

CASA (5), AIPS (5), CARTA (4), GILDAS (4), DS9 (4), IRAF (4), HEASoft (1), CIAO (1)

##### **Observations:**

Radio/Sub-millimeter interferometers (5), Optical/Infrared ground-based telescopes (4)

##### **Instrumentation:**

Opto-electronics testings and sensitivity analysis of optical/infrared instruments (3)

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#### NATURAL LANGUAGES

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**English** (Full professional proficiency), **Hindi** (Full professional proficiency), **Gujarati** (Native), **Sanskrit** (Elementary), **Tamil** (Elementary), **German** (Elementary)

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#### COMMUNITY INVOLVEMENT AND OUTREACH

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**Book Author**, “*Massive Stars of the Universe: Plausible Generators of Cosmic Rays*”

(This Hindi book has been reviewed by the DoS/GoI<sup>1</sup> and forwarded for publication.)

**Invited outreach talk**, Astronomy on Tap (AoT), Cologne 2025

**Press release for HerS-3 Einstein cross**, ALMA, IRAM, and U.Cologne 2025

**Volunteer**, Long Night of Astronomy, Cologne 2025

**Volunteer** for handling the SFB 1601 member interviews 2024 – 2025

**Magazine article** for the Sounding Rocket MkII, IIST Newsletter 2025

**Public talk**, National Science Day, India 2025

**Interview & Blog**, Lindau Nobel Laureate Meeting (Physics) 2024

**Public interview** with Brian Marlow at LINO24 2024

**Quiz master**, Astronomy on Tap (AoT), Cologne 2024

**Inkling**, “*Zeroing In*”, science podcast, “*History of India’s Chandrayaan Series*” 2023

**Volunteer**, Public Sky Watching Sessions, PRL 2021 – 2022

**Scientific paintings** for magazine articles on “*Ancient Indian Sciences*” 2022

**Public talk**, Anna University 2021

**Volunteer**, Telescope sessions for Kids’ Day @ PRL 2022

**Organizing committee member**, National Science Day, PRL 2021

**Convener**, SARC Internship Program (SIP) for Undergraduates, IISTAA 2021

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<sup>1</sup>Department of Space, Government of India (<https://www.india.gov.in/website-department-space>)

<b>Creatives and Publicity</b> , “Zeroing In” science podcast	2020
<b>Public talk</b> , Physics & Astronomy Club, IIT-Madras	2020
<b>Mural</b> themed on “ <i>Indian Culture and Ancient Sciences</i> ”, IIST	2019
<b>Public talk</b> , Astronomy Club IIST	2017
<b>Member</b> , Vyom Sounding Rocket Project, Aero Club, IIST	2015

## PROFESSIONAL REFERENCES

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**Dominik Riechers** *(PhD Advisor & Collaborator)*

Professor, Institute of Physics (PH1), University of Cologne, Germany  
 riechers@ph1.uni-koeln.de, (+49) 221 470-76027

**Amélie Saintonge** *(Collaborator)*

Director, Max Planck Institute for Radio Astronomy (MPIfR), Bonn, Germany  
 asaintonge@mpifr-bonn.mpg.de, (+49) 228 525-399

**Pierre Cox** *(Collaborator)*

ex-Director, ALMA & IRAM; Prof. Emer., Institut Astrophysique de Paris (IAP), France  
 cox@iap.fr, (+33) 4 76 82 49 06/49 53

**Axel Weiss** *(Collaborator)*

Staff Astronomer, Max Planck Institute for Radio Astronomy (MPIfR), Bonn, Germany  
 aweiss@mpifr-bonn.mpg.de, (+49) 228 525-273

**Shashikiran Ganesh** *(Group Leader at PRL)*

Professor, Physical Research Laboratory (PRL), Dept. of Space, Govt. of India  
 shashi@prl.res.in, (+91) 79 2631-4508

**Anandmayee Tej** *(MS Thesis Advisor at IIST)*

Senior Professor, Indian Institute of Space Science and Technology (IIST), India  
 tej@iist.ac.in, (+91) 471 256-8524

## MISCELLANEOUS INTERESTS

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**(Non-exhaustive, and in alphabetical order)** Badminton, Hiking, Indian art & painting, Indian classical music, Indian philosophy, Skating, Trekking

