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## CURRICULUM VITAE OF TONY WONG

### ***Education***

*University of California, Berkeley (1994–2000)*

Received M. A. in December 1996 in Astronomy.

Received Ph.D. in December 2000 in Astrophysics.

*Thesis Title:* Radial Gas Flows and Star Formation in Spiral Galaxies

*Thesis Committee:* L. Blitz (chair), C. F. McKee, C. H. Townes

*Harvard University (1990–1994)*

Received B. A. in June 1994, *summa cum laude*.

Fields of concentration: Physics and Astronomy and Astrophysics.

Phi Beta Kappa, inducted November 1993 (top 5% of class).

### ***Employment & Research Experience***

**2018–present:** *University of Illinois at Urbana-Champaign.* Professor of Astronomy (tenured).

**2012–2018:** *University of Illinois at Urbana-Champaign.* Associate Professor of Astronomy (tenured).

**2006–2012:** *University of Illinois at Urbana-Champaign.* Assistant Professor of Astronomy.

**2003–2006:** *CSIRO Australia Telescope National Facility and University of New South Wales.* ARC-CSIRO Linkage Postdoctoral Fellow. ATNF 3mm Project Scientist.

**2001–2003:** *CSIRO Australia Telescope National Facility.* Bolton Postdoctoral Fellow.

**1996–2000:** *University of California, Berkeley.* Research Assistant for UCB Radio Astronomy Laboratory, under direction of Prof. Leo Blitz.

**1995–1996:** *University of California, Berkeley.* Research Assistant for Prof. Don Backer.

**1993–1994:** *Harvard University.* “Neutral Hydrogen Holes in the Dwarf Galaxy DDO 47,” B.A. thesis completed May 1994 under the direction of Dr. Daniel Puche at the Center for Astrophysics.

### ***Professional Memberships***

American Astronomical Society

### ***Research Students Supervised***

*University of Illinois, graduate students:* Kijeong Yim (2006–12), David Rebolledo (2008–13), Rui Xue (2008–15), Yixian Cao (2013–18).

*University of Illinois, undergraduate students:* Tae-Woo Kim (2012), Katrina Litke (2012–15), Aamodini Gupta (2015–16), Tian Lan (2015–17), Chaoyue Cui (2016), Evan Wojciechowski (2016–18), Jeffrey Bandurski (2016–18), Yuanze Luo (2017–19), Xincheng Lin (2018–19), Yi Zhuang (2018–20), Yufeng Luo (2019–20), Hailin Wang (2019–20), Charmi Shah (2020–).

Swinburne University of Technology: Annie Hughes (2004–2010), co-supervisor.

University of New South Wales: Steven Longmore (2004–2006), co-supervisor.

## Grants Awarded

PI, NSF AST 16-16199, “Changes in Molecular Gas and Galaxy Properties Over Time in the Era of Integral Field Unit Surveys,” 9/16–8/19, \$267,664.

co-I, NSF AST 11-39950, “Collaborative Research: Astronomy with CARMA,” (PI: L. Looney), 9/12–8/15, \$1,820,127.

PI, NASA ADAP10-0137, “Testing Equilibrium Models of Molecular Gas in the Magellanic Clouds,” 01/11–12/12, \$199,589.

co-I, NSF AST 08-38226, “Collaborative Research: Astronomy with CARMA,” (PI: L. Looney), 7/09–6/12, \$3,025,722.

co-I, NSF AST 08-07323, “The LMC as a Massive Star Formation Laboratory,” (PI: L. Looney), 8/08–7/10, \$378,146.

PI, NASA JPL 1378722, “MIEOWS: The MIPS-IRAC Edge-on Wonder Survey,” 06/09–06/10, \$38,500.

