Yong Zheng

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RESEARCH INTERESTS

Galaxy Evolution, Cosmic Baryon Cycle, Circumgalactic Medium, Spectral Line Analysis
Tools: H I 21cm/Optical/Ultraviolet Spectroscopy, Cosmological Hydrodynamic Simulations

EDUCATION & PROFESSIONAL APPOINTMENTS

4. Miller Postdoctoral Fellow, Miller Institute for Basic Research in Science, Department of Astronomy, University of California, Berkeley — 2018-2021
3. Ph.D., Astronomy, Columbia University, New York — 2018
2. M.A. & M.Phil., Astrophysics, Columbia University, New York — 2014
1. B.S., Astronomy, Peking University, Beijing, China — 2012

PROPOSALS & GRANTS

8. CoI, "The Circumgalactic Medium at the Lowest Mass End", Hubble Space Telescope, Cycle 28, GO 16301, 43 Orbits — 06/2020
7. CoI, "What Holds Up the CGM?", Hubble Space Telescope, Cycle 28, Program AR-16140 — 06/2020
6. PI, "Probing M33's Multiphase Disk-Halo Interface with Resolved Kinematics", W. M. Keck Observatory, DEIMOS, 2019B, U061, Two Half Nights — 09/2019
5. CoI, "METAL-Z: Metal Evolution, Transport, and Abundance at Low Metallicity", Hubble Space Telescope, Cycle 27, GO 15880, 77 Orbits — 07/2019
4. PI, "Observations of H I toward the Halo of a Dwarf Galaxy", Green Bank Telescope, 18B-376 — 11/2018
3. CoI, "QuaStar: The First Unobscured View of the Milky Way's Circumgalactic Medium", Hubble Space Telescope, Cycle 26, GO 15656, 75 Orbits — 10/2018
2. CoI, "Constraining the Origin of A Very High-Velocity Cloud Toward M33 with GBT", Green Bank Telescope, 18B-331 — 02/2018
1. PI, "Mapping Gas Flows from the Disk to the Circumgalactic Medium", Hubble Space Telescope, Cycle 25, GO 15156, 32 Orbits — 06/2017

INVITED TALKS

17. Colloquium at Carnegie Observatories, Pasadena, USA — 11/2020
16. Seminar at Galaxy Journal Club, Space Telescope Science Institute, USA — 07/2020
15. Seminar at Galread Extragalactic Discussion Group, Princeton University, USA — 06/2020
14. Conference Talk at "The Circumgalactic Medium around Galaxies: When Baryons Invest Halos", Institut Astrophysique de Paris, France — 06/2020
13. Colloquium at Department of Astronomy, Xiamen University, China — 12/2019
12. Seminar at Department of Astronomy, Tsinghua University, China — 12/2019
11. Colloquium at NASA Ames Research Center, SOFIA Team, USA — 10/2019
10. Colloquium at Department of Astronomy, University of Washington, Seattle, USA — 05/2019
9. Seminar at Center for Astrophysics & Space Sciences, University of California San Diego, USA — 04/2019

8. Colloquium at Department of Astronomy and Astrophysics, University of California Santa Cruz, USA 02/2019
7. Seminar at Princeton Thunch Seminar, Princeton University, USA 09/2017
6. Seminar at American Museum of Natural History, USA 10/2016
5. Talk at the Arthur M. Wolfe Symposium in Astrophysics, Department of Astronomy and Astrophysics, University of California Santa Cruz 02/2016
4. Seminar at Astrophysical & Planetary Sciences, University of Colorado Boulder, USA 02/2016
3. Seminar at Kavli Institute for Astronomy & Astrophysics, Peking University, China 09/2015
2. Seminar at National Astronomy Observatory of China, China 09/2015
1. Seminar at Department of Astronomy and Astrophysics, University of California Santa Cruz, USA 05/2015