## PEER-REVIEWED PUBLICATIONS (*ORCID: 0000-0002-3094-1077*)

**16 PAPERS, 64 CITATIONS (SEE ADS LIBRARY)**

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### *First-author publications*

- Prajapati**, Weiss, Boogaard, Riechers, et al., “*Tracing Turbulent Gas Excitation in Dusty Star-forming Galaxies Across Cosmic Time*” **(in prep.)**
- 3. **Prajapati**, Riechers, Cox, Weiss, Saintonge et al., “*Vz-GAL: Probing Cold Molecular Gas in Dusty Star forming Galaxies at  $z=1-6$* ”, ApJS **(accepted on 01.12.2025; arXiv:2509.25167)** — [1 citation]
- 2. **Prajapati**, Mishra, Rawat, Ganesh et al., “*Near infrared background with 1.2m telescope at Mount Abu*”, JAA, 44, 54 (2023) — [1 citation]
- 1. **Prajapati**, Tej, Palacio et al., “*Investigating Particle Acceleration in the Wolf-Rayet Bubble G2.4+1.4*”, ApJL, 884, L49 (2019) — [23 citations]

### ***Co-authored publications***

6. Bakx, Algera, **Prajapati** et al., “Breathless BEARS: [OIII]88 $\mu$ m Emission of Dusty Star-Forming Galaxies at  $z = 3 - 4$ ”, MNRAS (**accepted; arXiv:2601.09780**)
5. Cox, Butler, Keeton et al. (**incl. Prajapati**), “HerS-3: An Exceptional Einstein Cross Reveals a Massive Dark Matter Halo”, ApJ, 991, 53 (2025)
4. Mishra, Sarkar, **Prajapati** et al., “A summary of instruments proposed for observing pulsating variables from the Mt. Abu Observatory”, JAA, 45, 34 (2024)
3. Saha, Tej, Palacio et al. (**incl. Prajapati**), “Search for particle acceleration in two massive Wolf-Rayet stars using uGMRT observations”, MNRAS, 526, 750 (2023)
2. MAGIC Collaboration, Acciari, Ansoldi et al. (**incl. Prajapati**), “VHE gamma-ray detection of FSRQ QSO B1420+326 and modeling of its enhanced broadband state in 2020”, A&A, 647, A163 (2021)
1. Yadav, Samal, Semenko et al. (**incl. Prajapati**), “A Comprehensive Study of the Young Cluster IRAS 05100+3723: Properties, Surrounding Interstellar Matter, and Associated Star Formation”, ApJ, 926, 16 (2021)

### ***Instrumentation-based papers***

4. Ganesh, Rai, Krishnakumar et al. (**incl. Prajapati**), “EMPOL: an EMCCD based optical imaging polarimeter”, SPIE, 11447, 114479E (2020)
3. Rai, Ganesh, Paul et al. (**incl. Prajapati**), “Optical aspects of Near-Infrared Imager Spectrometer and Polarimeter instrument (NISP)”, SPIE, 11447, 1144765 (2020)
2. Sarkar, Shah, Singh et al. (**incl. Prajapati**), “Electronics design and development of near-infrared imager, spectrometer, and polarimeter”, SPIE, 11447, 1144778 (2020)
1. Kasarla, Patwal, Adalja et al. (**incl. Prajapati**), “Mechanical aspects of near infrared imager spectrometer and polarimeter”, SPIE, 11447, 114476U (2020)

### ***White paper***

1. Narendranath, Ganesh et al. (**incl. Prajapati**), “Solar system research prospects for the decade and beyond”, JAA, 46, 34 (2025)

### ***Conference proceedings***

2. Saha, Tej, Palacio et al. (**incl. Prajapati**), “Study of Wolf-Rayet Stars Using uGMRT”, Bull. Soc. R. Sci. Liège, 93, 491 (2024) – Indo-Belgian Collaboration (BINA) Workshop
1. Uppal, Ganesh, Joshi et al. (**incl. Prajapati**), “Optical Polarisation Study of Galactic Open Clusters”, Bull. Soc. R. Sci. Liège, 93, 155 (2024) – Indo-Belgian Collaboration (BINA) Workshop