## Top 10 Publications

Wong, T., & 11 coauthors, 2013, “CARMA Survey Toward Infrared-bright Nearby Galaxies (STING). III. The Dependence of Atomic and Molecular Gas Surface Densities on Galaxy Properties,” *Astrophysical Journal Letters*, 777, L4. [Reveals a clear dependence of characteristic atomic gas surface density on metallicity, a result predicted by theoretical models of self-shielding equilibrium.](#)

Welty, D. E., Xue, R., & Wong, T. 2012, “Interstellar HI and H<sub>2</sub> in the Magellanic Clouds: An Expanded Sample Based on Ultraviolet Absorption-line Data,” *Astrophysical Journal*, 745, 173. [Comprehensive analysis of UV absorption data, the best direct tracers of the cold ISM in the two nearest star-forming galaxies.](#)

Yim, K., Wong, T., Howk, J. C., & van der Hulst, J. M. 2011, “The Interstellar Medium and Star Formation in Edge-On Galaxies. I. NGC 891,” *Astronomical Journal*, 141, 48. [Among the first observational studies of the relative thicknesses of the neutral gas layers in an external galaxy.](#)

Wong, T., & 17 coauthors, 2011, “The Magellanic Mopra Assessment (MAGMA). I. The Molecular Cloud Population of the Large Magellanic Cloud,” *Astrophysical Journal Supplement*, 197, 16. [Presents the first resolved mapping survey of molecular clouds in the nearest star-forming galaxy to the Milky Way.](#)

Wong, T. 2009, “On the Timescale for Star Formation in Galaxies,” *Astrophysical Journal*, 705, 650–658. [Suggests that the molecular-to-atomic ratio may be related to the timescale for gravitational instability in a thin disk.](#)

Wong, T., Whiteoak, J. B., Ott, J., Chin, Y.-N., & Cunningham, M. R. 2006, “Synthesis Imaging of Dense Molecular Gas in the N113 HII Region of the Large Magellanic Cloud,” *Astrophysical Journal*, 649, 224–234. [The first observations of molecular line emission from the LMC to be made with a millimeter-wave interferometer.](#)

Hughes, A., Wong, T., Ekers, R., Staveley-Smith, L., Filipovic, M., Maddison, S., Fukui, Y., & Mizuno, N. 2006, “A Multi-resolution Analysis of the Radio-FIR Correlation in the Large Magellanic Cloud,” *Monthly Notices of the Royal Astronomical Society*, 370, 363–379. [Reveals how thermal and non-thermal components contribute to the far infrared-radio correlation.](#)

Wong, T., Blitz, L., & Bosma, A. 2004, “A Search for Kinematic Evidence of Radial Gas Flows in Spiral Galaxies,” *Astrophysical Journal*, 605, 183–204. [Discusses a formalism to constrain the speed of radial gas flows in galaxy disks.](#)

Helfer, T. T., Thornley, M. D., Regan, M. W., Wong, T., Sheth, K., Vogel, S. N., Blitz, L., & Bock, D. C.-J. 2003, “The BIMA Survey of Nearby Galaxies (BIMA SONG). II. The CO Data,” *Astrophysical Journal Supplement Series*, 145, 259–327. *One of the first, and still largest, surveys of CO in external galaxies at sub-kiloparsec resolution.*

Wong, T. & Blitz, L. 2002, “The Relationship between Gas Content and Star Formation in Molecule-Rich Spiral Galaxies,” *Astrophysical Journal*, 569, 157–183. *Discusses how the gas-star formation relation varies between atomic and molecular components. Over 300 citations as of 2013.*

### ***Selected Additional Refereed Publications***

Wong, T., Hughes, A., Tokuda, K., et al. 2019, “Relations between Molecular Cloud Structure Sizes and Line Widths in the Large Magellanic Cloud,” *Astrophysical Journal*, 885, 50.

Dey, B., Rosolowsky, E., Cao, Y., et al. 2019, “The EDGE-CALIFA survey: exploring the star formation law through variable selection,” *Monthly Notices of the Royal Astronomical Society*, 488, 1926.

Wong, T., Hughes, A., Tokuda, K., et al. 2017, “ALMA Observations of a Quiescent Molecular Cloud in the Large Magellanic Cloud,” *Astrophysical Journal*, 850, 139.

