

CLAIRE LAMMAN

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INTERESTS

I bridge the fields of galactic astrophysics and cosmology by finding novel correlations between objects in the non-linear regime of galaxy dynamics, such as galaxies and galaxy groups, and the large-scale structure of the Universe. I am interested in refining ways to quantify these correlations and exploring the additional cosmological information they reveal in large spectroscopic surveys like [DESI](#). I am also passionate about outreach and strive to make our research accessible to broad audiences through creative mediums.

EDUCATION

Harvard University	2019 - present
Advisor: Daniel Eisenstein	
Ph.D. Candidate , Astronomy and Astrophysics	Expected Graduation: May 2025
M.S. Astrophysics	May 2022
University of Colorado Boulder	2015 - 2019
Astrophysical and Planetary Sciences, <i>Summa Cum Laude</i>	
B.A. Astronomy	May 2019
B.A. Physics	May 2019

POSITIONS & FUNDING

NSF Graduate Research Fellow	2019 - 2023
CfA Workshop Funding, to host the LILAC Workshop (\$6.9k)	2024
Funding for Planetarium Film (\$73k)	2021 - 2023
<i>Awarded from DESI Collaboration to create the planetarium film 5000 Eyes</i>	
Independent Research Grant (\$3k) University of Colorado, Boulder	2017 - 2019
<i>M-dwarf multiplicity survey, awarded by Boettcher Foundation. Advisor: Zachory Berta-Thompson</i>	
REU Student University of Hawai'i	2017
<i>Analyzing Robo-AO observations. Advisor: Christoph Baranec</i>	
Undergraduate Research Assistant University of Colorado, Boulder	2017
<i>CMB Observations with South Pole Telescope. Advisor: Nils Halverson</i>	
Boettcher Scholar	2015 - 2019
<i>Merit-based, full-ride scholarship to any Colorado university</i>	

COLLABORATION MEMBERSHIPS

Dark Energy Spectroscopic Instrument (DESI)	July 2019 - Present
<i>Eligible for continuing participant status at non-DESI institutions</i>	

SELECTED AWARDS

Harvard Horizons Scholar	2024
<i>Selected by faculty as one of eight students to represent extraordinary PhD research at Harvard.</i>	
Certificate of Distinction in Teaching	2020, 2021, 2022
<i>Awarded by Harvard's Bok Center to teaching fellows with an overall student evaluation of 4.5 / 5.0 or higher.</i>	

University of Colorado Outstanding Undergraduate <i>Top honor for CU Boulder's College of Arts and Sciences Fall 2019 graduating class.</i>	2019
Chambliss Astronomy Achievement Award (231st AAS Meeting)	2018
Jacob Van Ek Scholar <i>"One of the highest honors in CU's College of Arts & Sciences" recognizing superior academic achievement.</i>	2018

ADVISING & MENTORING

Primary advisor: Annika Kumwembe REU Student (Center for Astrophysics) & Undergraduate Thesis (St Mary's College of Maryland) <i>Supplementing DESI multiplet measurements with imaging data.</i>	May 2024 - present
Co-advisor: Miguel Perdomo Undergraduate Thesis (Universidad de los Andes) <i>Exploring multiplet alignment in DESI's bright galaxy survey. Primary advisor: Jaime Forero-Romero.</i>	May 2024 - present
Mentor for SAO-UMass Latino Initiative Program	2023
Mentor for CfA Peer-Mentoring Program	2021, 2022, 2023

TEACHING

Astronomy Teaching Fellow <i>Harvard University, AY 17: Galaxies and Cosmology taught by Daniel Eisenstein</i>	Fall '20, '21, and '22
Observing Class Assistant <i>Harvard University, department observing class consisting of lectures and tours of Arizona facilities</i>	Spring '23
Learning Assistant <i>CU Boulder, Stars and Galaxies for Non-Majors taught by Doug Duncan</i>	Fall '16

