

# DHRUV MULEY

## CURRICULUM VITAE

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## EDUCATION

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

Major GPA: 3.877 · Overall GPA: 3.853 · *Honors to Date*

**Research Interests** computational fluid dynamics, extrasolar planets, protoplanetary disks

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

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

*Italics* denote in-progress coursework.

## RESEARCH

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**Undergraduate Researcher**, University of California, Berkeley 2018—

Advisor: Jeffrey Fung

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

**Affiliate**, Lawrence Berkeley National Laboratory 2017–18

Advisor: Carlton Pennypacker

Studied theoretical/computational models for the production and destruction of interstellar dust across cosmological time.

**Undergraduate Researcher**, Columbia University (remote) 2016

Advisor: David Kipping

Simulated transits of extrasolar moons in circumbinary systems, as well as the transit-timing variation (TTV) and transit-duration variation (TDV) they would induce in host planets, and analyzed data from the *Kepler* space telescope to compare.

## PUBLICATIONS

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1. **Muley, Dhruv**; Fung, Jeffrey; van der Marel, Nienke. “PDS 70: A transition disk sculpted by a single planet,” *The Astrophysical Journal Letters* (2019, submitted; ArXiv:1902.07191)

## TECHNICAL SKILLS

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<b>Advanced</b>	Python, Unix
<b>Intermediate</b>	L <sup>A</sup> T <sub>E</sub> X, Mathematica, Java, C++
<b>Basic</b>	HTML, JavaScript, Photoshop, MPI

## TEACHING

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<b>Reader</b> , Physics 137B, University of California, Berkeley Professor: Alex Filippenko Graded roughly 30 homework assignments per week for Physics 137B, the second semester of upper division quantum mechanics at Berkeley, during Spring 2019.	2019
<b>Undergraduate Student Instructor</b> , Astronomy C10, University of California, Berkeley Professor: 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
<b>Reader</b> , Astronomy C10, University of California, Berkeley Professor: Alex Filippenko Graded roughly 100 homework assignments per week for Astronomy C10.	2017

## TALKS AND CONFERENCES

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

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<b>Mentor</b> , 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
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## LANGUAGES

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<b>English</b>	Fluent; professional working proficiency
<b>Spanish</b>	Professional working proficiency
<b>Marathi</b>	Basic

## REFERENCES

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Available upon request.