

# Li, Yuan

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U.S. Citizen

## Education

### **Columbia University in the City of New York**

Degree: Ph.D. 2014. Major: Astronomy and Astrophysics. Advisor: Greg L. Bryan

### **Purple Mountain Observatory, Chinese Academy of Sciences**

Degree: M.S. 2008. Major: Astronomy and Astrophysics. Advisor: Daming Wei

### **Nanjing University, China**

Degree: B.S. 2005. Major: Atmospheric Science

## Professional Experience

Assistant Professor, University of North Texas (2020-present).

TAC Postdoc Fellow, University of California, Berkeley (2018-2020).

Flatiron Research Fellow, Center for Computational Astrophysics, Flatiron Institute (2017-2018).

Research Fellow, University of Michigan, Department of Astronomy (2014-2017).

## Research Interests

Galaxy clusters and massive galaxies; black hole accretion and AGN feedback; star formation and galaxy evolution; the interstellar medium, the circum-galactic medium and the intra-cluster medium.

## Grants and Awards

PI on NSF CAREER: The Faculty Early Career Development (CAREER) Program “CAREER: Modeling the Evolution of Massive Galaxies with Enzo-E” (AST-2339916), \$601,796 (2024-2029).

PI on NASA Astrophysics Theory Program grant 21-ATP21-0072 “Connecting Galaxies and Supermassive Black Holes: Meso-scale Simulations of Multiphase Accretion Flows”, \$326,875 (2022-2025).

PI on NASA’s Chandra Observatory theory grant “Probing Cluster Plasma Physics with Simulations of Jellyfish Tails” (Cycle 24, Proposal 24800110), \$55,000 (2023-2024).

PI on NSF Partnerships in Astronomy & Astrophysics Research and Education (PAARE) grant AST-2219686 “Collaborative Research: Building a Team for EXtragalactic ASTrophysics (TEXAS) in the Dallas-Fort Worth Metroplex”, \$214,457 (2022-2024).

PI on NSF Astronomy & Astrophysics grant “Collaborative Research: A Systematic and Comprehensive Study of Black Hole-Driven Turbulence in Massive Galactic Systems” (AST-2107735), \$282,654 (2021-2024).

Co-PI on UNT College of Science Seed Grant “Characterizing the Warm Envelop Surrounding the Milky Way Disk With Machine Learning”, \$10,000 (2021).

PI on UNT College of Science Seed Grant “Turbulence in Star Forming Clouds”, \$9,000 (2021).

PI on NASA’s Chandra Observatory theory grant “The Role of Magnetic Fields in Cool-Core Clusters” (Cycle 19, Proposal 19800492), \$60,000 (2018).

## Supercomputing Awards

PI on “Meso-scale Simulations Of Multiphase Accretion Flows”.

Resource Name: NASA Pleiades. Proposal Number: SMD-21-70386558. Awarded Amount: 125,000.00 SUs. Start Date: 2022-07-01; End Date: 2025-06-30.

PI on “Modeling Supermassive Black Hole Feeding and Feedback in Massive Galaxies and Galaxy Clusters”.

Resource Name: XSEDE Purdue Anvil. Proposal Number: PHY220053 New. Awarded Amount: 2,235,000.0 SUs. Start Date: 2022-07-01; End Date: 2023-12-31.

Co-I on “Numerical Self-Similar Solutions of Relativistic Jets and their Interaction with a Surrounding Medium”.

Resource Name: TACC Dell/Intel Knights Landing, Skylake System. Proposal Number: AST190033. Awarded Amount: 23,774.00 SUs. Start Date: 2019-10-01; End Date: 2020-09-30.

PI on “The Role of Magnetic Fields in Cool-core Clusters”.

Resource Name: NASA Pleiades. Proposal Number: HEC-SMD-19-2293. Awarded Amount: 150,000.00 SUs. Start Date: 2019-03-01; End Date: 2020-02-29.

PI on “Modeling Supermassive Black Hole Feedback in Massive Elliptical Galaxies”.

Resource Name: XSEDE LSU Cluster (superMIC). Proposal Number: TG-AST150041. Awarded Amount: 494,770.44 SUs. Start Date: 2017-01-01; End Date: 2017-12-31.

PI on “Modeling Supermassive Black Hole Feedback in Elliptical Galaxies”.

Resource Name: XSEDE LSU Cluster (superMIC). Proposal Number: TG-AST150041. Awarded Amount: 840,000.00 SUs. Start Date: 2015-10-01; End Date: 2016-09-30.

## Observation Proposals

Co-I on the JWST program 5354 “Mapping a Black Hole Accretion Flow with JWST/NIRSpec”.

Co-I on the JWST program 4094 “A Galaxy-Scale Fountain of Multiphase Gas Pumped by a Black Hole: The power of JWST combined with ALMA, MUSE, Chandra, and HST”.