Cao, Y., Wong, T., Xue, R., et al. 2017, “CARMA Survey toward Infrared-bright Nearby Galaxies (STING). IV. Spatially Resolved  $^{13}\text{CO}$  in Spiral Galaxies,” *Astrophysical Journal*, 847, 33.

Bolatto, A. D., Wong, T., Utomo, D., et al. 2017, “The EDGE-CALIFA Survey: Interferometric Observations of 126 Galaxies with CARMA,” *Astrophysical Journal*, 846, 159.

Welty, D. E., Lauroesch, J. T., Wong, T., & York, D. G. 2016, “Thermal Pressures in the Interstellar Medium of the Magellanic Clouds,” *Astrophysical Journal*, 821, 118.

Rebolledo, D., Wong, T., Xue, R., Leroy, A., Koda, J., & Donovan Meyer, J. 2015, “Scaling Relations of the Properties for CO Resolved Structures in Nearby Spiral Galaxies,” *Astrophysical Journal*, 808, 99.

Yim, K., Wong, T., Xue, R., Rand, R. J., Rosolowsky, E., van der Hulst, J. M., Benjamin, R. A., & Murphy, E. J. 2014, “The Interstellar Medium and Star Formation in Edge-On Galaxies. II. NGC 4157, 4565, and 5907,” *Astronomical Journal*, 148, 127.

Rebolledo, D., Wong, T., Leroy, A., Koda, J., & Donovan Meyer, J. 2012, “Giant Molecular Clouds and Star Formation in the Non-grand Design Spiral Galaxy NGC 6946,” *Astrophysical Journal*, 757, 155.

Seale, J. P., Looney, L. W., Wong, T., & 3 coauthors, 2012, “The Life and Death of Dense Molecular Clumps in the Large Magellanic Cloud,” *Astrophysical Journal*, 751, 42.

Hughes, A., Wong, T., & 15 coauthors, 2010, “Physical Properties of Giant Molecular Clouds in the Large Magellanic Cloud,” *Monthly Notices of the Royal Astronomical Society*, 406, 2065.

Fukui, Y., Kawamura, A., Wong, T., & 10 coauthors, 2009, “Molecular and Atomic Gas in the Large Magellanic Cloud. II. Three-Dimensional Correlation Between CO and H I,” *Astrophysical Journal*, 705, 144–155.

Wong, T., & 12 coauthors, 2009, “Molecular and Atomic Gas in the Large Magellanic Cloud. I. Conditions for CO Detection,” *Astrophysical Journal*, 696, 370–384.

Wong, T., & 14 coauthors, 2008, “Molecular Line Mapping of the Giant Molecular Cloud Associated with RCW 106 - II. Column Density and Dynamical State of the Clumps,” *Monthly Notices of the Royal Astronomical Society*, 386, 1069–1084.

Wong, T., Schöier, F. L., Lindqvist, M., & Olofsson, H. 2004, “Australia Telescope Compact Array Imaging of Circumstellar HCN Line Emission from R Scl,” *Astronomy & Astrophysics*, 413, 241–249.

Regan, M. W., Thornley, M. D., Helfer, T. T., Sheth, K., Wong, T., Vogel, S. N., Blitz, L., & Bock, D. C.-J. 2001, “The BIMA Survey of Nearby Galaxies. I. The Radial Distribution of CO Emission in Spiral Galaxies,” *Astrophysical Journal*, 561, 218–237.

Wong, T., Backer, D. C., & Lyne, A. G. 2001, “Observations of a Series of Six Recent Glitches in the Crab Pulsar,” *Astrophysical Journal*, 548, 447–459.

Wong, T. & Blitz, L. 2000, “Non-Circular Gas Kinematics and Star Formation in the Ringed Galaxy NGC 4736,” *Astrophysical Journal*, 540, 771–796.

## ***Teaching Experience***

### *U. of Illinois at Urbana-Champaign*

“The Solar System” (Astronomy 121). An introductory astronomy class for non-science majors.

“Introduction to Astrophysics” (Astronomy 210). An introductory astronomy class for engineers and scientists.

