

## Philip S. Cowperthwaite

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

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

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 November 16, 2017 I am an author on 28 refereed publications (7 as first author), my <i>h</i>-index is 17 and my refereed publications have 630 citations. First author papers are shown here. A full publication list is available below.</p> <p>Cowperthwaite, P. S., Berger, E., Villar, V. A., &amp; 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., &amp; 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., &amp; 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., &amp; 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., &amp; 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., &amp; et al., “Identification of New Blazar Candidates With Multifrequency Archival Observations,” 2013, AJ, 146, 110</p> <p>Cowperthwaite, P. S. &amp; 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 November 16, 2017 I have given 19 presentations of which 16 have been talks and 3 have been posters.</p>
REFERENCES	<p><b>Prof. Edo Berger</b> (e-mail: eberger@cfa.harvard.edu; phone: +617-495-7914)</p> <ul style="list-style-type: none"> <li>• Professor, Astronomy, Harvard University</li> </ul> <p><b>Prof. Brian Metzger</b> (e-mail: bdm2129@columbia.edu; phone: +212-854-9702)</p> <ul style="list-style-type: none"> <li>• Assistant Professor, Department of Physics, Columbia University</li> </ul> <p><b>Prof. Daniel E. Holz</b> (e-mail: dholz@uchicago.edu; phone: +773-834-3306)</p> <ul style="list-style-type: none"> <li>• Associate Professor, KICP, The University of Chicago</li> </ul> <p><b>Prof. Daniel Eisenstein</b> (e-mail: deisenstein@cfa.harvard.edu; phone: +617-495-7530)</p> <ul style="list-style-type: none"> <li>• Professor, Astronomy, Harvard University</li> </ul>