

ANTONIO C. RODRIGUEZ

Cahill Center for Astronomy and Astrophysics
1216 E California Blvd.
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Research Interests: White Dwarf Stars, Binary Stars, Accretion
X-ray Surveys, Time-domain Astronomy

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EDUCATION	PH.D. IN ASTROPHYSICS, CALIFORNIA INSTITUTE OF TECHNOLOGY Advisor: Shrinivas R. Kulkarni Co-Advisors: Kareem El-Badry and Thomas A. Prince	2025 (<i>expected</i>)
	M.S. IN ASTROPHYSICS, CALIFORNIA INSTITUTE OF TECHNOLOGY	2023
	B.S. IN PHYSICS, STANFORD UNIVERSITY Honors Thesis: <i>Youthful Exuberance of FU Ori Accretion Disks</i> Advisors: Lynne A. Hillenbrand and Roger W. Romani	2020
AWARDS	NATIONAL SCIENCE FOUNDATION GRADUATE RESEARCH FELLOWSHIP FORD FOUNDATION PREDOCTORAL FELLOWSHIP LSST-DA (FORMERLY LSSTC) DATA SCIENCE RESEARCH FELLOWSHIP NEUGEBAUER SCHOLAR, France A. Córdoba Research Fund ANTHONY FELLOWSHIP, California Institute of Technology FORD FOUNDATION PREDOCTORAL FELLOWSHIP (HONORABLE MENTION) JEFFREY ALAN WILLICK MEMORIAL AWARD, Stanford University Outstanding member of the senior class concentrating in astrophysics.	2022 2022 2022 2022 2020 2020 2020
AWARDED TELESCOPE TIME	PALOMAR OBSERVATORY, 5 METER HALE TELESCOPE <i>Magnetic Cataclysmic Variables: Characterization of X-ray Sources with ZTF Counterparts.</i> Additional 20+ nights as Co-I. Instruments Used: DBSP, CHIMERA, WASP, WIRC.	25 nights (PI)
	CHANDRA X-RAY OBSERVATORY <i>Probing Polars with High Resolution X-ray Spectroscopy.</i> Instruments Used: ACIS/HETG.	260 ks (PI)
	CHANDRA X-RAY OBSERVATORY <i>Flux Limits on The Nearest Black Hole: Gaia BH1.</i> Instruments Used: ACIS.	20 ks (PI)
	VERY LARGE ARRAY <i>The First Accreting White Dwarf Pulsar.</i> Additional 4 hr as Co-I (separate proposal). Observing Mode: Continuum.	6 hr (PI)
	KECK OBSERVATORY, 10 METER KECK I AND II TELESCOPES <i>ZTF Galactic Science Follow-ups.</i> Instruments Used: LRIS, ESI.	30+ nights (Co-PI)
	JAMES WEBB SPACE TELESCOPE <i>Uncovering the cold donors of AM CVn binaries.</i> PI: Kareem El-Badry	11 hours (Co-I)
	HUBBLE SPACE TELESCOPE <i>Confirming the first strongly asynchronous polar.</i> PI: Ilaria Caiazzo	9 orbits (Co-I)

