

OLIVIA RAE COOPER

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UT Austin, Dept of Astronomy, PMA 16.216 ◇ 2515 Speedway Blvd Austin, TX 78712

EDUCATION

University of Texas at Austin, Ph.D.

Astronomy Graduate Student

Sep 2020 - present

GPA: 4.0/4.0

Smith College, B.A.

Astronomy (Highest Honors) and Physics, Concentration in Climate Change

Sep 2016 - May 2020

GPA: 3.9/4.0

Senior Honors Thesis: *Tales From Our Dusty, Warped Past: Lensing Environments of Planck-Selected Submillimeter Galaxies Observed With Gemini*

POSITIONS

Graduate Research Assistant

3D rendering of the SSA22 protocluster with VIRUS

Sept 2021 - Aug 2022

Advisor: Prof. Caitlin Casey

Dean's Excellence Fellow

Characterizing IR SEDs of DSFGs in the SSA22 field

Sept 2020 - Aug 2021

Advisor: Prof. Caitlin Casey

Caltech LIGO Summer Undergraduate Research Fellow

Observing and modeling ultracompact binaries

June 2019 - Aug 2019

Advisors: Dr. Michael Coughlin, Shreya Anand

University of Utah Physics & Astronomy REU Scholar

Chemodynamics of complex stellar populations in M31

June 2018 - Jan 2019

Advisors: Prof. Anil Seth, Prof. Gail Zasowski

Merenlender Lab Research Intern

Climate literacy and curriculum gaps

Dec 2017 - Aug 2019

Advisor: Prof. Adina Merenlender

Smith College STRIDE/Special Studies Researcher

Transit photometry of K2 and TESS exoplanet candidates

Sep 2016 - May 2020

Advisor: Prof. James Lowenthal

RESEARCH INTERESTS

Massive galaxies at high redshift ($4 < z < 6$), galaxy formation and evolution, large scale structure, multi-wavelength observational extragalactic astronomy

AWARDS

Dean's Excellence Fellowship, *UT Austin College of Natural Sciences*

2020

Mary Dailey Irvine Prize (for an astronomy thesis), *Five College Astronomy Department*

2020

Astronomy Dep't Prize for Excellence in Astronomy & Astrophysics, *Smith College*

2020

Florence Augusta Merriam Bailey Prize (for environmental problem solving), *Smith College*

2020

LIGO Summer Undergraduate Research Fellowship, *Caltech LIGO Lab*

2019

Goldwater Scholarship, *Barry M. Goldwater Foundation*

2019

Chambliss Student Award Honorable Mention, *233rd AAS Meeting*

2019

Grand Prize (selected for NSF REU Conference), *University of Utah REU Symposium*

2018

Physics & Astronomy NSF REU Fellowship, *University of Utah*

2018

Dean's List, *Smith College*

2016-17, 2017-18

STRIDE Scholar, *Smith College*

2016-18

OBSERVING & GRANTS

Awarded Time

ALMA Cycle 8 Band 4 imaging, 9 hr	(PI)
Gemini GMOS-S imaging, 1.25 hr	(PI)
COSMOS-Web: The Webb Cosmic Origins Survey, 209 hr	(Co-I, PIs: J. Kartaltepe & C. Casey)
Gemini GMOS-S imaging and multi-object spectra, 18 hr	(Co-I, PI: J. Lowenthal)
Triple Spec on P200 Telescope, 1 half-night	(PI)

Observing Experience

WIYN 2.1 m Telescope, Kitt Peak National Observatory (remote)	July-August 2019
Triple Spec on P200 Telescope, Palomar Observatory (local)	Aug 13, 2019
WIYN 0.9 m Telescope, Kitt Peak National Observatory (local)	Jan 14-19, 2019
16" Telescope, Smith College McConnell Observatory (local)	Fall 2016-present

Grants

NRAO Student Observing Support Grant (Advising PI: C. Casey)	\$28,143
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PUBLICATIONS

Total refereed publications in astronomy: 2

[Link to ADS](#)

