CURRICULUM VITAE

Dominic Oddo

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EDUCATION

University of New Mexico, Albuquerque, NM **Aug. 2020 – present**
Pursuing a PhD in Physics w/ concentration in Astrophysics
Case Western Reserve University, Cleveland, OH **Aug. 2016 - May 2020**
Graduated with B.S. in Physics and Secondary major in Astronomy

CURRENT RESEARCH

University of New Mexico – Research Assistant (Fall 2022 – present)
Finding the occurrence rate of circumbinary planets (CBPs) with TESS

- Building methods to detect single- or multi-transit events in TESS light curves.
- Checking validity of found CBP candidates with statistical validation.

Defining a catalog of M&M eclipsing binaries with TESS

- Finding physical properties of stars in binaries from photometric/SED fitting.
- Calculating statistical properties such as circularization period, mass ratio distribution.

PAST RESEARCH EXPERIENCES

University of New Mexico – Research Assistant (Fall 2020 – Fall 2022)
Radial velocity follow-up of a multi-planet TESS Object of Interest (TOI) with gap between planets

- Most multis are dynamically packed, but this TOI is not, according to TESS observations
- CFHT SPIRou instrument awarded time for RV characterization

Characterizing small planets from TESS with CHEOPS observations

- Combined NASA TESS and ESA CHEOPS observations of five systems
- Jointly fitted transit models to light curves to obtain precise orbital and physical parameters

Case Western Reserve University – Research Assistant (Fall 2019 – Summer 2020)
Optimization of direct-imaging survey strategies for max exoplanet yield with Dr. Benjamin Monreal

- Developed completeness calculations for terrestrial planets orbiting various stellar types
- Completed time-optimization calculations for max first-observation yield

Rochester Institute of Technology – NSF REU (Summer 2018)
Earth-like exoplanet yield for space-based LUVOIR mission with Dr. Don Figer

- Calculated observing completeness for the set of nearby stars using Monte Carlo techniques
- Calculated metrics such as SNR and required exposure time to resolve targets

PUBLICATIONS

First-author publication (accepted for publication): D. Oddo*, D. Dragomir, et al. (2025). "A catalog of M&M eclipsing binaries with TESS." https://arxiv.org/pdf/2508.13941

Submitted publication: Meech, Gao, Wallack, Lopez-Morales, **Oddo**, et al. (2025). "JWST COMPASS: A NIRSpec G395H Transmission Spectrum of Radius-Valley Dweller TOI-260 b."

Publication: Essack Z., et al. (2025). "Giant Outer Transiting Exoplanet Mass (GOT 'EM) Survey. VI. Confirmation of a Long-period Giant Planet Discovered with a Single TESS Transit." https://iopscience.iop.org/article/10.3847/1538-3881/add88b/pdf

Publication : Nies, M., et al. (2024). "HD 21520 b: A warm sub-Neptune transiting a bright G dwarf." https://academic.oup.com/mnras/article/534/4/3744/7750052?login=false

First-author publication: D. Oddo*, D. Dragomir, A. Brandeker, et al. (2023). "Characterizing a set of small planets bordering the radius valley with TESS and CHEOPS observations." https://iopscience.iop.org/article/10.3847/1538-3881/acb4e3/pdf

Publication: Barragan, O., et al. (August, 2022). "The young HD 73583 (TOI-560) planetary system: Two 10-$M_{\oplus}$ mini-Neptunes transiting a 750-Myr-old, bright, and active K dwarf." https://academic.oup.com/mnras/article/514/2/1606/6548902

Publication: Monreal, B., **Oddo, D**., Rodriguez, C. (2019). "WAET: low-cost ground based telescopes for accelerated exoplanet direct imaging." *ASTRO2020 APC Whitepaper.* https://arxiv.org/abs/1907.04897

SELECTED ORAL/POSTER PRESENTATIONS

Research-contributed talk: From Transits to Trends workshop: Albuquerque, NM, Aug. 2025
"Don't FORCES It: The search for circumbinary planets with TESS"

Research-contributed talk: Binary stars in the space era: Keele, UK, July 2025
"A catalog of low-mass TESS M&M eclipsing binary orbital and physical properties"

Invited seminar speaker: Warwick University Astronomy Seminar, Warwick, UK, June, 2025.
"Characterizing low-mass M&M eclipsing binaries: A foundation for circumbinary planet detection with TESS"

Poster: Know Thy Stars II: Pasadena, CA, Feb. 2025
"Characterizing the Orbital & Physical Properties of M+M Binaries with TESS: Byproducts of a large-scale CBP search"

Research-contributed talk: Circumbinary planets
"Don't FORCES It: Toward an occurrence rate for transiting TESS CBPs"

Poster Presentation: Exoplanets V Conference: Leiden, NL, June, 2024
"Towards Transiting Tatooines: A search for circumbinary planets with TESS"

Invited outreach talk: The Albuquerque Astronomical Society: Albuquerque, NM, Feb. 2024

Invited Early Career Researcher @ EXOPAG-29: New Orleans, LA, Jan. 2024
"The Path to Uncovering the Histories of TESS Circumbinary Planets"

Invited Seminar speaker: Boston University Center for Space Physics, Boston, MA, Mar. 2023
"An exploration of the radius valley & a comparison of NASA TESS and ESA CHEOPS."

