Yong Zheng (郑永)

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University of California, Berkeley
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Research Interests

4. Gaseous Galaxy Halos, aka Circumgalactic Medium (CGM)
3. Baryon Cycle between Galaxies and CGM, including Inflows, Outflows, Recycling, and Turbulence
2. Optical and UV Spectroscopy, Integral Field Units, Radio Single-dish and Interferometry Observations
1. Synthetic Observations of Milky-Way-Mass Galaxies with Cosmological Hydrodynamic Simulations

Education

3. Columbia University, New York, NY, USA 2012-2018
   Ph.D., Astronomy
   Thesis Project: *The Cycle of Gaseous Baryons between the Disk and Halo*
   Thesis Advisors: Mary E. Putman, Joshua E. G. Peek
   M.A., M.Phil., Astrophysics
2. Peking University, Beijing, China 2008-2012
   B.S., Astronomy
1. Fuzhou No.1 High School, Fuzhou, Fujian, China 2005-2008

Awards

5. Miller Fellow, Miller Institute Postdoctoral Scholar Award, UC Berkeley 2018-2021
4. Dean's Fellowship, Graduate School of Arts and Science, Columbia University 2012-2018
3. First Prize, Linbridge Prize for Excellent Undergraduate Research Projects in Astronomy and Astrophysics, Kavli Institute for Astronomy and Astrophysics, Beijing, China 2011
2. Scholarship of Astronomical Alumni Fund for Excellent Undergraduates in Astronomy, Kavli Institute for Astronomy and Astrophysics, Beijing, China 2011
1. Scholarship of National Astronomical Observatories, Chinese Academy of Sciences (NAOC) Beijing, China 2010

Proposals

6. **PI**, W. M. Keck Observatory, DEIMOS, 2019B, U061, two half nights 09/2019
   Title: Probing M33's Multiphase Disk-Halo Interface with Resolved Kinematics
5. CoI, Hubble Space Telescope, Cycle 27, GO 15880 (PI Roman-Duval), 77 orbits 10/2019-10/2022
   Title: METAL-Z: Metal Evolution, Transport, and Abundance at Low Metallicity (Z)
4. **PI**, Green Bank Telescope, 18B-376 11/2018
   Title: Observations of H I toward the halo of a dwarf galaxy
3. Co I, Hubble Space Telescope, Cycle 26, GO 15656 (PI Peek), 75 orbits 10/2018-10/2021
   Title: QuaStar: The first unobscured view of the Milky Way's Circumgalactic Medium
2. Co I, Green Bank Telescope, 18B-331 (PI Denny) 02/2018
   Title: Constraining the Origin of A Very High-Velocity Cloud Toward M33 with GBT
1. **PI**, Hubble Space Telescope, Cycle 25, GO 15156, 32 orbits 10/2017-10/2020
   Title: Mapping Gas Flows from the Disk to the Circumgalactic Medium

Advising & Teaching

11. Advisor, R. Zhu, Undergraduate, University of California, Berkeley — Fall 2019-present
    Project: Studying Disk-wide Inflows and Outflows in LMC with HST/COS
10. Advisor, S. L. Denny, Graduate Student, Florida State University — 2018-present
    Project: GBT Follow-Up of a Very-High Velocity Cloud Near Wright's Cloud
9. Co-advisor, H. Cook, Undergrad Summer Research/Thesis, Columbia University — 2018-2019
    Project: Column Density Comparison of H I in GALFA-H I and HI4PI Surveys
8. Mentor, Society of Women in the Physical Sciences, UC Berkeley — Fall 2018
7. Co-advisor, A. Johnson, Undergrad Research, Columbia University — Spring 2018
    Project: H I limits of Local Group Dwarf Galaxies in GALFA-H I
6. Co-advisor, L. Li, Undergrad Summer Research, Columbia University — Summer 2015
    Project: H I Fiber Structures Detected in GALFA-H I
5. Lab Observing Instructor, Astronomy Labs I & II, Columbia University — Fall 2014-Fall 2015
4. Lab Instructor, Stars, Galaxies and Cosmology (W1904), Columbia University — Spring 2014
3. Lab Instructor, Earth, Moon, and Planets (W1903), Columbia University — Fall 2013
2. Mentor, Astronomy Undergraduate Mentoring Program, Columbia University — 2015-2017
1. Mentor, Astronomy Peer Mentoring Program, Columbia University — 2015-2017

