

Philip S. Cowperthwaite

CONTACT INFORMATION	Philip S. Cowperthwaite Department of Astronomy Harvard University Cambridge, MA 02138	<i>Office:</i> +1-617-495-4141 <i>Mobile:</i> +1-301-788-3369 <i>E-mail:</i> pcowpert@cfa.harvard.edu <i>URL:</i> www.pscastro.com
CITIZENSHIP	USA	
RESEARCH INTERESTS	Electromagnetic counterparts to gravitational wave events. Contamination in optical transient surveys. Optical survey design and optimization.	
EDUCATION	Harvard University , Cambridge, Massachusetts USA M.S., Astronomy, Spring 2015 Ph.D., Astronomy, Expected Spring 2018 The University of Maryland at College Park , College Park, Maryland USA B.S., Summa Cum Laude, Astronomy with High Honors, Spring 2013 B.S., Summa Cum Laude, Physics, Spring 2013 <ul style="list-style-type: none">• Minor in Mathematics	
AWARDS	Harvard University <ul style="list-style-type: none">• Merit Fellowship 2017–2018• John Parker Bequest Grant 2017–2018• John P. and Carol J. Merrill Graduate Fellow, 2014–15 National Science Foundation <ul style="list-style-type: none">• Graduate Research Fellowship, 2013–18 (Funded: 2013–2016)• Research Experience for Undergraduates Summer Fellowship, 2012 University of Maryland, College Park <ul style="list-style-type: none">• University Medal Finalist, 2013• J.R. Dorfman Prize for Outstanding Undergraduate Research, 2013 Center for Research and Exploration in Space Science and Technology <ul style="list-style-type: none">• Summer Research Fellowship, 2011 The State of Maryland <ul style="list-style-type: none">• Howard P. Rawlings Grant, 2010–2012• Maryland Delegates Grant, 2010–12	
PROFESSIONAL EXPERIENCE	ComSciCon – Local Organizing Committee 2017 Astrophysical Journal Letters – Referee American Physical Society – Member American Astronomical Society – Junior Member	
RESEARCH EXPERIENCE	NSF Graduate Research Fellow , Harvard University <i>Optical Follow-Up of Gravitational Wave Events</i> <ul style="list-style-type: none">• Advisor: Prof. Edo Berger	Fall 2013 to Present

	<p>REU Summer Research Internship, Smithsonian Astrophysical Observatory</p> <p><i>Infrared Spectroscopy of Blazars</i> Summer 2012</p> <ul style="list-style-type: none"> • Advisors: Drs. Howard A. Smith and Raffaele D’Abrusco
	<p>Undergraduate Research Assistant, The University of Maryland, College Park</p> <p><i>Numerical Simulations of Accretion Flows</i> Fall 2012 to Summer 2013</p> <ul style="list-style-type: none"> • Advisor: Prof. Christopher S. Reynolds • Senior Thesis, Awarded High Honors <p><i>X-Ray Spectroscopy of Active Galactic Nuclei</i> Fall 2010 to Spring 2012</p> <ul style="list-style-type: none"> • Advisor: Prof. Christopher S. Reynolds • Joint Space Science Institute Undergraduate Research Scholar <p><i>Visualizations of Black Hole Accretion Flows</i> Spring 2010 to Fall 2010</p> <ul style="list-style-type: none"> • Advisor: Prof. Christopher S. Reynolds
	<p>CRESST Summer Research Internship, NASA/Goddard Space Flight Center</p> <p><i>Visualizations of Merging Black Hole Binaries</i> Summer 2011</p> <ul style="list-style-type: none"> • Advisors: Drs. John Baker and Bruno Giacomazzo
MENTORING EXPERIENCE	<p>Harvard University, Cambridge, Massachusetts USA</p> <p><i>Research Advisor for Undergraduates</i></p> <ul style="list-style-type: none"> • Mahlet Shiferaw – Galaxy Catalogs for GW/EM Follow-Up – Summer 2017 • Samuel Liu – Data Science Techniques for Light Curve Analysis – Summer 2016
TEACHING EXPERIENCE	<p>Harvard University, Cambridge, Massachusetts USA</p> <p><i>Graduate Teaching Fellow</i></p> <ul style="list-style-type: none"> • Astronomy 16 – Stellar and Planetary Astronomy – Spring 2016 • Astronomy 200 – Radiative Processes – Spring 2014 <ul style="list-style-type: none"> • Certificate of Teaching Excellence – Bok Center for Teaching <p>University of Maryland College Park, College Park, Maryland USA</p> <p><i>Undergraduate Teaching Assistant</i></p> <ul style="list-style-type: none"> • Astronomy 100 – Introduction to Astronomy – Fall 2011 to Spring 2013 • Astronomy 120 – Introductory Astrophysics – Fall 2012 (Grader)
OBSERVATIONAL EXPERIENCE	<p>Blanco Telescope, Cerro Tololo Inter-American Observatory, Chile</p> <ul style="list-style-type: none"> • DECam – DES-GW LIGO Follow-up 2017B Semester – 20 hours • DECam – DES-GW LIGO Follow-up 2017A Semester – 25 hours • DECam – DES-GW LIGO Follow-up 2016B Semester – 50 hours • DECam – DES-GW LIGO Follow-up 2015B Semester – 30 hours <p>Magellan Telescope, Las Campanas Observatory, Chile</p> <ul style="list-style-type: none"> • Clay 6.5m – LDSS3-C – 3 nights • Baade 6.5m – IMACS – 8 nights <p>MMT, Fred Lawrence Whipple Observatory, USA</p> <ul style="list-style-type: none"> • BlueChannel – 3 nights