Oral Presentation: TESS Science Conference II, Virtual, Aug. 2021
"Characterizing small planet candidates from TESS with CHEOPS observations."

Poster: AAS Meeting 233, Seattle, WA, Jan. 2019
"Simulating the earth-like exoplanet yield of the NASA LUVOIR 'A' architecture direct-imaging mission."

AWARDS/OBSERVING

*****NASA FINESST Graduate Research Grant, 2023-2025***

Approved Observing Proposals

PI for CFHT-SPIRou spectropolarimeter, *Mauna Kea, HI*
2021B: ~30 hrs for "A deeper look at the architecture of multi-planet systems" (21BC06)
2022B: ~25 hrs for "Determining the masses of a dense inner planet and sub-Neptunian outer planet (22BC10+22BC97)

Co-I on CHEOPS proposal (cycles 2 & 3), "Exploring the Diversity of Small Planet Compositions", 120 orbits

PROFESSIONAL ACTIVITIES

2025 Transits to Trends Workshop: Local Organizing Committee, *Albuquerque, NM*
Participant: *chaired session, sat on panel, presented research
LOC: Contributed to workshop website, abstract booklet, designed badges, ran technical support

2022 Sagan Exoplanet Summer Workshop: Exoplanet Science in the Gaia Era, *Pasandena, CA*
Workshop detailing the effective use of Gaia data in exoplanet science.

AAS Astronomy Ambassador Program, AAS 239th Meeting, *Salt Lake City, UT (virtual)*
Workshop for early-career astronomers interested in public engagement.

TESS Planet Candidate Vetting, *Albuquerque, NM*

Examining light curves from TESS data pipeline outputs to determine outcome

Case Western Reserve University**,** *Cleveland, OH*

Women in Physics and Astronomy Club, executive member, 2018 – 2020

INVOLVEMENT AND LEADERSHIP ACTIVITIES

University of New Mexico, *Albuquerque, NM*

United Graduate Workers at UNM,

Chief Steward for Arts & Sciences 2021-2023

Director of Organizing 2024-2025

Area Steward for Arts & Science 2025-present

- Organized co-workers in card drive for labor union recognition (2021-2022)
- Organized colleagues to work towards the largest wage increase for GAs, TAs, and RAs at UNM in decades and other benefits, including as co-lead negotiator (2024)
- Organized towards contract that includes essential **International Worker Rights** article

P&A Graduate Student Association, Communications Officer 2021 – 2022

- Responsible for creating content to disseminate to fellow graduate students
- Upkeep of website, monthly newsletter, social media, and event announcements

P&A Graduate Student Association, UNM GPSA Representative 2020 – 2021

- Served as departmental representative to campus-wide Graduate and Professional Student Association Council
- Advocated for grad students to receive COVID-19 relief funding from UNM
- Supported UNM graduate student union for better pay and benefits to grad students

Case Western Reserve University, *Cleveland, OH*

Residence Life, residential assistant 2017 – 2020

- Foster development of floors of ~35 first-year students for three consecutive years
- Promote resident well-being through community-building strategies
- Organize and promote floor-specific programming to engage with Cleveland community

CWRU Feminist Collective, secretary 2018 – 2020

- Advocate for gender equity and inclusion
- Organize and promote events on campus
- Record general body meeting minutes

CWRU Women in Physics and Astronomy, co-founder 2019 – 2020

- Formed to promote and support women and gender non-conforming individuals in Physics and Astronomy departments at CWRU
- Created social support network and advocated for gender equality in these depts.
- Organized professional development workshops and women-led science talks

Varsity Track and Field, athlete, co-captain 2016 - 2020

- Provided leadership and organization as team captain during junior and senior years

National Residence Hall Honorary, Donald J. Kamalsky Chapter, member 2019

- Advanced pillars of service and recognition in residence life
- Participated in community service opportunities
- Recognized outstanding work by campus community members

External organizations

Know Your Neighbors CWRU, co-founder 2020 – 2022

- Co-founded group of Cleveland community residents and CWRU students dedicated to bridging the divide between CWRU campus community and local neighborhoods
- Developed events both virtually and in-person to bring students and residents together
- Advocated university to include local resident perspective in decision-making

Right to Health Action, Regional Organizer 2020 – 2022

- Grassroots organization of thousands of activists nationwide working to end the COVID-19 pandemic and prevent future ones from ever occurring
- Regional organizer duties include building state teams in the Southwest and providing training and support to State Captains and state teams

SKILLS

Lab skills	***Software***	***Coding Languages***
Analog + digital electronics	Mathematica	Python - Expert
Experience w/ cryogenics	Origin	Matlab - Strong
2D Hall Effect/muon decay	GitHub	Java – Competent