Co-I on the MEGARA program 66-GTC59-A/23B & 66-GTC59-B/23B “Black Hole-Driven Motion of the Filaments in M87”.

Co-I on the ALMA program 2017.1.01205.S “The Role and Origin of Dust in a Feedback-Induced BCG Starburst”.

Co-I on the ALMA program 2016.1.00784.S “Tracking the Origin of Dust and Molecular Gas in an Extreme Feedback-Induced BCG Starburst”.

## Teaching

### UNT:

Physics 5610 “Selected Topics in Modern Physics: Frontiers of Astrophysics”<sup>†1</sup>, Spring 2023.

Physics 1062 “Stars and The Universe”, Fall 2022.

Physics 4980 “Galaxies and Cosmology”<sup>†</sup>, Fall 2021 & Fall 2023.

Physics 1210 “Conceptual Physics”, Spring 2021.

### Columbia:

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<sup>1</sup>course developed by Yuan Li

Head TA of Department of Astronomy and Astrophysics, Columbia University, 2011-2012.

C1903 (Astronomy Lab I) “Earth, Moon & Planets” & C1904 (Astronomy Lab II) “Beyond the Solar System”, Columbia University, 2008-2011.

## Students Advised/Co-advised

Jake Reinheimer, Ph.D. student, UNT, 2022-present.

Trung Ha, Ph.D. student, UNT, 2020-present.

Leigh Parrott, TEXAS Post-baccalaureate Bridge Fellow, UNT, 2023-present.

Jon Red, undergraduate student, UNT, 2023-present.

Blake Rice, undergraduate student, UNT, 2023-present.

Sampadaa Prakash, Texas Academy of Mathematics and Science (TAMS) student, UNT, 2022-present.

Brandon Mathews, Ph.D. student (co-advised), UNT, 2022-2023.

Mirielle Caradonna, undergraduate student, UNT, 2020-2022.

Violet Forbes, undergraduate student, UNT, 2022.

Alia Naciri, undergraduate student, UNT, 2020-2022.

Jeremy Gingrich, Ph.D. student, UNT, 2020-2021.

Daniel Rangel, undergraduate student, UNT, 2020.

Michael Jennings, undergraduate student, UC Berkeley, 2019-2021.

Richard Pan, undergraduate student, UC Berkeley, 2019-2020.

Brockton Stover, undergraduate student, UC Berkeley, 2019-2021.

Yihuan Di, Ph.D. student (co-advised), Shanghai Observatory, 2018-2023.

Rachel Frisbie, Ph.D. student (co-advised), Michigan State University, 2018-2020.

Corey Brummel-Smith, Ph.D. student (co-advised), Georgia Institute of Technology, 2018-2019.

Cassandra Lochhaas, Ph.D. student (co-advised), Ohio State University, 2018-2019.

Yu Qiu, Ph.D. student (co-advised), Georgia Institute of Technology, 2016-2020.

Chaoran Wang, Ph.D. student (co-advised), University of Michigan, 2015-2019.

## Selected Outreach

Volunteer and lecturer of Astronomy Talks at Denton Public Libraries, 2023-present.

Co-organizer of the UNT eclipse event, 2023.

Invited speaker at the Boise State First Friday Astronomy, 2022.

JWST Subject Matter Expert for NASA’s Webb Space Telescope Community Events, 2021.

Speaker of the Ask an Astronomer streaming program at UNT, 2020-2021.

Volunteer and lecturer of Astronomy Talks at Berkeley Public Library, 2019.

Organizer of the Astronomy Public Outreach Program “Astronomy on Tap” in Ann Arbor, 2015-2016.

Volunteer and lecturer of Columbia Astronomy Public Outreach Program, including “Public Lectures and Stargazing Nights”, “Family Astro”, and “Sidewalk Astronomy in Harlem”, 2008-2014.

Lecturer of Middle School Outreach Program in New York, 2011-2014.

## Scientific Activities

Referee for the *Astrophysical Journal*, *Monthly Notices of the Royal Astronomical Society*, and *Astronomy & Astrophysics*.

Developer and contributor of the *Enzo* adaptive mesh refinement simulation code (<http://enzo-project.org>) and the analysis and visualization tool *yt* (<http://yt-project.org>).

Lead PI of the “Building a Team for EXtragalactic ASTrophysics (TEXAS)” program which establishes a partnership between UNT and UT Dallas and includes a post-baccalaureate Bridge Program to broaden participation in astronomy and astrophysics (2022-present).

Main organizer of the KITP workshop Turbulence in Astrophysical Environments (2024).

Invited panelist on the Chandra panel review (2022).

Invited panelist on the NASA ATP panel review (2021 & 2023).

