

# Anna Y. Q. Ho

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## EDUCATION

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Expected 2020	PhD, California Institute of Technology, Astrophysics Thesis: <i>The Landscape of Engine-Driven Explosions</i> Advisor: Prof. Shri Kulkarni
2017	M.S., California Institute of Technology, Astrophysics
2014	B.S., Massachusetts Institute of Technology, Physics

## FELLOWSHIPS AND AWARDS

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2014-2019	NSF Graduate Research Fellowship
2019	Affiliate, Keck Institute for Space Studies (University Award)
2017	Garmire Scholarship, Caltech (Division Award)
2014-2015	Fulbright Scholarship
2014	Karl Taylor Compton Prize, MIT (University Award)
2014	Ida M. Green Fellowship, MIT (Departmental Award)
2014	Ford Foundation Fellowship, Honorable Mention
2014	Chambliss Astronomy Achievement Student Awards, Honorable Mention
2013	First Place, Dewitt Wallace Prize for Science Writing for the Public, MIT

## PUBLICATIONS

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### First Author

- [1] **Ho, A. Y. Q.**, Goldstein, D. A., Schulze, S., et al. 2019, *Evidence for Late-stage Eruptive Mass-loss in the Progenitor to SN2018gep, a Broad-lined Ic Supernova: Pre-explosion Emission and a Rapidly Rising Luminous Transient*, accepted to ApJ ([arXiv:1904.11009](https://arxiv.org/abs/1904.11009))
- [2] **Ho, A. Y. Q.**, Phinney, E. S., Ravi, V., et al. 2019, *AT2018cow: a luminous millimeter transient*, ApJ, **871**, 73 ([arXiv:1810.10880](https://arxiv.org/abs/1810.10880))
- [3] **Ho, A. Y. Q.**, Kulkarni, S.R., Nugent, P. E. et al. 2018, *iPTF Archival Search for Fast Optical Transients*, ApJ, **854**, 13 ([arXiv:1712.00949](https://arxiv.org/abs/1712.00949))
- [4] **Ho, A. Y. Q.**, Rix, H.-W., Ness, M. K., Hogg, D. W., et al. 2017, *Masses and Ages for 230,000 LAMOST Giants, via Their Carbon and Nitrogen Abundances*, ApJ, **841**, 40 ([arXiv:1609.03195](https://arxiv.org/abs/1609.03195))
- [5] **Ho, A. Y. Q.**, Ness, M. K., Hogg, D. W., et al. 2017, *Label Transfer from APOGEE to LAMOST: Precise Stellar Parameters for 450,000 LAMOST Giants*, ApJ, **836**, 5 ([arXiv:1602.00303](https://arxiv.org/abs/1602.00303))

### Co-Author

- [1] Duffell, Paul C. and **Ho, A. Y. Q.** 2019, *How Dense a CSM is Sufficient to Choke a Jet?*, submitted to ApJ ([arXiv:1907.03768](https://arxiv.org/abs/1907.03768))
- [2] Jencson, J. E. et al. 2019, *Discovery of an Intermediate-luminosity Red Transient in M51 and Its Likely Dust-obscured, Infrared-variable Progenitor*, ApJL, **880**, L20 ([arXiv:1904.07857](https://arxiv.org/abs/1904.07857))

