
SEAN D. JOHNSON

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CURRENT POSITION

- Assistant Professor, Department of Astronomy, University of Michigan *2020 – present*
- LSA Collegiate Fellow, National Center for Institutional Diversity, University of Michigan *2020 – present*

EDUCATION

The University of Chicago

- Ph.D. in Astronomy & Astrophysics *2016*
Thesis: Studies of the relationship between galaxies and the inter/circum-galactic medium
Advisor: Professor Hsiao-Wen Chen
- M.S. in Astronomy & Astrophysics *2011*
- B.S. in Mathematics & B.A. in Physics with specialization in Astrophysics, with Honors *2010*

RESEARCH INTERESTS: OBSERVATIONS OF GALAXY EVOLUTION

- The inter- and circum-galactic medium and relationship to galaxy evolution
- Fueling of and feedback from star-formation in galaxies from dwarfs to massive groups
- Feeding of and feedback from supermassive black holes in quasar phases

RESEARCH HIGHLIGHTS

- Ten first-author papers and thirteen second-author papers, nine of which were led by student or postdoc group members
- Over 2400 citations, h-index: 30
- Awarded nine PI & four co-PI programs on *Hubble* (over 500 orbits) in Cycles 25–33 (2017-present)
- Over \$900,000 awarded to U. Michigan as science or admin PI since 2020.
- Awarded ≈ 50 nights on the 6.5-m Magellan Telescopes and 3 nights on NOAO 4-meters
- External member of the VLT’s MUSE GTO team
- Science highlighted as motivating cases for 30-m class telescopes and new Magellan instruments

SELECTED FELLOWSHIPS AND AWARDS

- Joint Carnegie–Princeton Fellowship *2016 – 2020*
- NASA Hubble Fellowship *2016 – 2019*
- American Astronomical Society Rodger Doxsey Travel Prize *2015*
- National Science Foundation Graduate Research Fellowship *2010 – 2015*
- Brinson Pre-doctoral Fellow at the Carnegie Observatories *2013 – 2014*

**Primary advisor on student-led paper

*Primary advisor on postdoc-led paper

Note: In Astronomy and Astrophysics, the convention is for the PI to be listed as the second author on publications led by group members.

23. **Fuller, E., **Johnson, S. D.**, Stern, J., Chen, H.-W., Choi, E., Faucher-Giguère, C.-A., Gaspari, M., Goulding, A., Greene, J., Heckman, T. M., Li, J. I.-H., Liu, Z., Mishra, N., Nyland, K., Rowlands, K., Rudie, G. C., Schneider, E., Wylezalek, D., Zakamska, N. L., submitted to ApJ, *Under Pressure: UV Emission Line Ratios as Barometers of AGN Feedback Mechanisms*
22. **Liu, Z., **Johnson, S. D.**, Li J. I.-H., Epinat, B., Rudie, G. C., Monrael-Ibero, A., Cantalupo, S., Qu, Z., Chen, M. C., Kollatschny, W., Muzahid, S., Zahedy, F. S., Kesler, El., Mishra, N., 2025, *The Morphology and Kinematics of a Giant, Symmetric Nebula Around a Radio-Loud Quasar 3C 57: Extended Rotating Gas or Biconical Outflows?*, ApJ, 986, 87
21. *Li, J. I.-H., **Johnson, S. D.** and Avestruz, C., Jarugula, S., Shen, Y., Kesler, E., Liu, Z., Mishra, N., 2024, *Fast and Flexible Inference Framework for Continuum Reverberation Mapping using Simulation-based Inference with Deep Learning*, ApJ, 977, 223
20. **Mishra, N., **Johnson, S. D.**, Rudie, G. C., Chen, H.-W., Schaye, J., Qu, Z., Zahedy, F. S., Boettcher, E. T., Cantalupo, S., Chen, M. C., Faucher-Giguère, C.-A., Greene, J. E. and Li, J. I.-H., Zhuoqi, L., Lopez, S., Petitjean, P., 2024, *The Cosmic Ultraviolet Baryon Survey (CUBS) IX: The enriched circumgalactic and intergalactic medium around star-forming field dwarf galaxies traced by O VI absorption*, ApJ, 976, 1, 149
19. **Johnson, S. D.**, Liu, Z., Li J. I.-H., Schaye, J., Greene, J. E., Cantalupo, S., Rudie, G. C., Qu, Z., Chen, H.-W., Rafelski, M., Muzahid, S., Chen, M. C., Contini, T., Kollatschny, W., Mishra, N., Petitjean, P., Rauch, M., Zahedy, F. Z., 2024, *Discovery of optically emitting circumgalactic nebulae around the majority of UV-luminous quasars at intermediate redshift*, ApJ, 966, 2, 218
18. *Li J. I.-H., **Johnson, S. D.**, Boettcher, E., Cantalupo, S., Chen, H.-W., Chen, M. C., DePalma, D., Liu, Z., Mishra, N., Petitjean, P., Qu, Z., Rudie, G. C., Schaye, J., Zahedy, F. S., 2024, *The Cosmic Ultraviolet Baryon Survey (CUBS) VIII: Group Environments of the Most Luminous Quasars at $z \approx 1$* , ApJ, 965, 2, 143
17. **Liu, Z., **Johnson, S. D.**, Li J. I.-H., Rudie, G. C., Schaye, J., Chen, H.-W., Brinchmann, J., Cantalupo, S., Chen, M. C., Kollatschny, W., Mishra, N., Muzahid, S., 2024, *The first comprehensive study of a giant nebula around a radio-quiet quasar in the $z < 1$ Universe*, MNRAS, 527, 3, 5429
16. **Johnson, S. D.**, Schaye, J., Walth, G. L., Li J. I.-H., Rudie, G. C., Chen, H.-W., Chen, M. C., Epinat, B., Gaspari, M., Cantalupo, S., Kollatschny, W., Liu, Z., Muzahid, S. 2022, *Directly Tracing Cool Filamentary Accretion over >100 kpc into the Interstellar Medium of a Quasar Host at $z=1$* , ApJ Letters, 940, L40
15. **Dorigo Jones, J., **Johnson, S. D.**, Muzahid, S., Charlton, J., Chen, H.-W., Narayanan, A., Sameer, Schaye, J., Wijers, N. A., 2022, *Improving blazar redshift constraints with the edge of the Ly α forest: 1ES 1553+113 and implications for observations of the WHIM* MNRAS, 509, 4330D
14. **Helton, J., **Johnson, S. D.**, Greene, J. E., et al., 2021, *Discovery and origins of giant optically emitting nebulae around PKS 0454-22*, MNRAS, 505, 5497
13. **Somalwar, J., **Johnson, S. D.**, Stern, J., Goulding, A. D., Greene, J. E., Zakamska, N. L., Alexandroff, R. M., Chen, H.-W., 2020, *The first spatially resolved rest-UV spectroscopy of a prototypical quasar driven superwind at low- z* , ApJ Letters, 890, 28