Invited panelist on the NSF AAG panel review (2017, 2019, & 2023).

Member of the scientific organizing committee of the COSPAR 2020 meeting: probing energy extraction from supermassive black holes (2019).

Organizer of the CCA Cluster Workshop (May 2018).

## Publications

### Journal Articles:

- [1] *High-Spectral Resolution Observations of the Optical Filamentary Nebula in NGC 1275*, Vigneron, B., Hlavacek-Larrondo, J., Rhea, C. L., Gendron-Marsolais, M.-L., Lim, J., Reinheimer\*<sup>2</sup>, J., **Li, Yuan**, Drissen, L., Bryan, G. L., Donahue, M., Edge, A., Fabian, A., Hamer, S., Martin, T., McDonald, M., McNamara, B., Richard-Lafferriere, A., Rousseau-Nepton, L., Voit, G. M., Webb, T., and Werner, N. 2023, arXiv e-prints, arXiv:2311.16247
- [2] *An Atlas of Gas Motions in the TNG-Cluster Simulation: from Cluster Cores to the Outskirts*, Ayromlou, M., Nelson, D., Pillepich, A., Rohr, E., Truong, N., **Li, Yuan**, Simionescu, A., Lehle, K., and Lee, W. 2023, arXiv e-prints, arXiv:2311.06339
- [3] *Active galactic nucleus jet feedback in hydrostatic haloes*, Weinberger, R., Su, K.-Y., Ehlert, K., Pfrommer, C., Hernquist, L., Bryan, G. L., Springel, V., **Li, Yuan**, Burkhardt, B., Choi, E., and Faucher-Giguère, C.-A. 2023, MNRAS, 523, 1104
- [4] *ARKENSTONE - I. A novel method for robustly capturing high specific energy outflows in cosmological simulations*, Smith, M. C., Fielding, D. B., Bryan, G. L., Kim, C.-G., Ostriker, E. C., Somerville, R. S., Stern, J., Su, K.-Y., Weinberger, R., Hu, C.-Y., Forbes, J. C., Hernquist, L., Burkhardt, B., and **Li, Yuan** 2024, MNRAS, 527, 1216

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<sup>2</sup>student or postdoc mentored by Yuan Li

- [5] *The formation channels of multiphase gas in nearby early-type galaxies*,  
Eskenasy, R., Olivares, V., Su, Y., and **Li, Yuan** 2024, MNRAS, 527, 1317
- [6] *Black hole feeding and feedback in a compact galaxy*,  
Di, Y.\*, **Li, Y.**, Yuan, F., Shi, F., and Caradonna, M.\* 2023, MNRAS, 523, 1641
- [7] *Code Comparison in Galaxy-scale Simulations with Resolved Supernova Feedback: Lagrangian versus Eulerian Methods*,  
Hu, C.-Y., Smith, M. C., Teyssier, R., Bryan, G. L., Verbeke, R., Emerick, A., Somerville, R. S., Burkhardt, B., **Li, Yuan**, Forbes, J. C., and Starckenburg, T. 2023, ApJ, 950, 132
- [8] *Scientific objectives of the Hot Universe Baryon Surveyor (HUBS) mission*,  