- [3] Graham, M. J. et al. 2019, *The Zwicky Transient Facility: Science Objectives*, PASP, 131, 078001 ([arXiv:1902.01945](#))
- [4] Perley, D. A. et al. 2019, *The Fast, Luminous Ultraviolet Transient AT2018cow: Extreme Supernova, or Disruption of a Star by an Intermediate-Mass black Hole?*, MNRAS, 484, 1031 ([arXiv:1808.00969](#))
- [5] De, K. et al. 2019, *ZTF 18aaqeasu (SN2018byg): A Massive Helium-shell Double Detonation on a Sub-Chandrasekhar-mass White Dwarf*, ApJL, 873, L18 ([arXiv:1901.00874](#))
- [6] Bellm, E. C. et al. 2019, *The Zwicky Transient Facility: System Overview, Performance, and First Results*, PASP, 131, 018002 ([arXiv:1902.01932](#))
- [7] Casey, A.R., **Ho, A. Y. Q.**, et al. 2019, *Tidal interactions between binary stars drives lithium production in low-mass red giants*, ApJ, **880**, 125 ([arXiv:1902.04102](#))
- [8] Kemp, A. J., et al. 2018, *On the discovery of K-enhanced and possibly Mg-depleted stars throughout the Milky Way*, MNRAS, 480, 1384 ([arXiv:1807.05693](#))
- [9] Adams, S. M. et al. 2018, *iPTF Survey for Cool Transients*, PASP, 130, 034202 ([arXiv:1711.10501](#))
- [10] Guglielmo, M., Lane, R. R., Conn, B. C., et al. 2018, *On the Origin of the Monoceros Ring - I: Kinematics, proper motions, and the nature of the progenitor*, MNRAS, 474, 4584 ([arXiv:1711.06682](#))
- [11] Hallinan, G., et al. 2017, *A Radio Counterpart to a Neutron Star Merger*, Science, 358, 1579 ([arXiv:1710.05435](#))
- [12] Kasliwal, M. M., et al. 2017, *Illuminating Gravitational Waves: A Concordant Picture of Photons from a Neutron Star Merger*, Science, 358, 1559 ([arXiv:1710.05436](#))
- [13] Abbott, B. P., et al. 2017, *Multi-messenger Observations of a Binary Neutron Star Merger*, ApJL, 848, L12 ([arXiv:1710.05833](#))
- [14] Blagorodnova, N., et al. 2017, *iPTF16fnl: a faint and fast tidal disruption event in an E+A galaxy*, ApJ, 844, 46 ([arXiv:1703.00965](#))
- [15] Casey, A. R., et al. 2016, *The Cannon 2: A data-driven model of stellar spectra for detailed chemical abundance analyses*, submitted to ApJ ([arXiv:1603.03040](#))
- [16] Ting, Y.-S., et al. 2017, *Measuring 14 Elemental Abundances with R = 1800 LAMOST Spectra*, ApJL, **849**, L9 ([arXiv:1708.01758](#))
- [17] Hogg, D. W., et al. 2016, *Chemical tagging can work: Identification of stellar phase-space structures purely by chemical-abundance similarity*, ApJ, **833**, 262 ([arXiv:1601.05413](#))
- [18] Ness, M., et al. 2016, *Spectroscopic Determination of Masses (and Implied Ages) for Red Giants*, ApJ, **823**, 114 ([arXiv:1511.08204](#))
- [19] Ness, M., et al. 2015, *The Cannon: A data-driven approach to stellar label determination*, ApJ, **808**, 16 ([arXiv:1501.07604](#))

## INVITED TALKS

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- 2019 Keck Institute for Space Studies, Pasadena, CA  
*Telescopes, Astronomical Discoveries, and Their Influence on Literature*
- 2019 Stars and Planets Seminar, Harvard-Smithsonian CfA, Cambridge, MA  
*The Death Throes of a Stripped Massive Star*
- 2019 SMA Seminar, Harvard-Smithsonian CfA, Cambridge, MA  
*SMA Observations of AT2018cow:*  
*A Prototype for Millimeter Time-Domain Astronomy*
- 2019 Brown Bag Lunch, MIT, Cambridge, MA  
*The Death Throes of a Stripped Massive Star*
- 2019 UC Berkeley Department Lunch Talk, Berkeley, CA  
*The Death Throes of a Stripped Massive Star*
- 2019 Press Panel, AAS Winter Meeting, Seattle, WA  
*Watching The Cow Shock Its Environment: The Millimeter-Wavelength Perspective*
- 2016 Gemini Observatory, La Serena, Chile  
*The Cannon: Data-Driven Spectral Modeling in the Era of Large Stellar Surveys*