Talks & Conferences

30. (Upcoming) Invited Colloquium, Department of Astronomy, Xiamen University — 12/2019
29. (Upcoming) Invited Colloquium, Department of Astronomy, Tsinghua University — 12/2019
28. Invited Colloquium, SOFIA Team, NASA Ames Research Center, Mountain View, CA — 10/2019
27. Conference Talk, The Cosmic Baryon Cycle: Impact on Galaxy Evolution, Seventh Annual GMT Community Science Meeting, Carlsbad, California — 09/2019
26. Conference Talk, What matter(s) between Galaxies: Unraveling the Knots in the Cosmic Web, Abbazia di Spineto, Italy — 06/2019
25. Invited Colloquium, University of Washington, Seattle — 05/2019
24. Invited Seminar Talk, Center for Astrophysics & Space Sciences, UC San Diego — 04/2019
23. Invited Colloquium, UC Santa Cruz, California — 02/2019
22. Lunch Talk, UC Berkeley, California — 09/2018
21. Dissertation Talk, 231st AAS Meeting, DC — 01/2018
20. Brown Bag Seminar, MIT, Boston, Massachusetts — 12/2017
19. Seminar, University of Chicago, Chicago, Illinois — 11/2017
18. UCSC FLASH Seminar, Santa Cruz, California — 11/2017
17. Caltech Tea Talk Seminar, Los Angeles, California — 11/2017
16. Invited Talk, Princeton Thunch Seminar, New Jersey — 09/2017
15. Conference Talk, In & Out. What Rules the Galaxy Baryon Cycle? Munich Institute for Astro- and Particle Physics, Munich, Germany — 07/2017
14. Conference Talk, What Matter(s) Around Galaxies: Resolving the Physics of the Circumgalactic Medium, Durham University, Durham, UK — 06/2017
13. Conference Talk, Life Cycle of Metals Throughout the Universe: Celebrating 50 Years of UV Astronomy, STScI Spring Symposium, Maryland — 04/2017
12. Invited Seminar, American Museum of Natural History, New York — 10/2016
11. Invited Talk, JILA Seminar, University of Colorado Boulder, Colorado — 02/2016
10. UCSC IMPS Winter Retreat, Santa Cruz, California — 02/2016
9. Conference Talk, Observational Evidence of Gas Accretion onto Galaxies, NRAO, Charlottesville, Virginia — 10/2015
8. Conference Talk, Life Cycle of Gas in Galaxies: A Local Perspective, ASTRON, Dwingeloo, Netherlands — 09/2015

7. Invited Talk, KIAA Seminar, Peking University, Beijing, China 09/2015
6. NAOC Seminar, Beijing, China 09/2015
5. Invited Talk, UCSC Seminar, Santa Cruz, CA 05/2015
4. Conference Talk, The Role of Hydrogen in the Evolution of Galaxies, Kuching, Malaysia 09/2014
3. Poster, AAS Winter Meeting, Maryland 01/2013
2. Third Korean-Chinese Informal Workgroup Meeting on Astro-dynamics for Stars and Galaxies, NAOC, Beijing, China 12/2011
1. Symposium of Astronomy Undergraduate Students, Kavli Institute for Astronomy and Astrophysics & Peking University, Beijing, China 09/2011