Bregman, J., Cen, R., Chen, Y., Cui, W., Fang, T., Guo, F., Hodges-Kluck, E., Huang, R., Ho, L. C., Ji, L., Ji, S., Kang, X., Lai, X., Li, H., Li, J., Li, M., Li, X., **Li, Yuan**, Li, Z., Liang, G., Liu, H., Liu, W., Lu, F., Mao, J., Ponti, G., Qu, Z., Shan, C., Shao, L., Shi, F., Shu, X., Sun, L., Sun, M., Tong, H., Wang, J., Wang, J., Wang, Q. D., Wang, S., Wang, T., Wang, W., Wang, Z., Xu, D., Xu, H., Xu, H., Xu, R., Xu, X., Xue, Y., Yang, H., Yuan, F., Zhang, S., Zhang, Y., Zhang, Z., Zhao, Y., Zhou, E., and Zhou, P. 2023, Science China Physics, Mechanics, and Astronomy, 66, 299513
- [9] *The nature of the motions of multiphase filaments in the centers of galaxy clusters*,  
Ganguly, S.\*, **Li, Yuan**, Olivares, V., Su, Y., Combes, F., Prakash, S.\*, Hamer, S., Guillard, P., and Ha, T.\* 2023, Frontiers in Astronomy and Space Sciences, 10, 1138613
- [10] *Turbulence in the tail of a jellyfish galaxy*,  
**Li, Yuan**, Luo, R., Fossati, M., Sun, M., and Jáchym, P. 2023, MNRAS, 521, 4785
- [11] *Tracing the kinematics of the whole ram-pressure-stripped tails in ESO 137-001*,  
Luo, R., Sun, M., Jáchym, P., Waldron, W., Fossati, M., Fumagalli, M., Boselli, A., Combes, F., Kenney, J. D. P., **Li, Y.**, and Gronke, M. 2023, MNRAS, 521, 6266
- [12] *Numerical Investigation of Dynamical and Morphological Trends in Relativistic Jets*,  
Mandal, S., Duffell, P. C., and **Li, Yuan** 2022, ApJ, 935, 42
- [13] *Supermassive black holes in cosmological simulations - II: the AGN population and predictions for upcoming X-ray missions*,  
Habouzit, M., Somerville, R. S., **Li, Yuan**, Genel, S., Aird, J., Anglés-Alcázar, D., Davé, R., Georgiev, I. Y., McAlpine, S., Rosas-Guevara, Y., Dubois, Y., Nelson, D., Banados, E., Hernquist, L., Peirani, S., and Vogelsberger, M. 2022, MNRAS, 509, 3015
- [14] *Turbulence in Milky Way Star-forming Regions Traced by Young Stars and Gas*,  
Ha, T.\*, **Li, Yuan**, Kounkel, M., Xu, S., Li, H., and Zheng, Y. 2022, ApJ, 934, 7
- [15] *Measuring Turbulence with Young Stars in the Orion Complex*,  
Ha, T.\*, **Li, Yuan**, Xu, S., Kounkel, M., and Li, H. 2021, ApJL, 907, L40
- [16] *Supermassive black holes in cosmological simulations I:  $M_{BH} - M_*$  relation and black hole mass function*,  
Habouzit, M., **Li, Yuan**, Somerville, R. S., Genel, S., Pillepich, A., Volonteri, M., Davé, R., Rosas-Guevara, Y., McAlpine, S., Peirani, S., Hernquist, L., Anglés-Alcázar, D., Reines, A., Bower, R., Dubois, Y., Nelson, D., Pichon, C., and Vogelsberger, M. 2021, MNRAS, 503, 1940
- [17] *Thermal Instability and Multiphase Gas in the Simulated Interstellar Medium with Conduction, Viscosity and Magnetic Fields*,  
Jennings, R. M.\* and **Li, Yuan**, 2021, MNRAS, 505, 5238
- [18] *The formation of dusty cold gas filaments from galaxy cluster simulations*,  
Qiu, Y.\*, Bogdanović, T., **Li, Yuan**, McDonald, M., and McNamara, B. R. 2020, Nature Astronomy, 4, 900