“Solar System and ISM” (Astronomy 405). An upper-level undergraduate class, primarily for physicists, engineers, and astronomy majors.

“Galaxies and the Universe” (Astronomy 406). An upper-level undergraduate class, primarily for physicists, engineers, and astronomy majors.

“Astrophysical Dynamics” (Astronomy 502). A graduate-level class on stellar and gas dynamics.

“Galaxies” (Astronomy 506). A graduate-level class on the Milky Way and nearby galaxies.

### *UC Berkeley*

“Life and the Universe” (Astronomy 9). An introductory course in astrobiology for undergraduates.

## ***Honors & Awards***

List of Teachers Ranked as Excellent, UIUC, Fall 2008, Spring 2018.

Mary Elizabeth Uhl Prize, Department of Astronomy, UC Berkeley, 2000.

Phi Beta Kappa of Northern California Scholarship Award, 1999.

Outstanding Graduate Student Instructor Award, UC Berkeley, 1997.

Lydia Lo Scholarship, UC Berkeley, 1994–5.

NSF Graduate Fellowship Program, Honorable Mention, 1994.

Goldberg Prize for Outstanding Undergraduate Research in Astronomy, Harvard, 1994.

John Harvard Scholarship, 1991–2 and 1992–3.

Valedictorian, Stuyvesant High School, New York City, 1990.

National Merit Finalist, 1990.

## ***Activities & Service Since 2006***

### *UIUC Astronomy Department*

**2019–2022:** Executive Committee member

**2019–2020:** Graduate Admissions Committee chair

**2012–2013, 2014–2019:** Curriculum Committee chair

**FA 2012–SP 2018:** Representative, UIUC Senate

**SP 2010–SP 2018:** Advisor for Classes of 2014, 2018

**SP 2008, 2009, 2011:** Graduate Admissions Committee

**SP 2007, 2008, 2009, 2011, 2012, 2014:** Graduate Qualifying Exam Committee

**SP 2007, FA 2007, SP 2010, FA 2018, SP 2019:** Astronomy Colloquium chair

**2018–2020:** LAS Awards Committee.

**2016–2018:** ALMA Review Panel, Galaxies and Galactic Nuclei.

**2015–2019:** UIUC Senate Committee on Campus Operations

**2015–:** Organizing Committee, IAU Commission B4 (Radio Astronomy)

**2013–2014:** Submillimeter Array Time Allocation Committee.

**2012:** Chief Editor, Proc. IAU Symposium 292, “Molecular Gas, Dust, and Star Formation in Galaxies.”

**2011–2012:** Member, Extragalactic Structure (EGS) review panel, NRAO.

**2007–2008:** AUI Committee on the Future of US Radio Astronomy.

Referee for ApJ, AJ, PASA, MNRAS, Nature.

### ***Invited Talks***

Astronomy Department, UC Berkeley, 2017 March.

A 3D View on Galaxy Evolution, Heidelberg, Germany, 2015 July.

MegaSAGE Meeting #7, NRAO Charlottesville, 2014 September.

Fire Down Below: The Impact of Feedback on Star and Galaxy Formation, KITP conference, 2014 April.

Astronomy Department, U. of Wisconsin-Madison, 2013 September.

Regulation of Star Formation in Molecular Gas, Ringberg workshop, 2013 June.

Academia Sinica Institute of Astronomy & Astrophysics, 2012 January.

Astronomy Department, Indiana U., 2011 April.

Physics Department, Michigan State U., 2011 February.

Astronomy Department, UC Berkeley, 2010 November.

Blitzed 65 Conference, 2010 October.

National Radio Astronomy Observatory, Socorro, NM, 2009 November.

Physics Department, Northwestern University, 2009 October.

Physics Department, U. of Notre Dame, 2009 February.

Kavli Institute for Cosmological Physics, U. of Chicago, 2008 January.

Star Formation at High Angular Resolution, IAU Symposium 221, Sydney, Australia, 2003 July.

Harley Wood Winter School, Batemans Bay, NSW, Australia, 2002 June.

Center for Star Formation Studies Workshop, Santa Cruz, 2001 July.