Schools & Internships

6. NAIC/NRAO Single-Dish & NAASC Interferometry Schools, 07/2015
   Green Bank Telescope, Charlottesville, Virginia
   Project: Measuring H I Masses of Shocked Post-Starburst Galaxies
   Advisor: Robert F. Minchin
5. Academic Writing for International Students, American Language Program, Fall 2013
   School of Professional Studies, Columbia University
4. Graduate Internship, Very Large Array, NRAO, Socorro, New Mexico Summer 2013
   Project: Modeling the Non-thermal Radio Emission of a Classical Nova V1723Aql
   Advisors: Michael Rupen, Amy Mioduszewski
3. English Pronunciation for International Teaching Fellows, Fall 2012 &
   School of Professional Studies, Columbia University Spring 2013
2. Observational Astronomy School, Kavli Institute for Astronomy & Astrophysics, 10/2011
   Peking University & National Astronomical Observatories,
   Chinese Academy of Sciences (NAOC), Beijing, China
1. Undergraduate Summer Internship, Shanghai Astronomical Observatory, China Summer 2011

Public Outreach

8. Lecturer at Berkeley Public Library, 06/2019
   Talk: *Galaxy's Climate System, when it rains, when it thunders, & when it dries up*
7. Lecturer at Astronomy on Tap in New York, 09/2017
   Talk: *Astronomy Version X*
6. Weekly Math Tutor for Kindergarteners from Low-income Families, 2017-2018
   Reading Team Math Program for Kindergarteners and 1st-grades, Bronx, New York
5. Experiment leader for Girls Science Day at Columbia University, 10/2016
   Drafted Astronomy Experiment Proposal for High-School Girl Visits
4. Volunteer/Telescope Operator for Columbia Public Lectures and Stargazing Nights 2012 - 2018
3. Lecturer for Columbia Public Lectures and Stargazing Nights, 03/2016
   Talk: *The Gas that Fills Invisible Space*
2. Mentor for 8th/9th-Grade Girls to Share Experience as a Woman in STEM, 07/2016, 07/2017
   GOALS for Girls Summer Intensive Program, Aviation and Space Science
   Mentorship Day, The Intrepid Sea, Air Space Museum, New York
1. Telescope Volunteer, World Science Festival, Brooklyn Bridge Park, New York 06/2016

Languages

福州话/Fuzhounese (Native), 汉语/Mandarin (Native), English (Fluent)

References

- Mary E. Putman
  mputman@astro.columbia.edu
  Associate Professor of Astronomy
  Department of Astronomy, Columbia University

- Jason Prochaska
  xavier@ucolick.org
  Professor of Astronomy & Astrophysics
  Department of Astronomy & Astrophysics, University of California, Santa Cruz

- Joshua E. G. Peek
  jegpeek@stsci.edu
  Associate Astronomer, Project Scientist
  Data Science Mission Office, Space Telescope Science Institute

- Jessica K. Werk
  jwerk@uw.edu
  Assistant Professor
  Department of Astronomy, University of Washington

- Daniel Weisz
  dan.weisz@berkeley.edu
  Assistant Professor
  Department of Astronomy, University of California, Berkeley

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Publication List

(My publication record can also be found on ADS)

FIRST-AUTHORED JOURNAL ARTICLES

6. **Y. Zheng**, & FOGGIE Collaboration. *Figuring Out Gas & Galaxies in Enzo (FOGGIE). III. The Mocky Way: Investigating Observational Biases in Studying Milky Way's Circumgalactic Medium*, 2019, to be submitted to ApJ.

5. **Y. Zheng**, M. E. Putman, A. Emerick, K. B. W. McQuinn, J. K. Werk, F. J. Lockman, B. D. Oppenheimer, A. J. Fox, E. N. Kirby, J. N. Burchett. *The Circumgalactic Medium of the Isolated Low-Mass Dwarf Galaxy WLM*, 2019, MNRAS, 490, 467Z.

4. **Y. Zheng**, J. E. G. Peek, M. E. Putman, & J. K. Werk. *Revealing the Milky Way's Hidden Circumgalactic Medium with the Cosmic Origins Spectrograph Quasar Database for Galactic Absorption Lines*, 2019, ApJ, 871, 35.

