

## Marie Wingyee Lau

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PERSONAL AND CONTACT INFO	Emails: lwymarie@ucolick.org, lwymarie@gmail.com Address: Dept of Astronomy, University of California, Santa Cruz, CA 95064 Homepage: <a href="http://lwymarie.github.io">http://lwymarie.github.io</a> Languages: IDL, Python, Mathematica, English, Chinese Citizenship: Hong Kong SAR
RESEARCH INTERESTS	Circumgalactic medium, quasars, galaxy formation, quasar absorption lines, tidal disruption events, stellar abundances
EDUCATION	<b>University of California, Santa Cruz</b> , 2012 - Present <ul style="list-style-type: none"><li>• Ph.D. Astronomy in progress</li><li>• Thesis advisor: Prof. J. Xavier Prochaska</li><li>• M.S. 2015</li></ul> <b>The Chinese University of Hong Kong</b> , 2008 - 2012 <ul style="list-style-type: none"><li>• B.S. Physics, with honors</li></ul> <b>University of California, Santa Barbara</b> , Winter - Spring 2011 <ul style="list-style-type: none"><li>• Educational Abroad Program Reciprocity</li></ul> <b>University of California, Berkeley</b> , Summer 2009 <ul style="list-style-type: none"><li>• Summer Sessions</li></ul>
HONORS AND AWARDS	<ul style="list-style-type: none"><li>• NEXSI Fellowship, UC Santa Cruz, 2012</li><li>• Regents' Fellowship, UC Santa Cruz, 2012</li><li>• Student speech representative of the United College scholarship presentation ceremony, The Chinese University of Hong Kong, 2012</li><li>• 9 scholarships totaling the full tuition, The Chinese University of Hong Kong, 2008 - 2012</li><li>• Summer Undergraduate Research Fellowship, California Institute of Technology, 2011</li></ul>
TELESCOPE PROPOSALS AND OBSERVING	<ul style="list-style-type: none"><li>• Principal Investigator on 4 successful Lick/Shane proposals, 2015 - 2017</li><li>• Co-Investigator on many successful Lick/Shane proposals, Keck proposals, and ALMA proposals</li><li>• Lead observer of <math>\sim 50</math> nights on medium and large telescopes</li></ul>
PUBLICATIONS	<ul style="list-style-type: none"><li>• <b>Lau, M. W.</b>, Prochaska, J. X., &amp; Hennawi, J. F., <i>Quasars Probing Quasars. IX. The Kinematics Of the Circumgalactic Medium Surrounding <math>z \sim 2</math> Quasars</i>, submitted to The Astrophysical Journal, arXiv:1705.03476</li><li>• Mathur, S., et al. including <b>Lau, M. W.</b>, <i>Space Telescope and Optical Reverberation Mapping Project. VII. Understanding the UV anomaly in NGC 5548 with X-Ray Spectroscopy</i>, submitted to The Astrophysical Journal, arXiv:1704.06345</li><li>• Pei, L, et al. including <b>Lau, M. W.</b>, <i>Space Telescope and Optical Reverberation Mapping Project. V. Optical Spectroscopic campaign and Emission-line Analysis for NGC 5548</i>, The Astrophysical Journal, Volume 837, Issue 2, article id. 131 (2017)</li><li>• <b>Lau, M. W.</b>, Prochaska, J. X., &amp; Hennawi, J. F., <i>Quasars Probing Quasars. VIII. The Physical Properties of the Cool Circumgalactic Medium Surrounding <math>z \sim 2-3</math> Massive Galaxies Hosting Quasars</i>, The Astrophysical Journal Supplement Series, Volume 226, Issue 2, article id. 25 (2016)</li><li>• Cai, Z., Fan, X., Peirani, S., Bian, F., Frye, B., McGreer, I., Prochaska, J. X., <b>Lau, M. W.</b>, Tejos, N., Ho, S., &amp; Schneider, D. P., <i>MApping the Most Massive</i></li></ul>

*Overdensities Through Hydrogen (MAMMOTH) I: Methodology*, The Astrophysical Journal, Volume 833, Issue 2, article id. 135 (2016)

