

## Richard S. Camuccio

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CONTACT	Center for Gravitational Wave Astronomy University of Texas Rio Grande Valley One West University Boulevard Brownsville, Texas 78520, USA	Email: <a href="mailto:richard.camuccio01@utrgv.edu">richard.camuccio01@utrgv.edu</a> Web: <a href="http://www.rcamuccio.com">www.rcamuccio.com</a> ORCID: <a href="https://orcid.org/0000-0002-2510-3626">0000-0002-2510-3626</a>
EDUCATION	<b>University of Texas Rio Grande Valley</b> , Brownsville, TX Ph.D., Physics, Jan 2022 – present Advisor: Mario C. Díaz Thesis:  <b>University of Texas Rio Grande Valley</b> , Brownsville, TX M.S., Physics, Aug 2016 – May 2020 Advisor: Mario C. Díaz Thesis: <i>Searching for Optical Counterparts to Gravitational Waves</i>  <b>Franklin &amp; Marshall College</b> , Lancaster, PA B.A., Astrophysics, Aug 2012 – May 2016 Advisor: Amy L. Lytle Thesis: <i>Controlling Second Harmonic Generation Using Counterpropagating Light</i>	
RESEARCH EXPERIENCE	<b>Graduate Research Assistant</b> Transient Optical Robotic Observatory of the South Collaboration Center for Gravitational Wave Astronomy University of Texas Rio Grande Valley	Jan 2022 – present
	<b>Graduate Research Assistant</b> Time Domain Astronomy Group Center for Gravitational Wave Astronomy University of Texas Rio Grande Valley	Nov 2016 – Jul 2020
	<b>Assistant Director</b> Dr. Cristina V. Torres Memorial Astronomical Observatory Time Domain Astronomy Group Center for Gravitational Wave Astronomy University of Texas Rio Grande Valley	Nov 2016 – Jul 2020
	<b>Team Leader</b> Arecibo Remote Command Center Center for Advanced Radio Astronomy University of Texas Rio Grande Valley	2016 – 2017
	<b>Undergraduate Research Assistant</b> Lytle/Gagnon Research Group Department of Physics and Astronomy Franklin & Marshall College	2015 – 2016
	<b>Team Leader</b> Arecibo Remote Command Center Department of Physics and Astronomy Franklin & Marshall College	2015 – 2016

**Visiting Observer**

Mar 2013, May 2015

National Undergraduate Research Observatory  
Department of Physics and Astronomy  
Northern Arizona University

**F&M Summer Scholar**

May – July 2013

Arecibo Remote Command Center  
Department of Physics and Astronomy  
Franklin & Marshall College

**Observatory Assistant**

Jan 2013 – May 2016

Joseph R. Grundy Observatory  
Department of Physics and Astronomy  
Franklin & Marshall College

REFEREED  
PUBLICATIONS

K. Wardega, A. Zdrożny, M. Beroiz, R. Camuccio, and M. C. Díaz. *Detecting Optical Transients Using Artificial Neural Networks and Reference Images from Different Surveys*, Monthly Notices of the Royal Astronomical Society, Volume 507, Issue 2 (2021)

[\[ADS\]](#) [\[arXiv\]](#) [\[DOI\]](#) [\[SIMBAD\]](#)

Md. F. Alam et al. *The NANOGrav 12.5-year Data Set: Wideband Timing of 47 Millisecond Pulsars*, The Astrophysical Journal Supplement Series, Volume 252, Issue 1, ID 5 (2021)

[\[ADS\]](#) [\[arXiv\]](#) [\[DOI\]](#) [\[SIMBAD\]](#)

Md. F. Alam et al. *The NANOGrav 12.5-year Data Set: Observations and Narrowband Timing of 47 Millisecond Pulsars*, The Astrophysical Journal Supplement Series, Volume 252, Issue 1, ID 4 (2021)

[\[ADS\]](#) [\[arXiv\]](#) [\[DOI\]](#) [\[SIMBAD\]](#)

R. Artola et al. *TOROS Optical Follow-Up of the Advanced LIGO-Virgo O2 Second Observational Campaign*, Monthly Notices of the Royal Astronomical Society, Volume 493, Issue 2 (2020)

[\[ADS\]](#) [\[arXiv\]](#) [\[DOI\]](#) [\[SIMBAD\]](#)

E. Parent et al. *The Implementation of a Fast-Folding Pipeline for Long-Period Pulsar Searching in the PALFA Survey*, The Astrophysical Journal, Volume 861, Issue 1, ID 44 (2018)

