

# Namrata Roy

## PERSONAL DATA

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PLACE OF BIRTH: Kolkata, India  
DATE OF BIRTH: 24 July 1993  
AFFILIATION: UC Santa Cruz, Dept. of Astronomy  
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## EDUCATION

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2016 – Present Graduate Program in ASTROPHYSICS, **University of California Santa Cruz, USA**  
Advisor: Kevin Bundy

JUNE 2016 Master of Science in PHYSICS, **Presidency University, India**  
Advisor: Ritaban Chatterjee  
GPA: 7.80/10

JUNE 2014 Bachelor of Science in PHYSICS, **Presidency University, India**  
GPA: 8.15/10

## HONORS AND AWARDS

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2021 UC Dissertation Year Fellowship 2021

2019 – Present Osterbrock Fellowship

2018 Osterbrock trip to STSci, Baltimore

2015 Summer Research Fellowship, **Harish Chandra Research Institute, India**

2011 – 2016 INSPIRE Scholarship, **Dept. Of Science and Technology, India**

## RESEARCH EXPERIENCE

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- 2017 – Present    **Department of Astronomy & Astrophysics, UC Santa Cruz**  
*Star formation suppression and feedback in quiescent galaxies*  
Advisor: Kevin Bundy
- AUG 2016 – FEB 2017    **Department of Astronomy & Astrophysics, UC Santa Cruz**  
*Study of Quasars and galaxies in the background of Andromeda*  
Advisor: Raja Guhathakurta
- JUNE 2014 – JULY 2016    **Department of Physics, Presidency University**  
*Studying the temporal symmetry of blazar light curves*  
Advisor: Ritaban Chatterjee
- JAN 2016 – MAY 2016    **Inter University Center of Astronomy & Astrophysics**  
*Characteristics of chromospheric spectral line in solar flares*  
Advisor: Durgesh Tripathi
- MAY 2015 – AUG 2015    **Department of Physics, Harish Chandra Research Institute**  
*Pseudo Schwarzschild accretion model of black holes*  
Advisor: Tapas Das

## REFEREED PUBLICATIONS

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- “Radio morphology of red geysers”, Roy, N., Moravec, E. [and 10 others]. 2021 (Under Review)
- “Signatures of inflowing gas in red geyser galaxies hosting radio-AGN” , Roy, N., Bundy, K. [and 11 others]. 2021 In Press (arXiv:2106.14901)
- “Evidence of wind signatures in the gas velocity profiles of red geysers” , Roy, N., Bundy, K. [and 10 others]. 2021, *ApJ*, **913**, 33
- “Detecting Radio-AGN signatures in red geysers”, Roy, N., Bundy, K., Cheung, E., Rujopakarn, W., Cappellari, M., Belfiore, F., Yan, R., Heckman, T., Bershad, M., Greene, J., Westfall, K., Drory, N., Rubin, K., Law, D., Zhang, K., Gelfand, J., Bizyaev, D., Wake, D., Masters, K., Thomas, D., Li, C., Riffel, R. 2018, *ApJ*, **869**, 117
- “Probing the jets of blazars using the temporal symmetry of light curves”, Roy, N., Chatterjee, R., Joshi, M., Ghosh, A. 2018, *MNRAS*, **482**, 743
- “Precessing winds from the nucleus of the prototype Red Geyser?”, Riffel, R., Nemmen, R., Ilha, G., Rembold, S., Roy, N.. [and 8 others]. 2019, *MNRAS*, **485**, 5590
- “SDSS IV MaNGA: Star-formation-driven Biconical Outflows in the Local Universe”, Bizyaev, D., Chen, Y., Shi, Y., Riffel, R., Diamond-Stanic, A., Roy, N. 2019, *ApJ*, **882**, 145
- “A Catalog of 406 AGNs in MaNGA: A Connection between Radio-mode AGN and Star Formation Quenching”, Comerford, J., Negus, J. [and 9 others including Roy, N.]. 2020, *ApJ*, **901**, 159