- [19] *A Black Hole Feedback Valve in Massive Galaxies*,  
 Voit, G. M., Bryan, G. L., Prasad, D., Frisbie, R., **Li, Yuan**, Donahue, M., O’Shea, B. W., Sun, M., and Werner, N. 2020, ApJ, 899, 70
- [20] *Correlations between Black Holes and Host Galaxies in the Illustris and IllustrisTNG Simulations*,  
**Li, Yuan**, Habouzit, M., Genel, S., Somerville, R., Terrazas, B. A., Bell, E. F., Pillepich, A., Nelson, D., Weinberger, R., Rodriguez-Gomez, V., Ma, C.-P., Pakmor, R., Hernquist, L., and Vogelsberger, M. 2020, ApJ, 895, 102
- [21] *Direct Detection of Black Hole-driven Turbulence in the Centers of Galaxy Clusters*,  
**Li, Yuan**, Gendron-Marsolais, M.-L., Zhuravleva, I., Xu, S., Simionescu, A., Tremblay, G. R., Lochhaas, C., Bryan, G. L., Quataert, E., Murray, N. W., Boselli, A., Hlavacek-Larrondo, J., Zheng, Y., Fossati, M., Li, M., Emsellem, E., Sarzi, M., Arzamasov, L., and Vishniac, E. T. 2020, ApJL, 889, L1
- [22] *First results from SMAUG: Uncovering the Origin of the Multiphase Circumgalactic Medium with a Comparative Analysis of Idealized and Cosmological Simulations*,  
 Fielding, D. B., Tonnesen, S., DeFelippis, D., Li, M., Su, K.-Y., Bryan, G. L., Kim, C.-G., Forbes, J. C., Somerville, R. S., Battaglia, N., Schneider, E. E., **Li, Yuan**, Choi, E., Hayward, C. C., and Hernquist, L. 2020, arXiv e-prints, arXiv:2006.16316
- [23] *Probing Magnetic Field Morphology in Galaxy Clusters with the Gradient Technique*,  
 Hu, Y. \*, Lazarian, A., **Li, Yuan**, Zhuravleva, I., and Gendron-Marsolais, M.-L. 2020, arXiv e-prints, arXiv:2007.06219
- [24] *Properties of the Hot Ambient Medium of Early-type Galaxies Hosting Powerful Radio Sources*,  
 Frisbie, R. L. S. \*, Donahue, M., Voit, G. M., Connor, T., **Li, Yuan**, Sun, M., Lakhchaura, K., Werner, N., and Grossova, R. 2020, ApJ, 899, 159
- [25] *Properties of the Simulated Circumgalactic Medium*,  
 Lochhaas, C. \*, Bryan, G. L., **Li, Yuan**, Li, M., and Fielding, D. 2020, MNRAS, 324
- [26] *The Impact of Type Ia Supernovae in Quiescent Galaxies. I. Formation of the Multiphase Interstellar Medium*,  
 Li, M., **Li, Yuan**, Bryan, G. L., Ostriker, E. C., and Quataert, E. 2020, ApJ, 894, 44
- [27] *The Impact of Type Ia Supernovae in Quiescent Galaxies. II. Energetics and Turbulence*,  
 Li, M., **Li, Yuan**, Bryan, G. L., Ostriker, E. C., and Quataert, E. 2020, ApJ, 898, 23
- [28] *The relationship between black hole mass and galaxy properties: examining the black hole feedback model in IllustrisTNG*,  
 Terrazas, B. A., Bell, E. F., Pillepich, A., Nelson, D., Somerville, R. S., Genel, S., Weinberger, R., Habouzit, M., **Li, Yuan**, Hernquist, L., and Vogelsberger, M. 2020, MNRAS, 493, 1888
- [29] *ENZO: An Adaptive Mesh Refinement Code for Astrophysics (Version 2.6)*,  
 Brummel-Smith, C. \*, Bryan, G., Butsky, I., Corlies, L., Emerick, A., Forbes, J., Fujimoto, Y., Goldbaum, N., Grete, P., Hummels, C., Kim, J.-h., Koh, D., Li, M., **Li, Yuan**, Li, X., O’Shea, B., Peeples, M., Regan, J., Salem, M., Schmidt, W., Simpson, C., Smith, B., Tumlinson, J., Turk, M., Wise, J., Abel, T., Bordner, J., Cen, R., Collins, D., Crosby, B., Edelman, P., Hahn, O., Harkness, R., Harper-Clark, E., Kong, S., Kritsuk, A., Kuhlen, M., Larrue, J., Lee, E., Meece, G., Norman, M., Oishi, J., Paschos, P., Peruta, C., Razoumov, A., Reynolds, D., Silvia, D., Skillman, S., Skory, S., So, G., Tasker, E., Wagner, R., Wang, P., Xu, H., and Zhao, F. 2019, The Journal of Open Source Software, 4, 1636
- [30] *AGN feedback and multiphase gas in giant elliptical galaxies*,  
 Wang, C. \*, **Li, Yuan**, and Ruszkowski, M. 2019, MNRAS, 482, 3576
- [31] *Clocking the formation of today’s largest galaxies: Wide field integral spectroscopy of Brightest Cluster Galaxies and their surroundings*,  
 Edwards, L. O. V., Salinas, M., Stanley, S., West, P. E. H., Trierweiler, I., Alpert, H., Coelho, P., Koppaka, S., Tremblay, G. R., Martel, H., and **Li, Yuan** 2019, MNRAS, 2328