[\[ADS\]](#) [\[arXiv\]](#) [\[DOI\]](#) [\[SIMBAD\]](#)

K. Stovall et al. *PALFA Discovery of a Highly Relativistic Double Neutron Star Binary*, The Astrophysical Journal Letters, Volume 854, Issue 2, ID L22 (2018)

[\[ADS\]](#) [\[arXiv\]](#) [\[DOI\]](#) [\[SIMBAD\]](#)

M. C. Díaz et al. *Observations of the First Electromagnetic Counterpart to a Gravitational Wave Source by the TOROS Collaboration*, The Astrophysical Journal Letters, Volume 848, Issue 2, ID L29 (2017)

[\[ADS\]](#) [\[arXiv\]](#) [\[DOI\]](#) [\[SIMBAD\]](#) [\[VizieR\]](#)

B. P. Abbott et al. *Multi-messenger Observations of a Binary Neutron Star Merger*, Astrophysical Journal Letters, Volume 848, Issue 2, ID L12 (2017)

[\[ADS\]](#) [\[arXiv\]](#) [\[DOI\]](#) [\[SIMBAD\]](#)

A. L. Lytle, R. Camuccio, R. Myer, A. Penfield, and E. Gagnon, *Influence of Counterpropagating Light on Phase Matching in Second Harmonic Generation*, Journal of the Optical Society of America B, Volume 33, Issue 7 (2016)

[\[ADS\]](#) [\[DOI\]](#)

	<p>B. Christy, R. Anella, A. Lommen, L. S. Finn, R. Camuccio, and E. Handzo, <i>Optimization of NANOGrav’s Time Allocation for Maximum Sensitivity to Single Sources</i>, The Astrophysical Journal, Volume 794, Issue 2, ID 163 (2014)  <a href="#">[ADS]</a> <a href="#">[arXiv]</a> <a href="#">[DOI]</a> <a href="#">[SIMBAD]</a></p>
UNREFEREED PUBLICATIONS	<p>M. Díaz, L. Macri, J. L. Nilo Castellon, B. Sanchez, C. Mendes, C. Colazo, M. Schneitter, C. Girardini, D. Garcia Lambas, M. Beroiz, A. Zadrozny, R. Camuccio, M. Castillo, and J. Garcia, <i>LIGO/Virgo G298048: TOROS photometry of SSS17a</i>, Gamma-ray Coordinates Network Circular, 21895, September 2017  <a href="#">[ADS]</a> <a href="#">[DOI]</a></p> <p>M. Díaz, D. Garcia Lambas, L. Macri, J. L. Nilo Castellon, O. Lopez-Cruz, R. Camuccio, M. Valencia, V. Perez, and W. Rattray, <i>LIGO/Virgo S200224ca: No counterpart candidates in TOROS observations</i>, Gamma-ray Coordinates Network Circular, 27293, March 2020  <a href="#">[ADS]</a> <a href="#">[DOI]</a></p> <p>M. Díaz, D. Garcia Lambas, L. Macri, J. L. Nilo Castellon, O. Lopez-Cruz, R. Camuccio, E. Caputa, and W. Mendoza, <i>LIGO/Virgo S190814bv: No counterpart candidates in TOROS observations</i>, Gamma-ray Coordinates Network Circular, 25349, August 2019  <a href="#">[ADS]</a> <a href="#">[DOI]</a></p>
SOFTWARE & ALGORITHMS	<p><b>Hades</b> — a collection of Python functions used for astronomical data analysis. Pipelines for data reduction, time series photometry, and difference image analysis.  <a href="https://github.com/rcamuccio/Hades">https://github.com/rcamuccio/Hades</a></p> <p><b>CCD Analysis Pipeline (CAP)</b> — a Python script for measuring the properties of a CCD camera. Measures linearity, gain, and readout noise from a series of astronomical FITS files.  <a href="https://github.com/rcamuccio/CAP">https://github.com/rcamuccio/CAP</a></p> <p><b>Zeus Weather System (ZWS)</b> — a collection of Python functions used for the weather system of the Cristina Torres Memorial Observatory. Reports current conditions, forecasts, solar conditions, and astrophysical events.  <a href="https://github.com/rcamuccio/Zeus">https://github.com/rcamuccio/Zeus</a></p>
CONFERENCES & PROCEEDINGS	<p>R. J. Oelkers, L. Schmidt, E. Cook, R. Camuccio, M. Castillo, A. Reyes, L. Augustine, H. Rodriguez, M. Schneiter, D. DePoy, M. Diaz, D. Garcia Lambas, L. Macri, J. Marshall, <i>An Overview of the Transient Optical Robotic Observatory of the South (TOROS)</i>, Paper 13094-218, Ground-Based and Airborne Telescopes X, SPIE Astronomical Telescopes + Instrumentation, Yokohama, Japan, June 2024  <a href="#">[DOI]</a></p> <p>R. Camuccio, M. Castillo, M. C. Díaz, D. Garcia Lambas, L. Macri, R. Oelkers, A. Reyes, H. Rodriguez, M. Schneiter, <i>The Transient Optical Robotic Observatory of the South</i>, Exploring Extreme Matter and Spacetimes with Gravitational Waves, Nicholas and Lee Begovich Center for Gravitational-Wave Physics and Astronomy, Fullerton, CA, September 2022</p> <p>R. Camuccio, M. Castillo, M. C. Díaz, D. Garcia Lambas, L. Macri, R. Oelkers, A. Reyes, H. Rodriguez, M. Schneiter, <i>The TOROS Project: A Status Report</i>, Abstract ID S17.00064, April Meeting of the American Physical Society, New York, NY, April 2022  <a href="#">[DOI]</a></p> <p>M. Beroiz, R. Camuccio, L. Capistran, M. Castillo, V. De Los Santos, M. C. Díaz, A. Hinojosa Lee, M. Jette, A. Martinez, B. Martinez, W. Mendoza, V. Perez, W. Rattray, A. Reyes, E. Sanchez, M.</p>

