

CLAIRE LAMMAN

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INTERESTS

I bridge the fields of cosmology and galactic astrophysics 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

PREVIOUS POSITIONS

Independent Research University of Colorado, Boulder	2017 - 2019
<i>M-dwarf multiplicity survey, awarded \$3k grant by Boettcher Foundation to support research.</i>	
<i>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>	

SELECTED AWARDS

National Academies Eric and Wendy Schmidt Award for Excellence in Science Communications	2024
<i>Graduate student winner, \$20k prize.</i>	
Citation: "Claire Lamman makes complex topics accessible with creativity and innovation. Her use of unique and diverse mediums, including cartoon annotations of scientific papers, to communicate cosmology demonstrates her ingenuity and potential to reach wider audiences and highlights her ability to communicate science through diverse and engaging mediums."	
Harvard Horizons Scholar	2024
<i>Selected by faculty as one of eight students to represent extraordinary PhD research at Harvard.</i>	
NSF Graduate Research Fellow	2019 - 2023
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	2019
<i>Top honor for CU Boulder's College of Arts and Sciences Fall 2019 graduating class.</i>	

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
Boettcher Scholar <i>Merit-based, full-ride scholarship to any Colorado university</i>	2015 - 2019

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 2024
*Create graphics for and help construct DESI’s press releases, including our [Y1 results](#).
 Featured in over 500 unique articles, including the [New York Times](#), [NPR](#), and [The Guardian](#).*

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 and downloaded by over 250 theaters in 41 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 700-member 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

SERVICE

DESI Intrinsic Alignment meeting organizer 2023 - present

Lead organizer of [LILAC Workshop](#) 2024
Including instigating and raising \$6.9k to fund the workshop.

Reviewer (Open Journal of Astrophysics) 2024

Faculty Hiring Student Representative (Harvard University) 2023
Elected to gather and report student sentiment to faculty hiring committee

- 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”

COLLABORATION MEMBERSHIPS

Dark Energy Spectroscopic Instrument ([DESI](#))

July 2019 - Present

Eligible for continuing participant status at non-DESI institutions

SCIENTIFIC PUBLICATIONS

I have five first-author publications and have contributed to 11 total.

[Click here for a complete list \(ADS Library\).](#)

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*, *MNRAS* *October 2024* | [accessible summary](#)

C. Lamman, D. Eisenstein et al., *Redshift-dependent RSD bias from Intrinsic Alignment with DESI Year 1 Spectra*, *MNRAS* *March 2024*, Volume 528, Issue 4, Pages 6559–6567 | [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*, *Open Journal of Astrophysics* *February 2024*

C. Lamman, D. Eisenstein et al., *Intrinsic Alignment as an RSD Contaminant in the DESI Survey*, *MNRAS* *April 2023*, Volume 522, Issue 1, Pages 117–129 | [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. Duev, R. Riddle, S. R. Kulkarni, J. G. Winters, J. M. Irwin, *Robo-AO M Dwarf Multiplicity Survey: Catalog*, *The Astronomical Journal* *March 2020*, Volume 159 Number 4

DESI Publications

My main contributions to DESI survey include: testing fiber assignment algorithm and 30 nights of observing from commissioning through the main survey.

DESI Collaboration et al., *The Dark Energy Spectroscopic Instrument: Early Data Release*, *The Astronomical Journal* *July 2024*, Volume 168 Number 58

DESI Collaboration et al., *Validation of the Scientific Program for the Dark Energy Spectroscopic Instrument*, *The Astronomical Journal* *January 2024*, Volume 168 Number 58

DESI Collaboration et al., *Overview of the Instrumentation for the Dark Energy Spectroscopic Instrument*, *The Astronomical Journal* *October 2022*, Volume 164 Number 207

Other Publications

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* *July 2024*, Volume 687 A264

My contributions: produced plots of Robo-AO contrast curves and observation descriptions

G. Tianjun et al., *TESS discovery of a sub-Neptune orbiting a mid-M dwarf TOI-2136*, *MNRAS* *May 2022*, Volume 514, Issue 3, Pages 4120–4139

My contributions: provided Robo-AO contrast curve, observation descriptions, and interpretations

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 January 2020*, Volume 888 Number 34
My contributions: visually inspected observations with my pipeline and identified additional stellar companions

ADVISING & MENTORING

Primary advisor: Annika Kumwembe May 2024 - present
 REU Student (Center for Astrophysics) & Undergraduate Thesis (St Mary's College of Maryland)
Supplementing DESI multiplet measurements with imaging data.

Co-advisor: Miguel Perdomo May 2024 - present
 Undergraduate Thesis (Universidad de los Andes)
Exploring multiplet alignment in DESI's bright galaxy survey. Primary advisor: Jaime Forero-Romero.

Mentor for SAO-UMass Latino Initiative Program 2023

Mentor for CfA Peer-Mentoring Program 2021, 2022, 2023

TEACHING

Astronomy Teaching Fellow Fall '20, '21, and '22
Harvard University, AY 17: Galaxies and Cosmology taught by Daniel Eisenstein

Observing Class Assistant Spring '23
Harvard University, department observing class consisting of lectures and tours of Arizona facilities

Learning Assistant Fall '16
CU Boulder, Stars and Galaxies for Non-Majors taught by Doug Duncan

INVITED TALKS

I have been invited to give 19 colloquium and seminar talks and given over 30 research talks.

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)
Astro Seminar <i>New York University</i>	Oct. 2024
Cosmology Meeting <i>Flatiron Institute</i>	Oct. 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
Astromerique Speaker Series, <i>University of Montreal CIELA Institute</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</i>	Aug. 2022

CONTRIBUTED & LOCAL TALKS

Students and Faculty Forum <i>Harvard Center for Astrophysics</i>	(Nov. 2024)
ITC Lunch Talk <i>Harvard Center for Astrophysics</i>	Oct. 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>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