- [32] *The Dust and Molecular Gas in the Brightest Cluster Galaxy in MACS 1931.8-2635*, Fogarty, K., Postman, M., **Li, Yuan**, Dannerbauer, H., Liu, H. B., Donahue, M., Ziegler, B., Koekemoer, A., and Frye, B. 2019, ApJ, 879, 103
- [33] *The Interplay of Kinetic and Radiative Feedback in Galaxy Clusters*, Qiu, Y.\*, Bogdanović, T., **Li, Yuan**, Park, K., and Wise, J. H. 2019, ApJ, 877, 47
- [34] *Using H $\alpha$  Filaments to Probe Active Galactic Nuclei Feedback in Galaxy Clusters*, Qiu, Y.\*, Bogdanović, T., **Li, Yuan**, and McDonald, M. 2019, ApJL, 872, L11
- [35] *The Fate of Asymptotic Giant Branch Winds in Massive Galaxies and the Intracluster Medium*, **Li, Yuan**, Bryan, G. L., and Quataert, E. 2019, ApJ, 887, 41
- [36] *A Galaxy-scale Fountain of Cold Molecular Gas Pumped by a Black Hole*, Tremblay, G. R., Combes, F., Oonk, J. B. R., Russell, H. R., McDonald, M. A., Gaspari, M., Husemann, B., Nulsen, P. E. J., McNamara, B. R., Hamer, S. L., O’Dea, C. P., Baum, S. A., Davis, T. A., Donahue, M., Voit, G. M., Edge, A. C., Blanton, E. L., Bremer, M. N., Bulbul, E., Clarke, T. E., David, L. P., Edwards, L. O. V., Eggerman, D., Fabian, A. C., Forman, W., Jones, C., Kerman, N., Kraft, R. P., **Li, Yuan**, Powell, M., Randall, S. W., Salomé, P., Simionescu, A., Su, Y., Sun, M., Urry, C. M., Vantyghem, A. N., Wilkes, B. J., and Zuhone, J. A. 2018, ApJ, 865, 13
- [37] *The Effects of Ram Pressure on the Cold Clouds in the Centers of Galaxy Clusters*, **Li, Yuan**, Ruszkowski, M., and Tremblay, G. 2018, ApJ, 854, 91
- [38] *A Global Model for Circumgalactic and Cluster-core Precipitation*, Voit, G. M., Meece, G., **Li, Yuan**, O’Shea, B. W., Bryan, G. L., and Donahue, M. 2017, ApJ, 845, 80
- [39] *AGN Heating in Simulated Cool-core Clusters*, **Li, Yuan**, Ruszkowski, M., and Bryan, G. L. 2017, ApJ, 847, 106
- [40] *Cold, clumpy accretion onto an active supermassive black hole*, Tremblay, G. R., Oonk, J. B. R., Combes, F., Salomé, P., O’Dea, C. P., Baum, S. A., Voit, G. M., Donahue, M., McNamara, B. R., Davis, T. A., McDonald, M. A., Edge, A. C., Clarke, T. E., Galván-Madrid, R., Bremer, M. N., Edwards, L. O. V., Fabian, A. C., Hamer, S., **Li, Yuan**, Maury, A., Russell, H. R., Quillen, A. C., Urry, C. M., Sanders, J. S., and Wise, M. W. 2016, Nature, 534, 218
- [41] *Cooling, AGN Feedback, and Star Formation in Simulated Cool-core Galaxy Clusters*, **Li, Yuan**, Bryan, G. L., Ruszkowski, M., Voit, G. M., O’Shea, B. W., and Donahue, M. 2015, ApJ, 811, 73
- [42] *Far-ultraviolet morphology of star-forming filaments in cool core brightest cluster galaxies*, Tremblay, G. R., O’Dea, C. P., Baum, S. A., Mittal, R., McDonald, M. A., Combes, F., **Li, Yuan**, McNamara, B. R., Bremer, M. N., Clarke, T. E., Donahue, M., Edge, A. C., Fabian, A. C., Hamer, S. L., Hogan, M. T., Oonk, J. B. R., Quillen, A. C., Sanders, J. S., Salomé, P., and Voit, G. M. 2015, MNRAS, 451, 3768
- [43] *Ultraviolet Morphology and Unobscured UV Star Formation Rates of CLASH Brightest Cluster Galaxies*, Donahue, M., Connor, T., Fogarty, K., **Li, Yuan**, Voit, G. M., Postman, M., Koekemoer, A., Moustakas, J., Bradley, L., and Ford, H. 2015, ApJ, 805, 177
- [44] *ENZO: An Adaptive Mesh Refinement Code for Astrophysics*, Bryan, G. L., Norman, M. L., O’Shea, B. W., Abel, T., Wise, J. H., Turk, M. J., Reynolds, D. R., Collins, D. C., Wang, P., Skillman, S. W., Smith, B., Harkness, R. P., Bordner, J., Kim, J.-h., Kuhlen, M., Xu, H., Goldbaum, N., Hummels, C., Kritsuk, A. G., Tasker, E., Skory, S., Simpson, C. M., Hahn, O., Oishi, J. S., So, G. C., Zhao, F., Cen, R., **Li, Yuan**, and Enzo Collaboration. 2014, ApJS, 211, 19
- [45] *Modeling Active Galactic Nucleus Feedback in Cool-core Clusters: The Balance between Heating and Cooling*, **Li, Yuan** and Bryan, G. L. 2014, ApJ, 789, 54