FIRST AUTHOR (AND MAJOR CONTRIBUTOR) PUBLICATIONS	[1] Rodriguez, A. C. , El-Badry, K., et al., Cataclysmic Variables and AM CVn Binaries in SRG/eROSITA + Gaia: Volume Limited Samples, X-ray Luminosity Functions, and Space Densities, arXiv e-prints, arXiv:2408.16053 (2024), https://ui.adsabs.harvard.edu/abs/2024arXiv240816053R	
	[2] Galiullin, I., Rodriguez, A. C. , et al., Searching for New Cataclysmic Variables in the Chandra Source Catalog, arXiv e-prints, arXiv:2408.00078 (2024), https://ui.adsabs.harvard.edu/abs/2024arXiv240800078G	
	[3] Rodriguez, A. C. , From Active Stars to Black Holes: A Discovery Tool for Galactic X-Ray Sources, Publications of the Astronomical Society of the Pacific, 136, 054201 (2024), https://ui.adsabs.harvard.edu/abs/2024PASP..136e4201R	
	[4] Rodriguez, A. C. , Cendes, Y., et al., No X-Rays or Radio from the Nearest Black Holes and Implications for Future Searches, Publications of the Astronomical Society of the Pacific, 136, 024203 (2024), https://ui.adsabs.harvard.edu/abs/2024PASP..136b4203R	
	[5] Galiullin, I., Rodriguez, A. C. , et al., A joint SRG/eROSITA + ZTF search: Discovery of a 97-min period eclipsing cataclysmic variable with evidence of a brown dwarf secondary, Monthly Notices of the Royal Astronomical Society, 528, 676 (2024), https://ui.adsabs.harvard.edu/abs/2024MNRAS.528..676G	
	[6] Rodriguez, A. C. , Galiullin, I., et al., SRGeJ045359.9+622444: A 55 Minute Period Eclipsing AM Canum Venaticorum Star Discovered from a Joint SRG/eROSITA + ZTF Search, The Astrophysical Journal, 954, 63 (2023), https://ui.adsabs.harvard.edu/abs/2023ApJ...954...63R	
	[7] Rodriguez, A. C. , Kulkarni, S. R., et al., Discovery of Two Polars from a Crossmatch of ZTF and the SRG/eFEDS X-Ray Catalog, The Astrophysical Journal, 945, 141 (2023), https://ui.adsabs.harvard.edu/abs/2023ApJ...945..141R	
	[8] Rodriguez, A. C. , Yao, Y., et al., The Search for a Counterpart to NuSTAR J053449+2126.0, Research Notes of the American Astronomical Society, 6, 50 (2022), https://ui.adsabs.harvard.edu/abs/2022RNAAS...6...50R	
	[9] Rodriguez, A. C. , Mróz, P., et al., Microlensing Events in the Galactic Plane Using the Zwicky Transient Facility, The Astrophysical Journal, 927, 150 (2022), https://ui.adsabs.harvard.edu/abs/2022ApJ...927..150R	
	[10] Rodriguez, A. C. , Hillenbrand, L. A., Application of a Steady-state Accretion Disk Model to Spectrophotometry and High-resolution Spectra of Two Recent FU Ori Outbursts, The Astrophysical Journal, 927, 144 (2022), https://ui.adsabs.harvard.edu/abs/2022ApJ...927..144R	
STUDENT	Domani Sharkey (Caltech SURF)	2024
MENTORING	Project: X-ray Active Stars with SRG/eROSITA (co-advised w/ Kareem El-Badry)	
	Ruocheng Zhai (Caltech SURF from Tsinghua Univ; now PhD student at Penn State)	2023
	Project: Microlensing with ZTF II (co-advised w/ Shri Kulkarni)	
PRESENTATIONS AND TALKS	High Energy Astrophysics Seminar	2024