Valencia, K. Webb, *Astronomy at the Service of an American Hispanic Community*, Communicating Astronomy with the Public (CAP) Virtual Conference, International Astronomical Union, May 2021  
[\[DOI\]](#)

M. Beroiz, R. Camuccio, M. Castillo, M. Díaz, M. Dominguez, M. Lares, B. Sanchez, A. Zdrożny, *Gravitational-Wave Optical Counterpart Detection Methods for the TOROS Campaign During LVC O2 Observation Run*, Abstract ID Q16.007, April Meeting of the American Physical Society, Denver, CO, April 2019  
[\[ADS\]](#)

M. Beroiz, M. Díaz, A. Zdrożny, B. Sanchez, R. Camuccio, M. Castillo, A. Fonrouge, *TOROS Optical Follow-Up During the LVC O2 Observational Campaign*, Joint Space-Science Institute Gravitational Wave Physics and Astronomy Workshop, College Park, MD, December 2018

A. Zdrożny, R. Camuccio, M. Díaz, M. Beroiz, *Telescopes and Optical Data Analysis for O3 and Beyond*, Joint Space-Science Institute Gravitational Wave Physics and Astronomy Workshop, College Park, MD, December 2018

M. Díaz et al. *The Center of Gravitational Wave Astronomy and the Era of Multimessenger Astronomy*, Gravitational Waves Summer School, École de Physique des Houches, Les Houches, France, July 2018

L. Macri, M. C. Díaz, D. Garcia Lambas, and the TOROS Collaboration, *Observations of the First Electromagnetic Counterpart to a Gravitational Wave Source by the TOROS Collaboration*, IAUS 338: Gravitational Wave Astrophysics: Early Results from GW Searches and Electromagnetic Counterparts, Baton Rouge, LA, October 2017  
[\[DOI\]](#)

R. Camuccio, M. Castillo, J. Garcia, P. Lara, M. C. Díaz, and M. Beroiz, *TOROS Follow-Up Observations During O2 LIGO Observational Run*, The Amazing Life of Stars, Cefalù, Italy, September 2017

R. Camuccio, R. Myer, A. Penfield, E. Gagnon, and A. L. Lytle, *All-Optical Quasi-Phase Matching of Frequency Doubling Using Counterpropagating Light*, Abstract ID G1.127, March Meeting of the American Physical Society, Baltimore, MD, March 2016  
[\[ADS\]](#)

A. L. Lytle, E. Gagnon, and R. Camuccio, *Controlling Second Harmonic Generation with Counterpropagating Light*, OSA Frontiers in Optics/DLS Laser Science, Paper JW2A.42, San Jose, CA, October 2015  
[\[DOI\]](#)