Refereed Publications

1. **Cooper, O. R.**, Casey, C. M., Zavala, J. A., Champagne, J. B., da Cunha, E., Kartaltepe, J. S., Long, A. S., Spilker, J. S., Staguhn, J. *Searching far and long I: Pilot ALMA 2mm follow-up of bright dusty galaxies as a redshift filter*. 2022 (submitted to AAS Journals), PDF
2. Katz, M. L., **Cooper, O. R.**, Coughlin, M. W., Burdge, K. B., Breivik, K., Larson, S. L. *GPU-Accelerated Periodic Source Identification in Large-Scale Surveys: Measuring P and \dot{P}* . 2021 MNRAS 503, 2, arXiv:2006.06866
3. Ashok, A., Zasowski, G. Seth, A., Hasselquist, S., Bergsten, G., **Cooper, O.**, Boardman, N., Bizyaev, D., Goytia, S. M., García-Hernández, D. A., Roman-Lopes, A. *The APOGEE Library of Infrared SSP Templates (A-LIST): High-resolution Simple Stellar Population Spectral Models in the H Band*. 2021 AJ 161, 4, arXiv:2012.15773
4. **Cooper, O.**, Keeley, A., Merenlender, A. *Curriculum gaps for adult climate literacy*. 2019 Conservation Science and Practice, e102, <https://doi.org/10.1111/csp2.102>

Technical Reports & Non-refereed Publications

Observing and Modeling Ultracompact Binaries Detectable by LISA, technical final paper published on LIGO DCC: LIGO-T1900360-v1

Dissecting the Chemodynamics of Stellar Populations in M31 with APOGEE-2, formal final report submitted to University of Utah REU

Selected Abstracts & Proceedings

Dusty needles in a haystack: 2mm survey of DSFGs in SSA22. Presentation at: UT Austin Extragalactic Seminar; 2021 April 26; Austin, TX.

Lensing Masses of 8 Planck-selected Gravitationally Lensed Sub-millimeter Galaxies. Poster session at: American Astronomical Society 235th Winter Meeting; 2020 January 5; Honolulu, HI.

Observing and Modeling Ultracompact Binaries Detectable by LISA. Presentation at: LIGO SURF Summer Symposium; 2019 August 23; Pasadena, CA.

Comparing Rotation of Low Mass Stars in Coma Berenices and IC 348. Poster session at: Five College Astronomy Department Spring Symposium; 2019 May 3; Amherst, MA.

Follow-up Transit Photometry of K2 and TESS Exoplanet Candidates. Poster session at: Smith College's Celebrating Collaborations; 2019 April 20; Northampton, MA.

Dissecting the Chemodynamics of Stellar Populations in M31 with APOGEE-2. Poster session at: American Astronomical Society 233rd Winter Meeting; 2019 January 8; Seattle, WA.

Dissecting the Motions of Stellar Populations in M31. Poster session at: NSF REU Symposium; 2018 October 28-29; Washington D.C.

Chemodynamics of Stellar Populations in M31. Poster session at: University of Utah Summer Symposium; 2018 August 2; Salt Lake City, UT.

COMPUTER SKILLS

Programs & Languages: python, Matlab, Mathematica, Unix, IRAF/pyRAF

Software: git, L^AT_EX, Microsoft Office, AstroImageJ, JSkyCalc, LoggerPro, Adobe Photoshop, DS9, Gemini DRAGONS, Aquamacs/emacs, EAZY photo-z, nway, SExtractor, CASA

SERVICE & OUTREACH

GUMMY mentor: graduate student mentor for astronomy undergraduate students at UT Austin, advising on courses and careers in astronomy

TAURUS/REU informal mentor: graduate student mentor for student in UT Austin REU program, social events coordinator for the summer, planned average one event per week for 10 weeks

Astrobites Writer: writer for collaboration of graduate students that summarize astronomy articles into bite-size pieces that the public can understand, co-chair of climate change committee

Climate Change and Human Health Outreach: created and executed outreach program in my hometown (Willits, CA) at the local hospital and school to raise awareness about how climate change affects our health, specifically in the context of recent wildfires

Climate Migration in the Northern Hilltowns: conducted interviews and compiled GIS data to support rural towns in Western MA as they apply for state Municipality Vulnerability Program grants

Maria Mitchell Women in STEM Symposium Notetaker: took notes at salon-style discussions regarding the experience of women in STEM and problem solving for the future

Light Pollution Awareness Exhibit: created and presented a slideshow of astrophotography at Smith College Concinnity Fest to raise awareness about light pollution

Star Parties: host public star parties at Smith College's observatory and use 16" telescope and eyepiece to look at and describe astronomical objects

RELEVANT WORK EXPERIENCE

Physics 117 Grader , <i>Smith College Physics Department</i>	Sept 2018-Dec 2018
Grade homework for introductory physics class	

Astronomy TA , <i>Smith College Astronomy Department</i>	Jan 2018 - May 2019
Tutor STEM and non-STEM undergraduates in astronomy courses, administer and evaluate constellation identification and telescope operation quizzes	

PROFESSIONAL MEMBERSHIPS

American Association for the Advancement of Science member	May 2020 - present
Elected Sigma Xi	May 2020 - present
American Astronomical Society member	Sept 2018 - present
American Physical Society member	June 2019 - present