- Rubin, K. H. R., Hennawi, J. F., Prochaska, J. X., Simcoe, R. A., Myers, A., & **Lau, M. W.**, *Dissecting the Gaseous Halos of  $z \sim 2$  Damped Ly $\alpha$  Systems with Close Quasar Pairs*, The Astrophysical Journal, Volume 808, Issue 1, article id. 38 (2015)
- Prochaska, J. X., **Lau, M. W.**, & Hennawi, J. F., *Quasars Probing Quasars. VII. The Pinnacle of the Cool Circumgalactic medium Surrounds Massive  $z \sim 2$  Galaxies*, The Astrophysical Journal, Volume 796, Issue 2, article id. 140 (2014)
- Prochaska, J. X., Hennawi, J. F., Lee, K.-G., Cantalupo, S., Bovy, J., Djorgovski, S. G., Ellison, S. L., **Lau, M. W.**, Martin, C. L., Myers, A., Rubin, K. H. R., % Simcoe, R. A., *Quasars Probing Quasars. VI. Excess HI Absorption within One Proper Mpc of  $z \sim 2$  Quasars*, The Astrophysical Journal, Volume 776, Issue 2, article id. 136 (2013)
- Jiang, Y., Aumann, H. H, **Lau, M. W.**, & Yung Y. L., *Climate Change Sensitivity Evaluation from AIRS and IRIS measurements*, Proceedings of the SPIE, Volume 8153, id. 81531Z (2011)

#### CONTRIBUTED TALKS

- IMPS Winter Writing Workshop, UC Santa Cruz, 2016
- Unveiling the AGN - Galaxy Evolution Connection, Universidad de Concepción, 2015
- Santa Cruz Galaxy Formation Workshop, UC Santa Cruz, 2014
- Intergalactic Matters, Max-Planck-Institut für Astronomie, 2014
- Friday Lunchtime Astrophysics Seminar Hour, UC Santa Cruz, 2014
- GAstronomy lunch talk, UC Santa Barbara, 2011

#### SERVICE

- Referee for the Monthly Notices of the Royal Astronomical Society, 2015
- Organizer of prospective graduate student visit, UC Santa Cruz, 2015
- Vice-President and Publication of the United College Student Union Physics Society, The Chinese University of Hong Kong, 2009 - 2011
- Observer of United College Student Supervision Committee, The Chinese University of Hong Kong, 2010 - 2011

#### TEACHING, MENTORING AND OUTREACH

- Teaching Assistant for ASTR/PHYS 9B: Introduction to Research in Physics and Astrophysics, UC Santa Cruz, Spring 2017
- Teaching Assistant for ASTR 2: Overview of the Universe, UC Santa Cruz, Winter 2017, Fall 2016, Spring 2016, Winter 2016, Fall 2015
- Mentor for the Siemens Competition in Math, Science & Technology, project titled Surface Compositions of Red Giant Stars in Globular Clusters, 2016
- Primary Mentor for four high school interns under the Science Internship Program, UC Santa Cruz, 2017, 2016
- Teaching Assistant for California State Summer School for Mathematics and Science (COSMOS), 2017, 2016
- Teaching Assistant for ASTR 6: The Space-Age Solar System, UC Santa Cruz, Winter 2015
- Teaching Assistant for ASTR 1: Introduction to the Cosmos, UC Santa Cruz, Fall 2012

#### RESEARCH EXPERIENCES OUTSIDE OF ASTRONOMY

- Climate change sensitivity evaluation from spaceborne instrument measurements, with Prof. Yuk L. Yung, Caltech
- Determining cloud base and thickness from spaceborne spectroscopic imaging and lidar profiling techniques, with Dr Dong Wu, Goddard Space Flight Center

- Study on the occurrence of high winds and severe gusts during the onset of Northeast monsoon in Hong Kong, Hong Kong Observatory
- Mechanical vibration of thin plates (senior thesis), with Prof. Kenneth Young, The Chinese University of Hong Kong

#### ACADEMIC REFERENCES

- Prof. J. Xavier Prochaska, UCO/Lick Observatory, UC Santa Cruz, xavier@ucolick.org
- Prof. Graeme Smith, UCO/Lick Observatory, UC Santa Cruz, graeme@ucolick.org
- Prof. Enrico Ramirez-Ruiz, UCO/Lick Observatory, UC Santa Cruz, enrico@ucolick.org
- Prof. Joseph F. Hennawi, UC Santa Barbara, joe@physics.ucsb.edu