- [46] *Modeling Active Galactic Nucleus Feedback in Cool-core Clusters: The Formation of Cold Clumps*,  
**Li, Yuan** and Bryan, G. L. 2014, ApJ, 789, 153
- [47] *Simulating the Cooling Flow of Cool-core Clusters*,  
**Li, Yuan** and Bryan, G. L. 2012, ApJ, 747, 26
- [48] *Determining the Dust Extinction of Gamma-Ray Burst Host Galaxies: A Direct Method Based on Optical and X-Ray Photometry*,  
**Li, Yuan**, Li, A., and Wei, D. M. 2008, ApJ, 678, 1136

## White papers and Book Chapters:

- [1] *AGN Feedback in Groups and Clusters of Galaxies*,  
Hlavacek-Larrondo, J., **Li, Yuan**, and Churazov, E. 2022, Handbook of X-ray and Gamma-ray Astrophysics, arXiv e-prints, arXiv:2206.00098
- [2] *Circumgalactic Gas and the Precipitation Limit*,  
Voit, G. M., Babul, A., Babyk, I., Bryan, G. L., Chen, H. W., Donahue, M., Fielding, D., Gaspari, M., **Li, Yuan**, McDonald, M., O’Shea, B. W., Prasad, D., Sharma, P., Sun, M., Tremblay, G., Werk, J., Werner, N., and Zahedy, F. 2019, arXiv e-prints, arXiv:1903.11212
- [3] *Supermassive Black Hole Feedback*,  
Ruszkowski, M., Nagai, D., Zhuravleva, I., Brummel-Smith, C., **Li, Yuan**, Hodges-Kluck, E., Yang, H.-Y. K., Basu, K., Chluba, J., Churazov, E., Donahue, M., Fabian, A., Faucher-Giguère, C.-A., Gaspari, M., Hlavacek-Larrondo, J., McDonald, M., McNamara, B., Nulsen, P., Mroczkowski, T., Mushotzky, R., Reynolds, C., Vikhlinin, A., Voit, M., Werner, N., ZuHone, J., and Zweibel, E. 2019, BAAS, 51, 326

## Scientific Talks

### *Seminars/Colloquia*

- Purdue University, Astrophysics Seminar (March 2024).
- Nanjing University, China, Colloquium (Dec 2022).
- University of Texas at Arlington, Colloquium (Oct 2022).
- University of Maryland, CTC seminar (May 2022).
- University of Texas at Dallas, Colloquium (March 2022).
- University of Alabama in Huntsville, Colloquium (Oct 2021).
- Universidad de Concepción, Colloquium (May 2021).
- The Kavli Institute for Astronomy and Astrophysics (KIAA), Colloquium (May 2021).
- University of Michigan, Galaxy Cluster Seminar (March 2021).
- University of North Texas, Colloquium (Sept 2020).
- University of California, Berkeley, Colloquium (June 2020).
- University of Missouri, Kansas City, Colloquium (Feb 2020).
- University of Mississippi, Colloquium (Feb 2020).
- Columbia University, Lunch Talk (Dec 2019).
- Massachusetts Institute of Technology, Astrophysics Brown Bag Lunch Talk (Dec 2019).



Stanford University, KIPAC Tea Talk (Nov 2019).

California Institute of Technology, TAPIR Seminar (May 2019).

University of California, Santa Cruz, Geophysical, Astrophysical Fluid Dynamics seminar (May 2019).

University of Kentucky, Astronomy Seminar (April 2019).

California Polytechnic State University, Colloquium (Nov 2018).

University of California, Berkeley, Astronomy Seminar at the Theoretical Astrophysics Center (Sep 2018).

The Space Telescope Science Institute, Colloquium (June 2018).

American Museum of Natural History (April 2018).

University of Notre Dame, Colloquium (Nov 2016).

University of Chicago, KICP Seminar (Nov 2016).

Georgia Institute of Technology, Seminar at the Center for Relativistic Astrophysics (Sep 2016).

Northwestern University, Astrophysics Seminar (Dec 2015).

University of California, Berkeley, Astronomy Seminar at the Theoretical Astrophysics Center (Sep 2015).

Michigan State University, Astronomy Seminar (April 2015).

Rutgers University, Astrophysics Seminar and Colloquium (April 2014).

U.S. Naval Research Laboratory, Washington, DC, NRL Lunch Talk (March 2014).

Yale University, Galaxy Lunch (Oct 2013).

### *Selected Conference Presentations*

“Turbulence in the Intracluster Medium”, ISSI Workshop on the Electron Kinetic Physics: The Next Frontier in Space and Astrophysical Plasmas, International Space Science Institute, Bern, Switzerland (April 2024)

“The Turbulent Motions of Filaments”, KITP Workshop on Turbulence in Astrophysical Environments, Santa Barbara, Santa Barbara, California (March 2024).

“Multiphase Gas in Galaxy Clusters”, Modeling of Multiphase Astrophysical Media, Lake Kochel, Bavaria (May 2023).

“Turbulence in the Intracluster Medium”, Midwest Magnetic Fields Workshop, virtual (May 2023).

“Turbulence Traced with Multiphase Filaments in Galaxy Clusters”, American Astronomical Society, AAS Meeting, Seattle, Washington (Jan 2023).

“Turbulence in the Intracluster Medium”, 6th ICM Theory and Computation Workshop, Copenhagen, Denmark (Aug 2022).

“Multiphase Gas in the Centers of Galaxy Clusters”, KIAA Forum on Gas in Galaxies for Early Career Scientists (Nov 2021).