## PRESENTATIONS

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- NOVEMBER 2020 *"Galaxies with AGN-winds"*  
**CCA galaxy formation group, Flatiron**
- OCTOBER 2020 *"Red Geysers: Searching for maintenance mode feedback in typical quiescent galaxies"*  
**Young Astronomers on Galactic Nuclei (yAGN), 2020**
- OCTOBER 2020 *"Update on Red Geysers: feeding and feedback in quiescent galaxies with AGN-winds"*  
**MaNGA collaboration meeting, 2020**
- SEPTEMBER 2020 *"Red Geysers: Searching for maintenance mode feedback in typical quiescent galaxies"*  
**Keck Science meeting, 2020**
- AUGUST 2020 *"Gone with the wind: How do galaxies die?"*  
**Alumni Lecture Series, Presidency University, India**
- JUNE 2020 *"Suppression of star formation in Early type galaxies via AGN-driven winds: Red Geysers"*  
**SDSS collaboration meeting, 2020**
- APRIL 2020 *"Update on Red geysers: Radio-AGN detection, triggering and quenching"*  
**MaNGA Scicon Presentation, Telecon**
- NOVEMBER 2019 *"Red Geysers: Evidence of Maintenance mode feedback in typical quiescent galaxies"*  
**CGM Seminar Talk, UC Berkeley, CA, USA**
- APRIL 2019 *"Signatures of AGN-driven winds in Red Geysers"*  
**SDSS IV-MaNGA collaboration meeting, Oxford, UK**
- AUG 2018 *"AGN signatures on Red Geysers based on Radio observations"*  
**Santa Cruz Galaxy Workshop, UC Santa Cruz, CA, USA**
- AUG 2018 *"Detecting Radio-AGN signatures in Red geysers from SDSS IV-MaNGA"*  
**PhD Summer School: Supermassive Black Holes and their Host Galaxies, Asiago, Italy**
- MAY 2018 *"Detecting Radio mode AGN signatures in Red geysers"*  
**Friday Lunch and Seminar Hour (FLASH), UC Santa Cruz, CA**
- JAN 2018 *"Red Geyser: A New Class of Galaxy with Large-scale AGN-driven Winds"*  
**231st American Astronomical Society Meeting, DC, USA**
- DEC 2017 *"Looking for AGN signatures in red geysers"*  
**SDSS IV-MaNGA collaboration meeting, Campeche, Mexico**
- MAY 2016 *"Characteristics of Chromospheric spectral line in Solar Flares"*  
**Thesis Presentation, Presidency University, Kolkata, India**
- JUNE 2016 *"Properties of Gamma-Ray and Optical Outbursts of Fermi Blazars"*  
**34th Meeting of the Astronomical Society of India (ASI), Srinagar, India**
- APRIL 2014 *"Distance Measurement in Astrophysics"*  
**Astro-particle tea, Presidency University, Kolkata, India**

## CONFERENCE PROCEEDINGS

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*“Red geyser: A new class of galaxy with large scale AGN driven winds”*, Roy, N., Bundy, K., Cheung, E., MaNGA team. 2018, **American Astronomical Society Meeting Abstracts**, 231, 250.46

*“A study of Galaxies and Quasars in the background of Andromeda Galaxy”*, Dhara, A., McConnell, K., Guhathakurta, P., Roy, N., Waite, J. 2018, **American Astronomical Society Meeting Abstracts**, 231, 351.11

*“WFOS instrument trade study: slicer vs. fiber instrument concept designs and results”*, Bundy, K., Savage, M., Kupke, R. [and 19 others including Roy, N.], **Proc. SPIE 10702, Ground-based and Airborne Instrumentation for Astronomy VII**, 1070220 (9 July 2018)

## OBSERVING EXPERIENCE

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Keck Observatory, KCWI spectroscopy, 2 half nights

Keck Observatory, DEIMOS spectroscopy, 1 night

## SUCCESSFUL PROPOSALS

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*“Red geysers and suppression of star formation”*, NSF Proposal (co-PI:Roy), September 2018

*“Towards the first measurement of gas-phase metallicity in early type LINER galaxies”*, Keck Proposal (co-PI:Roy), June 2018

*“Modeling Fiber Performance for Ultra-faint Spectroscopy”*, UCO Mini-grant (co-PI:Roy), Jan 2018

*“A Study of Radio Mode Feedback in Red Geysers from SDSS IV’s MaNGA Survey”*, GMRT Proposal (co-PI: Roy), March 2019

*“Cold gas on the red sequence: maintenance mode feedback in action”*, APEX proposal (deputy-PI: Roy), December 2019

## COMPUTER SKILLS

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Programming language:   Efficient in Fortran, Python and IDL.  
Working knowledge of IRAF, C and Mathematica.

Operating system:   Comfortable in Linux, windows and Mac-OS.

## TEACHING AND MENTORING EXPERIENCE

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- SPRING 2021    Mentor, UC Santa Cruz  
**Society of physics students and women in physics and astronomy.**
- WINTER 2018    Teaching Assistant, UC Santa Cruz  
**ASTR 5 : Overview of the Universe** (undergraduate course).
- WINTER 2017    Teaching Assistant, UC Santa Cruz  
**ASTR 2 : The formation and Evolution of the Universe** (Undergraduate course).
- SUMMER 2017    Primary Research Mentor, UC Santa Cruz  
**Science Internship Program** (for high school students)
- 2017    Co-advised undergraduate research of Marina Huang (UCSC)  
**An automated algorithm to identify MaNGA Red Geysers**

## OUTREACH, LEADERSHIP AND OTHER ACTIVITIES

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1. Lead of **Ask-an-astronomer** czarship, *October 2016 - September 2017*
2. Coordinator of **Women in Physics & Astronomy (WIPA)**, *2016 - 2017*
3. Participated in **Osterbrock Leadership training trip**, *October 2018*
4. Organizer of various events as a part of **Osterbrock Leadership Program**, *2019 - Present*
5. Mentor at **Society of Physics Students and Women in Physics and Astronomy mentoring program**, *2021*
6. Instructor at **Lamat: Summer Tech training**, *2021*