F. Crawford et al. *The Arecibo Remote Command Center at Franklin and Marshall College*, Astronomical Society Meeting, 225, 346.03, January 2015  
[\[ADS\]](#)

## TEACHING & MENTORSHIP

### Graduate Mentor

2024

A. Thoms, *Multi-Messenger Astronomy: Optical Follow-Up of a Short Gamma-Ray Burst*  
 K. Perez, *Gamma Ray Burst Optical Follow-Ups*  
 Research Experience for Undergraduates  
 University of Texas Rio Grande Valley

### Graduate Mentor

2023

B. Schumont, *Optical Follow-up of Gravitational Wave Triggers*

	Research Experience for Undergraduates University of Texas Rio Grande Valley	
	<b>Graduate Teaching Assistant</b> Physics of Sound and Music Department of Physics and Astronomy, Texas Tech University	2021
	<b>Graduate Teaching Assistant</b> Stellar Astronomy Department of Physics and Astronomy, Texas Tech University	2020
	<b>Graduate Mentor</b> E. Caputa, <i>Exoplanet Transit Detection and Analysis</i> Research Experience for Undergraduates University of Texas Rio Grande Valley	2019
	<b>Graduate Mentor</b> S. Colom, <i>Characterization of Exoplanets from Transit Light Curves</i> Research Experience for Undergraduates University of Texas Rio Grande Valley	2018
	<b>Graduate Mentor</b> L. Duran, <i>Photometric Studies of the Asteroid 511 Davida</i> B. Gomez, <i>Detection of a Trans-Neptunian Object: Haumea</i> Research Experience for Undergraduates University of Texas Rio Grande Valley	2017
	<b>Graduate Teaching Assistant</b> Introduction to Astronomy II Department of Physics and Astronomy, University of Texas Rio Grande Valley	2016
	<b>Head Tutor</b> Physics and Astronomy Quantitative and Science Center, Franklin & Marshall College	2016
	<b>Tutor</b> Introduction to Physics I Quantitative and Science Center, Franklin & Marshall College	2015
	<b>Lab Teaching Assistant</b> Introduction to Physics II Department of Physics and Astronomy, Franklin & Marshall College	2015 – 2016
	<b>Class Preceptor</b> First-Year Seminar <i>Quarks to Quasars</i> Department of Physics and Astronomy, Franklin & Marshall College	2015
	<b>Student Instructor</b> Intermediate and Advanced Physics J. P. McCaskey High School Mid-Atlantic Relativistic Initiative in Education, Franklin & Marshall College	2013
LECTURES & OUTREACH	[37] <i>Echoes of Theia: An Introduction to Lunar Science</i> To the Moon, Mars, and Beyond	20 Jul 2024

Brownsville Public Library - Southmost Branch, Brownsville, TX		
[36] <i>An Introduction to Archaeoastronomy</i>		1 Jul 2024
STARS Monthly Meetup		
Brownsville Public Library - Southmost Branch, Brownsville, TX		
[35] <i>Cosmic Explosions: An Introduction to Transient Astronomy</i>		11 Jun 2024
Invited Talk		
Brownsville Raul Yzaguirre STEM Scholars Academy, Brownsville, TX		
[34] <i>Exploring Space with GRACE</i>		23 May 2024
Invited Talk		
St. Mary's Catholic School, Brownsville, TX		
[33] <i>Cosmic Explosions: An Introduction to Transient Astronomy</i>		17 May 2024
Invited Talk		
Liberty Memorial Middle School, Los Fresnos, TX		
[32] <i>A Planetary Nursery</i>		14 May 2024
Invited Talk		
Episcopal Day School, Brownsville, TX		
[31] <i>How to Catch a Falling Star, Pt. 2</i>		2 May 2024
Invited Talk		
South Texas ISD Science Academy, Mercedes, TX		
[30] <i>How to Catch a Falling Star, Pt. 1</i>		2 Apr 2024
STARS on Tap		
Shenanigan's Irish Pub & Grill, Brownsville, TX		
[29] <i>Path of Totality: The Solar Eclipse of 2024</i>		22 Mar 2024
STARS Astronomy at the Park		
Cristina Torres Memorial Observatory, Brownsville, TX		
[28] <i>A Search for Compact Companions and Optical Transients Using TOROS</i>		2 Feb 2024
Physics & Astronomy Department Colloquium		
University of Texas Rio Grande Valley, Brownsville, TX		
[27] <i>Ring of Fire: The Annular Eclipse of 2023</i>		14 Oct 2023
Annular Solar Eclipse		
Southmost Public Library		
[26] <i>Guest Speakers Panel Q&amp;A</i>		6 Sep 2023
NASA Downlink Brownsville to International Space Station		
James Pace Early College High School, Brownsville, TX		
[25] <i>Night Sky Tour and Astrophysics Discussion</i>		2 Apr 2023
Evening with the Stars		
McAllen Main Library, McAllen, TX		
[24] <i>The Recently Active Sun</i>		24 Mar 2023
STARS Astronomy at the Park		
Cristina Torres Memorial Observatory, Brownsville, TX		