Center for Astrophysics Harvard & Smithsonian. Cambridge, MA.	
Astronomy Department Seminar	2024
Columbia University. New York, NY.	
Data Group Meeting	2024
Flatiron Institute Center for Computational Astrophysics (CCA). New York, NY.	
Astronomy Department Seminar	2024
Institute of Science and Technology of Austria (ISTA). Vienna, Austria	
Celebrating the History of Warwick Astronomy and Legacy of Tom Marsh, Contributed Talk	2024
University of Warwick. Coventry, UK	
STARS Group Meeting	2024
Institute of Astronomy, University of Cambridge. Cambridge, UK.	
XMM-Newton Science Meeting: From White Dwarfs to Neutron Stars, Contributed Talk	2024
ESA Science Center. Madrid, Spain	
Embarrassing Binaries: Symbiotic Stars, Cataclysmic Variables, and More, Contributed Talk	2024
Charles University. Prague, Czechia	
High Energy Astrophysics Seminar	2024
Kyoto University. Kyoto, Japan.	
University of Hertfordshire Astronomy Colloquium	2024
University of Hertfordshire. Hertfordshire, UK.	
IPAC Science Seminar	2024
IPAC/Caltech. Pasadena, CA.	
ZTF Team Meeting	2023
Caltech. Pasadena, CA.	
The Golden Age of Cataclysmic Variables VI.	2023
La Torre Hotel. Mondello, Palermo, Italy.	
AM CVn5: 5th International Workshop on AM CVn Binaries	2023
Armagh Observatory & Planetarium. Armagh, Northern Ireland	
Chandra 24th Annual Workshop	2023
MIT. Cambridge, Massachusetts.	
Palomar Science Meeting – 75 Years of Palomar	2023
Caltech. Pasadena, CA.	
Caltech Tea Talk	2023
Caltech. Pasadena, CA.	
KITP Workshop Talk: White Dwarfs as Probes of the Evolution of Planets, Stars, the Milky Way and the Expanding Universe	2022
University of California, Santa Barbara. Santa Barbara, CA	
Chandra Lunch Seminar	2022
MIT. Cambridge, Massachusetts.	
Theoretical Astrophysics Lunch Seminar	2022
Cornell University. Ithaca, NY.	
COSMOS Lunch Talk (fully in Spanish)	2022
Universidad de Guanajuato. Guanajuato, Mexico.	
ZTF Team Meeting	2022
Northwestern University. Evanston, IL	
Keck Science Meeting	2022
Caltech. Pasadena, CA.	
25th International Microlensing Meeting	2022
Observatoire de Paris. Paris, France.	
FLASH Lunch Talk	2022
University of California, Santa Cruz. Santa Cruz, CA	
American Astronomical Society Meeting	2022

	Pasadena, CA.	
	High Energy Astrophysics Colloquium	2022
	Max Plack Institute for Astrophysics (MPA). Garching, Germany	
	Astrophysics Lunch Seminar	2022
	Radboud University. Nijmegen, Netherlands	
	ZTF Stellar Group Conference	2022
	University of Warwick. Coventry, UK	
	ZTF Team Meeting	2022
	IN2P3. Paris, France	
	American Astronomical Society Meeting	2020
	Honolulu, Hawaii	
TEACHING AND TUTORING	PHYSICS AND ASTROPHYSICS TEACHING ASSISTANT	2021-2022
	Caltech Division of Physics, Mathematics, and Astronomy.	
	Physics 1A: Introductory Physics (Fall 2021).	
	Astronomy 102: Physics of the Interstellar Medium (Winter 2022).	
	Astronomy 3: Discovering the Universe (Spring 2023).	
	STANFORD CENTER FOR TEACHING AND LEARNING MATH AND PHYSICS TUTOR	2018-2020
	LEAD MATH AND PHYSICS TUTOR	2019-2020
	Stanford Office of the Vice Provost for Teaching and Learning	
OUTREACH	CALTECH ASTRONOMY OUTREACH	2020-
	Speaker at public talks including stargazing nights and <i>Astronomy on Tap</i> . Host for <i>Astronomía en el Bar</i> events held completely in Spanish.	
	STANFORD ASTRONOMICAL SOCIETY, CO-PRESIDENT	2017-2020
	MEMBER	2016-2020
	Participated in and led quarterly stargazing and informational sessions for the public. Led regular outreach events and directed expansion of events to underserved Bay Area elementary and middle schools. Helped manage a \$10,000+ budget for telescopes, astrophotography, outreach activities, external collaborations, emergency fund, etc.	
PROFESSIONAL MEMBERSHIP	Caltech Astronomy Graduate Admissions Committee, Student Representative	2022-2023
	American Astronomical Society, Graduate Member	2020-
	American Astronomical Society, Undergraduate Member	2019-2020
	Stanford Physics Department Committee on Undergraduate Studies	2019-2020
TECHNICAL SKILLS	Python (Numpy, Scipy, Jupyter Notebook), Mathematica, Java, C++, R, L ^A T _E X, Git, Unix/Linux, IRAF/PyRAF, SExtractor, TOPCAT, SAO DS9.	
	Languages: English (Native), Spanish (Native), French (Conversational).	