“Probing Microscopic Physics of Weakly Collisional Plasma in Galaxy Clusters using High Resolution Optical Observations”, National Astronomy Meeting 2021 (July 2021).

“The Fate of AGB Winds in Massive Galaxies and Galaxy Clusters”, DELVE: The Death-Throes of Evolved Stars, a Virtual Encounter (April 2021).

“Observational Measures of Halo Turbulence”, KITP Workshop on Fundamentals of Gaseous Halos (Jan 2021).

“Direct Detection of Black Hole-Driven Turbulence in the Centers of Galaxy Clusters”, 43rd COSPAR Scientific Assembly, Sydney, Australia (Jan 2021).

“Direct Detection of Black Hole-Driven Turbulence in the Centers of Galaxy Clusters”, Conference on Supermassive Black Holes, Chile (Dec 2020).

“Multiphase Gas in the Centers of Galaxy Clusters”, KITP Workshop on Multiphase Gas, Santa Barbara, California (Oct 2020).

“Direct Detection of Black Hole-Driven Turbulence in the Centers of Galaxy Clusters”, Universality: Turbulence Across Vast Scales, New York, New York (Dec 2019).

“The Fate of AGB Wind in Massive Galaxies and the ICM”, Physics of the Intracluster Medium: Theory and Computation workshop, Budapest, Hungary (March 2019).

“AGN Feedback and Multiphase Gas in Massive Galaxies”, HUBS Workshop, Shanghai, China (Oct 2018).

“The Effects of Ram Pressure on the Cold Clouds in the Centers of Galaxy Clusters”, IAU Symposium 342, Noto, Italy (May 2018).

“SMBH Feeding and Feedback in Massive Galaxies”, CCA Regional Galaxy Formation Meeting, New York, New York (Oct 2017).

“Heating in Simulated Galaxy Clusters with Momentum-driven AGN Feedback”, ICM Theory and Computation Workshop, Minneapolis, Minnesota (Aug 2016).

“Thermal Instabilities and AGN feedback in Galaxy Clusters”, CMO Workshop: Computing the Universe, Oaxaca, Mexico (June 2016).

“Heating in Simulated Galaxy Clusters with Momentum-driven AGN Feedback”, The Physics of Supermassive Black Hole Formation and Feedback Conference, Annapolis, Maryland (Oct 2015).

“Bondi Accretion in Simulations with Thermal Instability and AGN Feedback”, Compact Objects in Michigan, Ann Arbor, Michigan (Apr 2015).

“Cooling, AGN Feedback and Star Formation in Simulated Cool-Core Galaxy Clusters”, BH accretion and AGN feedback conference, Shanghai, China (June 2015).

“Cooling, AGN Feedback and Star Formation in Simulated Cool-Core Galaxy Clusters”, SnowCluster - The Physics of Galaxy Clusters conference, Salt Lake City, Utah (Mar 2015).

“Modeling AGN Feedback in Cool-Core Galaxy Clusters”, ICM Theory and Computation Workshop, Copenhagen, Denmark (Aug 2014).

“Simulating the Cooling Flow and AGN Feedback of Cool-Core Clusters”, Special Session - Cosmic Evolution of Groups and Clusters of IAU General Assembly, Beijing, China (Aug 2012).

“Simulating the Cooling Flow of Cool-core Clusters”, American Astronomical Society, AAS Meeting, Austin, Texas (Jan 2012).

“Simulating the Cooling Flow of Cool-core Clusters”, Chandra Science Workshop on Structure in Clusters and Groups of Galaxies, Boston, MA (July 2011).

“Galaxy Luminosity Function & Star-forming Sequence vs. Redshift”, American Astronomical Society, AAS Meeting, Washington, DC (Jan 2010).

“Determining the Dust Extinction of Gamma-ray Burst Host Galaxies”, 2008 Nanjing Gamma-ray Burst Conference, Nanjing, China (June 2008).

## Selected Services

Member of search committee for the Dean of the College of Science, UNT (2023).

Member of the Solar Eclipse Committee, Department of Physics, UNT (2023-2024).

Member of search committee for a tenure-track position in astrophysics, Department of Physics, UNT (2023).

Member of search committee for tenure-track positions in energy and photonics, Department of Physics, UNT (2022).

Member of Research Roadmap Committee, Department of Physics, UNT (2021).

Member of search committee for a lecturer and a senior lecturer, Department of Physics, UNT (2021).

Member of Graduate Committee, Department of Physics, UNT (2021-present).

Member of Diversity, Equity, and Inclusion Committee, Department of Physics, UNT (2020-2021).

Representative for postdocs/research scientists on the Equity and Inclusion Committee at the University of Michigan (2015-2016).

Member of Graduate School Admission Committee, Department of Astronomy and Astrophysics, Columbia University (2012).

## References

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