SERVICE

DESI Intrinsic Alignment meeting organizer	2023 - present
Lead organizer of LILAC Workshop	2024
Reviewer (Open Journal of Astrophysics)	2024
Faculty Hiring Student Representative (Harvard University) <i>Elected to gather and report student sentiment to faculty hiring committee</i>	2023
White Paper Contributions <ul style="list-style-type: none"> · CfA white paper, co-lead author "ComSciCon" · CfA white paper, coauthor "A Harvard Planetarium: Opportunity for Growth and Outreach" · Harvard Science Center white paper, coauthor "A Harvard Planetarium and Science Center Expansion" 	2023
Grad student weekly social hour organizer	2019 - 2021

OUTREACH

I create many outreach materials, including accessible paper summaries ([as featured in Physics Today](#)), [artwork](#), [comics](#), and even [cakes](#)! Here are my formal outreach roles; public talks are listed below.

DESI Press & Visualizations <i>Create graphics for and help construct DESI's press releases, including our Y1 results.</i> <i>Featured in over 500 unique articles, including the New York Times, NPR, and The Guardian.</i>	2024
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Planetarium Film: “5000 Eyes: Exploring the Universe with DESI”

Premiered 2023

In Collaboration with DESI and Fiske Planetarium

- Conceived, secured \$73k, wrote, and directed
- Film translated into 8 languages, downloaded by over 150 theaters in 30 countries.

DESI’s Education and Outreach Committee

2021 - present

Co-chair as of 2023. Making DESI’s science and data accessible to broad audiences through [DESI’s website](#), events, press, and coordinating efforts within the collaboration.

ComSciCon Leadership Team

2019 - 2023

- Organizer of Flagship Workshops ‘20, ‘21, ‘22
- Co-chair of Flagship Local Organizing Committee ‘21, ‘22
- Chair of Flagship Application Committee, ‘21, ‘22

Fiske Planetarium (CU Boulder)

2015 - 2019

Presented over 300 astronomy shows to the public and school groups, worked with lecturers to develop shows, trained student employees, operated theater, led outreach trips, laserist.

NASA Film Grant

2017 - 2019

Helped create a series of short planetarium films with Fiske Planetarium.

Conceived and wrote scripts for [Parker Solar Probe](#) and [Transiting Exoplanet Survey Satellite](#)

CU STARS

2015 - 2019

University group for astronomy and STEM inclusivity, outreach to under-privileged Colorado high schools

Imiloa Astronomy Center

2017

Volunteer at planetarium and Hawai’ian cultural center

PUBLICATIONS

Lead Author

C. Lamman, D. Eisenstein et al., *Detection of the large-scale tidal field with galaxy multiplet alignment in the DESI Y1 spectroscopic survey*, [submitted 2024](#) | [accessible summary](#)

C. Lamman, D. Eisenstein et al., *Redshift-dependent RSD bias from Intrinsic Alignment with DESI Year 1 Spectra*, [MNRAS 2024](#) | [accessible summary](#)

C. Lamman, E. Tsaprazi, J. Shi, N. Sarcevic, S. Pyne, E. Legnani, T. Ferreira, *The IA Guide: A Breakdown of Intrinsic Alignment Formalisms*, [OJA 2024](#)

C. Lamman, D. Eisenstein et al., *Intrinsic Alignment as an RSD Contaminant in the DESI Survey*, [MNRAS 2023](#) | [accessible summary](#)

C. Lamman, C. Baranec, Z. K. Berta-Thompson, N. M. Law, J. Schonhut-Stasik, C. Ziegler, M. Salama, R. Jensen-Clem, D. A. Duey, R. Riddle, S. R. Kulkarni, J. G. Winters, J. M. Irwin, *Robo-AO M Dwarf Multiplicity Survey: Catalog*, [AJ 2020](#)

Contributing Author (see [here](#) for a complete, updated list)

K. Barkaoui et al., *Three short-period Earth-sized planets around M dwarfs discovered by TESS: TOI-5720 b, TOI-6008 b, and TOI-6086 b*, [A&A 2024](#)

DESI Collaboration et al., *The Dark Energy Spectroscopic Instrument: Early Data Release*, [AJ 2024](#)

DESI Collaboration et al., *Validation of the Scientific Program for the Dark Energy Spectroscopic Instrument*, [AJ 2024](#)

DESI Collaboration et al., *Overview of the Instrumentation for the Dark Energy Spectroscopic Instrument*, *AJ* 2022

