

# Sanchit Sabhlok

Ph.D. Candidate in Physics

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## EDUCATION

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**University of California, San Diego**

Physics, Ph.D.

La Jolla, CA

2017 – Present

**UM-DAE Center for Excellence in Basic Sciences**

Physics, Integrated M.S.

Mumbai, India

2012 – 2017

## RESEARCH EXPERIENCE

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### OIRLab

Advisor: Prof. Shelley Wright

Graduate Student Researcher

La Jolla, CA

2019 – Present

- Studied environments around radio-loud quasars 3C 9 and 4C 05.84 using KCWI and MOSFIRE.
- Studied the relationship between the circumgalactic medium and radio jets around radio loud quasars using Keck KCWI data.
- Developed an analytic PSF Generator for OSIRIS ETC.
- Modeling an on-axis reconstructed PSF for the Keck All-sky Precision Adaptive Optics AO system.

### APOLLO

Advisor: Prof. Tom Murphy

Graduate Student Researcher

La Jolla, CA

2018 – Present

- Characterized the timing performance of the APOLLO Lunar Laser Ranging experimental setup and improving the APD timing performance, resulting in improved system performance.
- Developed an in-house code for thermal modeling of the Lunar corner cube reflectors in a convection free radiative environment to characterize their thermal performance.

### Aarhus University Nuclear Physics Group

Advisor: Prof. Hans Fynbo

Masters Thesis Research

Aarhus, Denmark

2017

- Put constraints on the triple alpha decay of  $C^{12}$  by bombarding a  $B^5$  nucleus with Hydrogen and Helium beams using the 5 MeV Van de Graaf accelerator facility.

## TEACHING EXPERIENCE

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**Physics 2C: Fluids, Waves, Thermodynamics, and Optics**

Lecturer

Instructor on Record: Sanchit Sabhlok

Summer

2021

**Physics 200A: Graduate Theoretical Mechanics**

Grader Fall  
2019  
Instructor on Record: Daniel Dubin

### Teaching and Learning Commons

Academic Student Worker Jan – Aug  
2019  
Advisor: Martha Stacklin

- Ran workshops on Presentation Skills and Presentation Design for UCSD graduate students and postdocs, with special focus on international scholars.
- Assisted in organizing and running the Summer Bridge Program for the incoming international graduate students in the Physics department in Summer 2019.

### Physics 110A: Classical Mechanics

Teaching Assistant Fall Quarter  
2017  
Instructor on Record: Rick Averitt

## SERVICE EXPERIENCE

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### KAPA Annual Science Meeting

Organizing Committee Member 2020 – 2022  
Organizing Committee, Chair 2023

### Organizer

UCSD Astrophysics Journal Club 2021 – 2023

### Founder and Organizer

JWSTea Time 2022 – Present

### Chair

UCSD Physics Graduate Council 2020 – 2021

### Class Representative

UCSD Physics Graduate Council 2019 – 2022

### Committee Member

Physics Dept Outreach Committee 2018 – 2020

### Committee Member

Astrophysics Seminar Committee 2021 – 2022

### Committee Member

Physics Climate Committee 2021

### Committee Member

Physics Colloquium Committee 2021 – 2022

### Founding Member

Graduate Student Diversity Initiative 2020 – 2021

### UCSD Physics Recruiter

SACNAS Conference 2019

## OUTREACH EXPERIENCE

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### Young Physicist Program

Co-Director Aug 2018 – Present

### UCSD Cosmic Tours Portable Planetarium

Student Coordinator Jan 2020-Present

### Tech Trek at UCSD

Student Volunteer Annual 2018-2020

### San Diego Expo Day

UCSD Student Volunteer Annual 2018-2020

### Young Physicist Program Newsletter

Founder Oct 2020

### Graduate Student Outreach Coordinator

For UCSD Physics Department Jan – Aug 2020

## AWARDS AND FELLOWSHIPS

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2021 Friends of International Center Fellowship  
2013 Kishore Vaigyanik Protsahan Yojana  
(KVPY) Fellow  
2012 INSPIRE Fellow

## SKILLS

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Python · C · FORTRAN · Mathematica  
L<sup>A</sup>T<sub>E</sub>X · Shellscript · JIRA · Git