## CONTRIBUTED TALKS

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- 2019 ZTF Collaboration Meeting, Seattle, WA  
*The Landscape of Engine-Driven Explosions*
- 2019 STScI Spring Symposium, Baltimore, MD  
*The Death Throes of a Stripped Massive Star*
- 2019 ZTF-Theory Network Meeting, KITP, Santa Barbara, CA  
*The Death Throes of a Stripped Massive Star*
- 2018 ZTF-Theory Network Meeting, KITP, Santa Barbara, CA  
*AT2018cow: A Rapid Ultraviolet Transient*
- 2017 GROWTH Annual Meeting, Milwaukee, WI  
*Dirty Fireballs and Orphan Afterglows:*  
*A Broader Landscape of Relativistic Explosions with ZTF*
- 2016 NRAO Lunch Seminar, Socorro, NM  
*The Cannon: Data-Driven Spectral Modeling in the Era of Large Stellar Surveys*
- 2015 Boutiques & Experiments Conference, Caltech, Pasadena, CA  
*Using The Cannon to Exploit the Overlap Between Kepler & APOGEE*
- 2015 SDSS-IV Collaboration Meeting, IFT UAM-CSIC, Madrid, Spain  
*Survey Cross-Calibration Using The Cannon:*  
*APOGEE Labels from LAMOST Spectra*
- 2015 The Local Group Astrostatistics Conference, U. Mich, Ann Arbor, USA  
*Survey Cross-Calibration Using The Cannon:*  
*APOGEE Labels from LAMOST Spectra*
- 2014 MPA-AIP Milky Way & Local Volume Meeting, AIP, Potsdam, Germany  
*The Cannon: A New Data-Driven Method for Retrieving Stellar Parameters and Abundances*
- 2014 Max Planck Institute for Astronomy, Heidelberg, Germany  
*Rotation Measures of Globular Cluster Pulsars as a Unique Probe of the Galactic Magnetic Field*
- 2013 NRAO, Charlottesville, VA  
*Rotation Measures of Globular Cluster Pulsars as a Unique Probe of the Galactic Magnetic Field*
- 2012 NRAO, Charlottesville, VA  
*Studies of Millisecond Pulsars in the Globular Cluster Terzan 5*

## OBSERVING EXPERIENCE

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Radio	PI of 5 successful observing proposals (3 VLA, 1 VLBA, 1 GMRT) Experienced in VLA data reduction
Millimeter	PI of 5 successful observing proposals (3 SMA, 2 ALMA)
Optical	Designed and led observing programs on Palomar 60-inch and 200-inch, Keck (LRIS) Over 10 nights of observing on DBSP and LRIS
X-ray	Over 10 <i>Swift</i> ToO observations approved and reduced

## PROFESSIONAL SERVICE

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2019-Present	Referee/reviewer for ApJ
2019-Present	Graduate representative to the faculty, Astronomy Department
2017-Present	Graduate student mentor, Astronomy Department
2018	Graduate admissions committee, Astronomy Department
2018	Department representative, Graduate Student Council
2014	AAS representative, Congressional Visits Day, Washington DC

## TEACHING

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### University Teaching

2016	TA for Ay1 at Caltech (undergraduate course, “The Evolving Universe”) Recognized as “outstanding TA” by Caltech registrar
2015	TA for Ay122b at Caltech (graduate course, “Radio Astronomy”)
2015	TA for Ay20 at Caltech (undergraduate course, “Basic Astronomy and the Galaxy”)

### Workshops

2018	Instructor, ZTF Summer School
2016	Lead Instructor, Gemini Observatory Workshop on Data-Driven Modeling of Spectra

### K-12 Teaching

2019	2-day workshop for K-12 teachers, Huntington Library, Pasadena CA
2016	9-week class on astronomy for 7-12 year olds Institute for Educational Advancement, Pasadena CA
2010-2014	Designed and taught 12 classes for over 500 middle- and high-school students, MIT
2010	High-school teaching assistant for 1 month, Pueblo Pintado Navajo Reservation, NM

## SCIENCE POLICY

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2018-Present	Founder and Chair, Science Policy Committee, Graduate Student Council
2017-2019	Vice President, Science and Engineering Policy At Caltech (Student Club)
2017	International Summer Symposium on Science and World Affairs, Germany Talk title: <i>Towards a Framework for Space Traffic Control</i>
2017	Selected by Caltech to participate in Congressional Visits Day, Washington DC

## PUBLIC OUTREACH

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2015-Present	Lecturer, amateur astronomy societies and local observatories
2015-Present	Volunteer, Caltech Astronomy Outreach program
2014-2015	Volunteer, Center for Astronomy Education and Outreach, Heidelberg, Germany
2014	AAS Astronomy Ambassadors Workshop, AAS 223rd Meeting
2012-2013	Lecturer and volunteer, McCormick Public Observatory, Charlottesville VA

## WRITING

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2019	<a href="#">Article</a> on AT2018cow for Submillimeter Array Newsletter
2018	<a href="#">Article</a> on cosmic forensics for Caltech Letters platform
2015	<a href="#">Press release</a> for the Max Planck Institute of Astronomy, Heidelberg, Germany
2015	<a href="#">Blog post</a> for the UniverseToday news site
2014	<a href="#">Blog post</a> on Congressional Visits Day for the American Astronomical Society
2010-2014	<a href="#">Blogger</a> , MIT admissions website
2011	<a href="#">Article</a> for MIT News