[23] <i>Exploring the Cosmos: Space Weather and Night Sky Updates</i> STARS Cosmic Conversations Búho, Brownsville, TX	14 Mar 2023
[22] <i>The BOAT (Brightest of All Time), GRB 221009A</i> STARS Astronomy at the Park Cristina Torres Memorial Observatory, Brownsville, TX	21 Oct 2022
[21] <i>How to Find an Exoplanet: Observing the Waterworld Gliese 1214 b</i> ASTRONight Texas Tech University, Lubbock, TX	21 May 2021
[20] <i>March Equinox 2021</i> STARS Vernal Equinox 2021 Virtual	20 Mar 2021
[19] <i>Observer Narration</i> SPS Zone 13 Virtual Astronomy Night Virtual	5 Feb 2021
[18] <i>The Winter Solstice Sky and Great Conjunction of 2020</i> ASTRONight Texas Tech University, Lubbock, TX	21 Dec 2020
[17] <i>The Late October 2020 Sky</i> ASTRONight Texas Tech University, Lubbock, TX	23 Oct 2020
[16] <i>An Astronomical Journey (of the Night Sky)</i> STARS Gateway to the Cosmos Virtual	26 Sep 2020
[15] <i>Brownsville 2030: Space City</i> Crossroads Festival Science Forum Brownsville, TX	26 Feb 2020
[14] <i>The Black Hole Mass Gap</i> Time Domain Astronomy Group Astrophysics Seminar University of Texas Rio Grande Valley, Brownsville, TX	21 Feb 2020
[13] <i>The Expanded Universe Chronology</i> STARS on Tap 2: The Physics of Star Wars Las Ramblas at Market Square, Brownsville, TX	4 Feb 2020
[12] <i>Solutions to the Fermi Paradox and Quantifying Extraterrestrial Civilizations</i> STARS on Tap Las Ramblas at Market Square, Brownsville, TX	5 Nov 2019
[11] <i>Stargazing and Telescope Observations</i> South Texas Astronomical Society Laguna Atascosa National Wildlife Refuge, Los Fresnos, TX	31 Aug 2019
[10] <i>Astronomy Night</i> South Texas Astronomical Society	3 May 2019

Liberty Memorial Middle School, Los Fresnos, TX

[9] *Big Bang Theory* 6 Feb 2019  
11th and 12th Grade Astronomy  
Los Fresnos High School, Los Fresnos, TX

[8] *Introduction to Cosmology* 30 Jan 2019  
11th and 12th Grade Astronomy  
Los Fresnos High School, Los Fresnos, TX

[7] *Astrophysics at UTRGV* 26 Jan 2019  
Building Astronomy in Texas Symposium  
University of Texas at Dallas, Richardson, TX

[6] *Super Blood Wolf Moon Viewing* 20 Jan 2019  
South Texas Astronomical Society  
Mittie A. Pullam Elementary School, Brownsville, TX

[5] *Modern Astronomical Imaging* 25 Jun 2018  
Time Domain Astronomy Group Teacher Workshop  
Cristina Torres Memorial Observatory, Brownsville, TX

[4] *Nuclear Physics* 31 Jan 2018  
Time Domain Astronomy Group Astrophysics Seminar  
University of Texas Rio Grande Valley, Brownsville, TX

[3] *Introduction to CGWA and the Era of Multi-Messenger Astronomy* 16 Nov 2017  
Brownsville Leadership Class XXXIII  
University of Texas Rio Grande Valley, Brownsville, TX

[2] *Grundy 2.0: The Past and Future of F&M's Observatory* 25 Apr 2015  
35th Annual Central Pennsylvania Consortium Astronomer's Meeting  
Dickinson College, Carlisle, PA

