

DHRUV MULEY

CURRICULUM VITAE

August 2019

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EDUCATION

B.A. Physics, B.A. Astrophysics, University of California, Berkeley 2016—2020 (*projected*)

Major GPA: 3.868 · Overall GPA: 3.845 · *Honors to Date*

Research Interests numerical hydrodynamics, exoplanets/protoplanetary disks,
galaxy evolution

Relevant Coursework *Undergraduate:* Statistical and Thermal Physics, Quantum Mechanics I-II,
Classical Mechanics, Mathematical Methods in Physics, Stellar Physics

Graduate: General Relativity, Radiative Processes in Astrophysics,
Classical Electrodynamics, Geophysical and Astrophysical Fluid Dynamics

Stellar Dynamics and Galactic Structure

Italics denote in-progress coursework.

PUBLICATIONS

1. Fung, Jeffrey; **Muley, Dhruv**. “A staggered semi-analytic method for simulating dust grains subject to gas drag,” *The Astrophysical Journal Supplement Series*; (2019, submitted)
2. **Muley, Dhruv**; Fung, Jeffrey; van der Marel, Nienke. “PDS 70: A transition disk sculpted by a single planet,” *The Astrophysical Journal Letters*, 879, 1; (2019, ArXiv:1902.07191)

RESEARCH

SURF Fellow, California Institute of Technology 2019—

Advisor: Dr. Coral Wheeler, Prof. Philip F. Hopkins

Implementing an improved sub-grid stellar evolution model into the GIZMO hydrodynamics code.

Undergraduate Researcher, University of California, Berkeley 2018–19

Advisor: Dr. Jeffrey Fung

Devised a model to explain the observed morphology of the transition disk PDS 70, and tested it with the GPU-hydrodynamics code PEnGUIn. Subsequently, investigating other topics in disk dynamics and numerical methods.

Affiliate, Lawrence Berkeley National Laboratory 2017–18

Advisor: Dr. Carlton Pennypacker

Undergraduate Researcher, Columbia University (remote) 2016

Advisor: Prof. David Kipping

TECHNICAL SKILLS

Advanced	Python, Unix
Intermediate	C/C++, CUDA, Java, Mathematica, L ^A T _E X
Basic	HTML, JavaScript, Photoshop, MPI

TEACHING

Reader , Astronomy C162, University of California, Berkeley Instructor: Prof. Eugene Chiang Graded roughly 40 homework assignments biweekly for Astronomy C162, an upper-division planetary astrophysics course, in Fall 2019.	2019
Reader , Physics 137B, University of California, Berkeley Instructor: Prof. Michael Crommie Graded roughly 60 homework assignments biweekly for Physics 137B, the second semester of upper division quantum mechanics at Berkeley, during Spring 2019.	2019
Undergraduate Student Instructor , Astronomy C10, University of California, Berkeley Instructor: Prof. Alex Filippenko Ran weekly discussion sections, devised worksheets and study materials, and graded exams for approximately 60 students in Astronomy C10, UC Berkeley’s survey course on astronomy for non-majors, during the Fall 2018 semester.	2018
Reader , Astronomy C10, University of California, Berkeley Instructor: Prof. Alex Filippenko Graded roughly 100 homework assignments per week for Astronomy C10.	2017

TALKS AND CONFERENCES

“PDS 70: A transition disk sculpted by a single planet,” <i>UC Berkeley Astronomy Lunch Talk</i>	2019
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OUTREACH

Member , Undergraduate Astrophysics Service Committee, University of California, Berkeley Advisor: Amber Banayat, Prof. Mariska Kriek Devised plans to improve recruitment and retention of astrophysics majors.	2019—
Mentor , Be a Scientist program, Martin Luther King Jr. Middle School, Berkeley Advisor: Darlene Yan Worked with students in Berkeley aged 11-14 to develop scientifically testable hypotheses, devise and conduct experiments, and analyze results.	2018

LANGUAGES

English Fluent; professional working proficiency
Spanish Professional working proficiency
Marathi Basic

REFERENCES

Available upon request.