CONTRIBUTED TALKS & CONFERENCES

18. Conference Talk, "Spring Symposium: The Local Group Assembly and Evolution", Space Telescope Science Institute, USA 09/2020
17. Highlighted Conference Talk, "The Cosmic Baryon Cycle: Impact on Galaxy Evolution", 7th Annual GMT Community Science Meeting, USA 09/2019
16. Conference Talk, "What Matter(s) Between Galaxies: Unraveling the Knots in the Cosmic Web", Abbazia di Spineto, Italy 06/2019
15. Lunch Talk at Department of Astronomy, University of California Berkeley, USA 09/2018
14. Dissertation Talk at 231st AAS Meeting, USA 01/2018
13. Seminar at Department of Physics, Massachusetts Institute of Technology, USA 12/2017
12. Seminar at Department of Astronomy & Astrophysics, University of Chicago, USA 11/2017
11. Seminar at Department of Astronomy and Astrophysics, University of California Santa Cruz, USA 11/2017
10. Seminar at Department of Astronomy, California Institute of Technology, USA 11/2017
9. Conference Talk, "In & Out. What Rules the Galaxy Baryon Cycle?" Munich Institute for Astro- and Particle Physics, Germany 07/2017
8. Conference Talk, "What Matter(s) Around Galaxies: Resolving the Physics of the Circumgalactic Medium", Durham University, UK 06/2017
7. Conference Talk, "Life Cycle of Metals Throughout the Universe: Celebrating 50 Years of UV Astronomy", Space Telescope Science Institute, USA 04/2017
6. Conference Talk, "Observational Evidence of Gas Accretion onto Galaxies", National Radio Astronomy Observatory, USA 10/2015
5. Conference Talk, "Life Cycle of Gas in Galaxies: A Local Perspective", ASTRON, Dwingeloo, Netherlands 09/2015
4. Conference Talk, "The Role of Hydrogen in the Evolution of Galaxies", Malaysia 09/2014
3. Poster at 221st AAS Winter Meeting, USA 01/2013
2. Conference Talk, "Third Korean-Chinese Informal Workgroup on Astro-dynamics for Stars and Galaxies", National Astronomy Observatory of China, China 12/2011
1. Conference Talk, "Symposium of Astronomy Undergraduate Students", Kavli Institute for Astronomy and Astrophysics, Peking University, China 09/2011

ADVISING & TEACHING SERVICE

7. Research Advisor of Undergraduate R. Zhu, University of California Berkeley 2019-2020
6. Research Co-advisor of Undergraduate H. Cook, Columbia University 2018-2019
5. Research Co-advisor of Undergraduate A. Johnson, Columbia University Spring 2018
4. Research Co-advisor of Undergraduate L. Li, Columbia University Summer 2015

3. Lab Observing Instructor, Astronomy Labs I & II, Columbia University 2014-2015
2. Lab Instructor, Stars, Galaxies and Cosmology (W1904), Columbia University Spring 2014
1. Lab Instructor, Earth, Moon, and Planets (W1903), Columbia University Fall 2013

PEER REVIEW SERVICE

5. Referee for Journal Nature Astronomy
4. Referee for Journal Monthly Notices of the Royal Astronomical Society
3. Panelist for NASA Astrophysics Data Analysis Program
2. Reviewer for Future Investigators in NASA Earth and Space Science and Technology Program
1. Reviewer for China Telescope Access Program