## CONTRIBUTED TALKS

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| 1. KAPA Science Meeting  | September, 2023 |
| 2. Astro3D conference on Outflows, Feedback and the Baryon Cycle | July, 2023      |
| 3. KAPA Science Meeting  | September 2022  |
| 4. Keck Science Meeting  | September 2021  |

## INVITED TALKS

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| 1. Texas A&M University                            | December 2023 |
| 2. University of Texas, Austin                     | December 2023 |
| 3. Carnegie Observatories                          | October 2023  |
| 4. University of California Los Angeles            | October 2023  |
| 5. Virtual International Workshop on Laser Ranging | October 2023  |
| 6. University of California, Berkeley              | October 2023  |
| 7. Yale University                                 | October 2023  |

## REFERENCES

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### **Shelley Wright**

Professor  
Department of Astronomy  
and Astrophysics,  
UC San Diego  
s2wright@ucsd.edu

### **Tom Murphy**

Professor  
Department of Astronomy  
and Astrophysics,  
UC San Diego  
tmurphy@ucsd.edu

### **Karin Sandstrom**

Associate Professor  
Department of Astronomy  
and Astrophysics,  
UC San Diego  
kmsandstrom@ucsd.edu

## LIST OF PUBLICATIONS

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1. “Circumgalactic Environments around Distant Quasars 3C 9 and 4C 05.84”. **Sabhlok, S.**; Wright, S. A.; Vayner, A.; Simonaitis-Boyd, S.; Murray, N.; Armus, L.; Cosens, M.; Wiley, J.; Kriek, M. Submitted to ApJ (2023).
2. “Fifteen years of millimeter accuracy lunar laser ranging with APOLLO: data reduction and calibration”. Colmenares, N. R.; Battat, J. B. R.; Gonzales, D. P.; Murphy, T W., Jr.; **Sabhlok, S.** doi:10.48550/arXiv.2304.11174 (2023).
3. Fifteen years of millimeter accuracy lunar laser ranging with APOLLO: dataset characterization - Battat, J. B. R.; Adelberger, E.; Colmenares, N. R.; Farrah, M.; Gonzales, D. P.; Hoyle, C. D.; McMillan, R. J.; Murphy, T. W., Jr.; **Sabhlok, S.**; Stubbs, C. W. doi:10.48550/arXiv.2304.11128 (2023).
4. “Cold mode gas accretion on two galaxy groups at  $z \sim 2$ ”. Vayner, A.; Zakamska, N. L.; **Sabhlok, S.**; Wright, S. A.; Armus, L.; Murray, N.; Walth, G.; Ishikawa, Y. MNRAS 519, 1 (2023).
5. “Keck All sky Precision Adaptive optics program overview”. Wizinowich, P.; Lu, J. R.; Cetre, S.; Chin, J.; Correia, C.; Delorme, J. -R.; Gers, L.; Lilley, S.; Lyke, J.; Marin, E.; Ragland, S.; Richards, P.; Surendran, A.; Wetherell, E.; Chen, C. -F.; Chu, D.; Do, T.; Fassnacht, C.; Freeman, M.; Gautam, A.; Ghez, A.; Hunter, L.; Jones, T.; Liu, M. C.; Mawet, D.; Max, C.; Morris, M.; Phillips, M.; Ruffio, J. -B.; Rundquist, N. -E.; **Sabhlok, S.**; Terry, S.; Treu, T.; Wright, S. Proc. SPIE 12185 (2022).
6. “Kinematics and Feedback in H II Regions in the Dwarf Starburst Galaxy IC 10”. Cosens, M.; Wright, S. A.; Murray, N.; Armus, L.; Sandstrom, K.; Do, T.; Larson, K.; Martinez, G.; **Sabhlok, S.**; Vayner, A; Wiley, J. ApJ 929, 74 (2022).

## ADVANCED MANUSCRIPTS

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1. “Environments around Radio-loud quasars with compact jets”. **Sabhlok, S.**; Wright, S. A.; Vayner, A.; Simonaitis-Boyd, S.; Armus, L.; Cosens, M.; Wiley, J. In Prep (2023).
2. “Degradation of Lunar Retroreflectors performance due to dust accumulation”. **Sabhlok, S.**; Gonzales, D. P.; Battat, J. B. R.; Murphy, T W., Jr.; Colmenares, N. R. In prep (2023).