3. **Y. Zheng**, J. E. G. Peek, J. K. Werk, & M. E. Putman. *HST/COS Observations of Ionized Gas Accretion at the Disk-Halo Interface of M33*, 2017, ApJ, 834, 179Z.

2. **Y. Zheng**, J. K. Werk, J. E. G. Peek, & M. E. Putman. *The Discovery and Origin of A Very-High Velocity Cloud toward M33*, 2017, ApJ, 840, 65Z.

1. **Y. Zheng**, M. E. Putman, J. E. G. Peek, & M. R. Joung. *The Circumgalactic Medium of the Milky Way is Half Hidden*, 2015, ApJ, 807, 103Z.

CO-AUTHORED JOURNAL ARTICLES

9. J. K. Werk, K. H. R. Rubin, H. V. Bish, J. X. Prochaska, **Y. Zheng**, J. M. OMeara, D. Lenz, C. Hummels, & A. J. Deason. *The Nature of Ionized Gas in the Milky Way Galactic Fountain*, accepted for publication on ApJ, 2019, arXiv:1904.11014.

8. H. Bish, J. K. Werk, J. X. Prochaska, K. H. R. Rubin, J. O'Meara, **Y. Zheng**, & A. J. Deason, *Galactic Gas Flows from Halo to Disk: Tomography and Kinematics at the Milky Way's Disk-Halo Interface*, 2019, ApJ, 882, 76B.

7. J. X. Prochaska, & **Y. Zheng**, *Probing Galactic Halos with Fast Radio Bursts*, 2019, MNRAS, 485, 648P.

6. J. E. G. Peek, B. L. Babler, **Y. Zheng**, S. E. Clark, K. Douglas, E. J. Korpela, M. E. Putman, S. Stanimirovic, S. Gibson, C. Heiles. *The GALFA-HI Survey Data Release 2*, 2018, ApJS, 234, 2P.

5. T. Finzell, L. Chomiuk, B. Metzger, F. M. Walter, J.D. Linford, K. Mukai, T. Nelson, J. H. S. Weston, *Y. Zheng*, J. L. Sokoloski, et al. *A Detailed Observational Analysis of V1324 Sco, the Most Gamma-Ray-luminous Classical Nova to Date*, 2018, ApJ, 852, 108F.

4. J. H. S. Weston, J. L. Sokoloski, B. D. Metzger, **Y. Zheng**, L. Chomiuk, M. I. Krauss, J. D. Linford, T. Nelson, A. J. Mioduszewski, M. P. Rupen, T. Finzell, & K. Mukai. *Non-thermal Radio Emission from Colliding Flows in Classical Nova V1723 Aql*, 2016, MNRAS, 457, 887, 2016.

3. J. E. G. Peek, R. Bordoloi, H. Sana, J. Roman-Duval, J. Tumlinson, & **Y. Zheng**. *The First Distance Constraint on the Renegade High-Velocity Cloud Complex WD*, 2016, ApJ, 828L, 20P.

2. M. S. Xiang, X. W. Liu, H. B. Yuan, Z. Y. Huo, Y. Huang, **Y. Zheng**, H. W. Zhang, B. Q. Chen, H. H. Zhang, N. C. Sun, C. Wang, Y. H. Zhao, J. R. Shi, A. L. Luo, G. P. Li, Z. R. Bai, Y. Zhang, Y. H. Hou, H. L. Yuan, G. W. Li. *Relative Flux Calibration for the LAMOST Spectroscopic Survey of the Galactic Anticentre*, 2015, MNRAS, 448, 90-103.

1. R. de Grijs, C. Li, **Y. Zheng**, L. Deng, Y. Hu, M. B. N. Kouwenhoven, & J. E. Wicker. *Gravitational Conundrum? Dynamical Mass Segregation versus Disruption of Binary Stars in Dense Stellar Systems*, 2013, ApJ, 765, 4D, 2013.