CONTRIBUTION TO DIVERSITY, EQUITY, & INCLUSION

15. Co-Leader of the Miller Diversity, Equity, & Inclusion Working Group, Miller Institute for Basic Research in Science, University of California Berkeley — Fall 2020 - Present
14. Initiator of the "Meet a Miller Fellow" Outreach Program to Connect High-School Students with Scientists at Miller Institute — Fall 2020 - Present
13. Member of the Astronomy Postdoc Team to Dismantle Anti-Blackness Department of Astronomy, University of California Berkeley — Fall 2020 - Present
13. Science Ambassador for the Adopt-A-Class Program to Interact with Students from a K5 Classroom in Bay Area, California — Fall 2020
12. Invited Guest Speaker for the Mount Tam Astronomy Program, California — 08/2020
11. Guest Speaker for the Berkeley Public Library, California — 06/2019
10. Mentor for Society of Women in the Physical Sciences University of California Berkeley — Fall 2018
9. Member of the Reading Team Math Program in Bronx, New York to Teach Math to Kindergarteners from Low-Income Families Every Friday — 2017-2018
8. Guest Speaker for Astronomy on Tap in New York — 09/2017
7. Experiment Leader for Girls Science Day at Columbia University — 10/2016
6. Mentor for GOALS for Girls Summer Intensive Program at The Intrepid Museum — 2016, 2017
5. Guest Speaker at Columbia Public Lectures and Stargazing Nights, New York — 03/2016
4. Telescope Volunteer, World Science Festival, Brooklyn Bridge Park, New York — 06/2016
3. Mentor for Astronomy Undergraduate Mentoring Program, Columbia University — 2015-2017
2. Mentor for Astronomy Peer Mentoring Program, Columbia University — 2015-2017
1. Volunteer for Columbia Public Lectures and Stargazing Nights, New York — 2012 - 2018

REFERENCES

- Mary E. Putman
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  Professor of Astronomy
  Department of Astronomy, Columbia University

- Jason X. Prochaska
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  Professor of Astronomy Astrophysics
  Department of Astronomy Astrophysics, University of California, Santa Cruz

- Daniel Weisz
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Department of Astronomy, University of California, Berkeley

- Jessica K. Werk
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  Assistant Professor
  Department of Astronomy, University of Washington

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

Publication List

FIRST-AUTHORED JOURNAL ARTICLES

7. **Y. Zheng**, A. Emerick, M. E. Putman, J. K. Werk, E. N. Kirby, J. Peek, *Characterizing the Circumgalactic Medium of the Lowest-Mass Galaxies: A Case Study of IC 1613*, 2020, ApJ, 905, 133

6. **Y. Zheng**, M. S. Peeples, B. W. O'Shea, R. C. Simons, C. Lochhass, L. Corlies, J. Tumlinson, B. Smith, R. Augustin, *Figuring Out Gas & Galaxies in Enzo (FOGGIE). III. The Mocky Way: Investigating Biases in Observing the Milky Way's Circumgalactic Medium*, 2020, ApJ, 896, 143Z.

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.

SECOND/THIRD-AUTHORED JOURNAL ARTICLES

4. M. E. Putman, **Y. Zheng**, A. M. Price-Whelan, J. Grcevich, E. Tollerud, J. E. G. Peek, *The Gas Content and Stripping of Local Group Dwarf Galaxies*, submitted to ApJ.

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

2. 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.

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.

OTHER CO-AUTHORED JOURNAL ARTICLES

9. H.V. Bish; J.K. Werk; J. Peek; **Y. Zheng**; M. Putman, *The QuaStar Survey: Detecting Hidden Low-Velocity Gas in the Milky Way's Circumgalactic Medium*, arxiv:2010.03610

8. R. Simons, M. Peeples, J. Tumlinson, B. O'Shea, B. Smith, L. Corlies, C. Lochhaas, **Y. Zheng**, R. Augustin, D. Prasad, G. Snyder, E. Tollerud, *Figuring Out Gas & Galaxies In Enzo (FOGGIE). IV. The Stochasticity of Ram Pressure Stripping in Galactic Halos*, arXiv:2004.14394.

7. Y. Li, M. Gendron-Marsolais, I. Zhuravleva, S. Xu, A. Simionescu, G. Tremblay, C. Lochhass, G. Bryan, E. Quataert, N. Murray, A. Boselli, J. Hlavacek-Larrondo, **Y. Zheng**, M. Fossati, M. Li, E. Emsellem, M. Sarzi, L. Arzamasskiy, T. Ethan, *Direct Detection of Black Hole-driven Turbulence in the Centers of Galaxy Clusters*, 2019, ApJ, 889, 1.

6. 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*, 2019, ApJ, 887, 89W.

5. 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.

4. 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.

3. 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.

2. 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.

1. 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.