TECHNICAL SKILLS	<p>Programming: Python, R, C/C++, Perl, Mathematica, MATLAB, Git</p> <p>Science Applications: SAO DS9, HEASoft, <i>Spitzer</i> SMART software, IDL Astrolib Tools, VISIT, Gnuplot, IRAF</p>
PUBLISHED WORKS	<p>As of October 30, 2017 I am an author on 26 refereed publications (7 as first author), my <i>h</i>-index is 11 and my refereed publications have 423 citations. First author papers are shown here. A full publication list is available below.</p> <p>Cowperthwaite, P. S., Berger, E., Villar, V. A., & et al., “The Electromagnetic Counterpart of the Binary Neutron Star Merger LIGO/VIRGO GW170817. II. UV, Optical, and Near-IR Light Curves and Comparison to Kilonova Models” 2017, ApJL, 848, L17</p> <p>Cowperthwaite, P. S., Berger, E., Rest, A., & et al., “The LIGO “Dry-Run”: An Empirical Study of Contamination in Wide-Field Optical Follow-Up of Gravitational Wave Events” 2017, ApJ, <i>Submitted</i></p> <p>Cowperthwaite, P. S., Berger, E., Soares-Santos, M., & et al., “A DECam Search for an Optical Counterpart to the LIGO Gravitational-wave Event GW151226” 2016, ApJL, 826, L29</p> <p>Cowperthwaite, P. S., & Berger, E., “A Comprehensive Study of Detectability and Contamination in Deep Rapid Optical Searches for Gravitational Wave Counterparts” 2015, ApJ, 814, 25</p> <p>Cowperthwaite, P. S., & Reynolds, C. S. “Nonlinear Dynamics of Accretion Disks with Stochastic Viscosity,” 2014, ApJ, 791, 126</p> <p>Cowperthwaite, P. S., Massaro, F., D’Abrusco, R., & et al., “Identification of New Blazar Candidates With Multifrequency Archival Observations,” 2013, AJ, 146, 110</p> <p>Cowperthwaite, P. S. & Reynolds, C. S., “The Central Engine Structure of 3C120: Evidence for a Retrograde Black Hole or a Refilling Accretion Disk,” 2012, ApJ, 752, L21</p>
CONFERENCES AND PRESENTATIONS	<p>As of October 30, 2017 I have given 17 presentations of which 14 have been talks and 3 have been posters. A complete listing of talks and posters is available below.</p>
REFERENCES	<p>Prof. Edo Berger (e-mail: eberger@cfa.harvard.edu; phone: +617-495-7914)</p> <ul style="list-style-type: none"> • Professor, Astronomy, Harvard University <p>Prof. Brian Metzger (e-mail: bdm2129@columbia.edu; phone: +212-854-9702)</p> <ul style="list-style-type: none"> • Assistant Professor, Department of Physics, Columbia University <p>Prof. Daniel E. Holz (e-mail: dholz@uchicago.edu; phone: +773-834-3306)</p> <ul style="list-style-type: none"> • Associate Professor, KICP, The University of Chicago <p>Prof. Daniel Eisenstein (e-mail: deisenstein@cfa.harvard.edu; phone: +617-495-7530)</p> <ul style="list-style-type: none"> • Professor, Astronomy, Harvard University