G. Tianjun et al., *TESS discovery of a sub-Neptune orbiting a mid-M dwarf TOI-2136*, *MNRAS* 2022

J. Schonhut-Stasik, D. Huber, C. Baranec, **C. Lamman**, M. Salama, R. Jensen-Clem, D. A. Duev, R. Riddle, S. R. Kulkarni, N. M. Law, *Robo-AO Kepler Asteroseismic Survey. II. Do Stellar Companions Inhibit Stellar Oscillations?* *ApJ* 2020

INVITED TALKS

I have been invited to give 17 colloquium and seminar talks and given 30+ research talks.

scheduled

Astro-Cosmology Seminar <i>Donostia International Physics Center</i>	Nov. 2024
Lunch Seminar <i>Carnegie Observatories</i>	Nov. 2024
Astronomy Seminar <i>University of California Berkeley</i>	Nov. 2024
Cosmology Seminar <i>Princeton University</i>	Sept. 2024
Astronomy Colloquium <i>University of Wyoming</i>	April 2024
Midwest Cosmology Seminar <i>virtual</i>	March 2024
Astronomy Seminary <i>University of Massachusetts Lowell</i>	March 2024
Cosmo Talks <i>virtual</i>	Feb. 2024
Lawrence Berkeley National Laboratory, DESI Lunch Seminar	March 2023
Astronomy Lunch Seminar, <i>University of Colorado Boulder</i>	March 2023
Astrophysics Speaker Series, <i>University of Montreal CIELA Institute, virtual</i>	March 2023
Astronomy Seminar <i>Northeastern University</i>	Nov. 2022
LSST-DESC Intrinsic Alignment Meeting <i>virtual</i>	Oct. 2022
CCAPP Seminar, <i>Ohio State University</i>	Oct. 2022
Astro Seminar <i>Tufts University</i>	Sept. 2022
Ralf Bender's Group Seminar, <i>Max Planck Institute, virtual</i>	Sept. 2022
Seminar, <i>Kavli Institute for the Physics and Mathematics of the Universe Seminar, virtual</i>	Aug. 2022

CONTRIBUTED & LOCAL TALKS

ITC Lunch Talk <i>Harvard Center for Astrophysics</i>	Oct. 2024
Students and Faculty Forum <i>Harvard Center for Astrophysics</i>	Nov. 2024
Galaxy Groups in the era of eROSITA and Euclid <i>Sesto Italy</i>	July 2024
ITC Lunch Talk <i>Harvard Center for Astrophysics</i>	Oct. 2023
Lars Hernquist Group Meeting <i>Harvard Center for Astrophysics</i>	July 2023
Students and Faculty Forum <i>Harvard Center for Astrophysics</i>	March 2023
Hol-IA: A holistic approach to galaxy intrinsic alignments <i>The Lorentz Center</i>	March 2023
Cosmology on the Beach <i>Cancún Mexico</i>	Dec. 2022
From galaxies to cosmology with deep spectroscopic surveys <i>Marseille France</i>	July 2022
Cosmology Journal Club, <i>Harvard Physics Department</i>	April 2022
Department Research Forum, <i>Harvard Center for Astrophysics</i>	April 2022
232 American Astronomical Society Meeting <i>Denver CO</i>	June 2018

OUTREACH & PUBLIC TALKS

Harvard Horizons: Untangling the Cosmic Web	April 2024
CYW Fair STEM Interview <i>online</i>	May 2024
Women in Cosmology Guest Lecture <i>Tufts ExCollege</i>	April 2023
"5000 Eyes" Premiere Public Talk <i>Fiske Planetarium</i>	March 2023

“5000 Eyes” Premiere, Panelist <i>Chabot Planetarium</i>	March 2023
North Shore Astronomy Club	Nov. 2021, Nov. 2023
Skype a Scientist	Oct. 2020, Feb. 2021, Jan. 2021
YouthAstroNet Astro Chat	April 2020
CU Boulder Astrophysics and Planetary Sciences Commencement Speaker	May 2019
CU Boulder College of Arts and Sciences - Honors Graduate Address	May 2019