[1] *Astronomy at F&M: Science Projects at Franklin & Marshall College* 4 Feb 2015  
Astronomy Enthusiasts of Lancaster Country General Meeting  
Lititz Public Library, Lititz, PA

## SCHOOLS & WORKSHOPS

**N3AS Summer School on Multi-Messenger Astrophysics** 2022  
Network for Neutrinos, Nuclear Astrophysics, and Symmetries  
University of California, Santa Cruz  
Santa Cruz, CA

**Quarks to Cosmos with AI** 2021  
NSF AI Planning Institute for Data-Driven Discovery in Physics  
Carnegie Mellon University  
Virtual

**Gravitational Waves Summer School** 2018  
École de Physique des Houches  
Les Houches, France

**Open Science Grid User School** 2017  
University of Wisconsin-Madison



	Madison, WI	
	<b>Team Leader Workshop</b> Arecibo Remote Command Center, Franklin & Marshall College Lancaster, PA	2017
	<b>Team Leader Workshop</b> Arecibo Remote Command Center, University of Texas Rio Grande Valley Brownsville, TX	2016
	<b>NANOGrav Collaboration Meeting</b> National Radio Astronomy Observatory Green Bank, WV	2013
LEADERSHIP & SERVICE	<b>Organizer and Lecturer</b> Observer Workshop (NSF PAARE) Cristina Torres Memorial Observatory, Brownsville, TX	Jun 2025
	<b>Organizer and Lecturer</b> Observer Workshop (NSF PAARE) Cristina Torres Memorial Observatory, Brownsville, TX	May 2024
	<b>Founder and Editor-in-Chief</b> <i>FarFarOut!</i> Science Magazine Brownsville, TX	2022 – 2024
	<b>Chief Scientist</b> South Texas Astronomical Society Brownsville, TX	Jan 2021 – Nov 2024
	<b>Board Member</b> South Texas Astronomical Society Brownsville, TX	Mar 2020 – Nov 2024
	<b>Co-Chair</b> 9th Annual Texas Astronomy Undergraduate Research Symposium University of Texas Rio Grande Valley, Brownsville, TX	Oct 2019
	<b>LIGO Exhibitor</b> American Association for the Advancement of Science Annual Meeting Austin, TX	Feb 2018
	<b>Member</b> Astronomy Enthusiasts of Lancaster County (AELC) Lititz, PA	2015 – 2016
	<b>Founder and President</b> F&M Builders (STEM Club and Student Maker Space) Franklin & Marshall College, Lancaster, PA	2015 – 2016
	<b>Chancellor</b> Bonchek College House Franklin & Marshall College, Lancaster, PA	2014 – 2015

	<b>President</b> Physics and Astronomy Club Franklin & Marshall College, Lancaster, PA	2013 – 2014
	<b>Student Governor</b> Souderton Class of 2012 Indian Crest Junior High School, Telford, PA	2008 – 2009
EMPLOYMENT	<b>Graduate Assistant</b> TTU Skyview Observatory Texas Tech University, Lubbock, TX	2021
	<b>Hot Foods Associate</b> ShopRite Supermarkets, Hatfield, PA	2016
	<b>Physics Lab Technician</b> Department of Physics and Astronomy Franklin & Marshall College, Lancaster, PA	2014 – 2016
	<b>Sales Associate</b> Ashley Furniture Homestores, Quakertown, PA	2013 – 2016
	<b>Resident Assistant</b> Bonchek College House Franklin & Marshall College, Lancaster, PA	2013 – 2014
	<b>Librarian Assistant</b> Indian Valley Public Library, Telford, PA	2009 – 2012
RESEARCH FOCUS	Observational astronomy, telescope and CCD optics, radio observations  Optical transients and GW counterparts  Relative and differential photometry	
TECHNICAL SKILLS	Bash, C, CSS, Git, HTCondor, HTML, Java, Javascript, LabVIEW, L <sup>A</sup> T <sub>E</sub> X, Mathematica, MATLAB, Python  IRAF, SAOImage DS9, AstroImageJ, MaxIM DL, CCDSoft, INDI/Ekos/KStars	
GRANTS	<b>Leser Grant</b> C. Williamson and R. Camuccio, <i>Grant Proposal for Grundy Digital Camera</i> Committee on Grants, Franklin & Marshall College	2016
HONORS	<b>Joseph R. Holzinger Award</b> Department of Physics and Astronomy, Franklin & Marshall College	2016
LANGUAGE	English (native) German (limited working proficiency) Italian (elementary proficiency)	