12. **Johnson, S. D.**, Mulchaey, J. S., Chen, H.-W., Wijers, N. A., Connor, T., Muzahid, S., Schaye, J., Cen, R., Carlsten, S. G., Charlton, J., Drout, M. R., Goulding, A. D., Hansen, T. T., Walth, G. L., 2019 *The Physical Origins of the Identified and Still Missing Components of the Warm-Hot Intergalactic Medium: Insights from Deep Surveys in the Field of Blazar 1ES1553+113*, ApJ Letters, 884, 2, L31
11. Chen, H.-W., **Johnson, S. D.**, Straka, L. A., Zahedy, F. S., Schaye, J., Muzahid, S., Bouché, N., Cantalupo, S., Marino, R., Wendt, M., 2019, *Characterizing circumgalactic gas around massive ellipticals at $z \approx 0.4$ III. The galactic environment of a chemically-pristine Lyman limit absorber*, MNRAS, 484, 1
10. **Johnson, S. D.**, Chen, H.-W., Straka, L. A., Schaye, J., Cantalupo, S., Wendt, M., Muzahid, S., Bouché, N., Herenz, E. C., Kollatchny, W., Mulchaey, J. S., Marino, R. A., Maseda, M. V., Wisotzki, L., 2018, *Galaxy and Quasar Fueling Caught in the Act from the Intragroup to the Interstellar Medium*, ApJ Letters, 869, L1
9. **Johnson, S. D.**, Chen, H.-W., & Mulchaey, J. S., Schaye, J., Straka, L. A. 2017, *The extent of chemically enriched gas around star-forming dwarf galaxies*, ApJ Letters, 850, L10
8. Chen, H.-W., **Johnson, S. D.**, Zahedy, F. S., Rauch, M., & Mulchaey, J. S. 2017, *Gauging Metallicity of Diffuse Gas under an Uncertain Ionizing Radiation Field*, ApJ Letters, 842L, 19C
7. Straka, L. A., **Johnson, S. D.**, York, D. G., Bowen, D. V., Florian, M., Kulkarni, V. P., Lundgren, B., Peroux, C. 2016, *Magellan LDSS3 emission confirmation of galaxies hosting metal-rich Lyman-alpha absorption systems*, MNRAS, 458, 3760
6. **Johnson, S. D.**, Chen, H.-W., & Mulchaey, J. S. 2015, *On the origin of excess cool gas in quasar host halos*, MNRAS, 452, 2553
5. **Johnson, S. D.**, Chen, H.-W., & Mulchaey, J. S. 2015, *On the possible environmental effect in distributing heavy elements beyond individual gaseous halos*, MNRAS, 449, 3263
4. **Johnson, S. D.**, Chen, H.-W., Mulchaey, J. S., Tripp, T. M., Prochaska, J. X., & Werk, J. K. 2014, *Discovery of a transparent sightline at $\rho \lesssim 20$ kpc from an interacting pair of galaxies*, MNRAS, 438, 3039
3. **Johnson, S. D.**, Chen, H.-W., & Mulchaey, J. S. 2013, *Probing the IGM-galaxy connection at $z < 0.5$ - II. New insights into the galaxy environments of O VI absorbers in PKS 0405–123*, MNRAS, 434, 1765
2. **Johnson, S. D.** & Moyer, E. J., 2012, *Feasibility of U.S. renewable portfolio standards under cost caps and case study for Illinois*, Energy Policy, 49, 449
1. Moyer, E. J., **Johnson, S. D.**, Goldberger, L., & Zhu, J., 2012, *Feasibility and Implications of the Michigan 2012 Proposal 3 for a 25% State Renewable Portfolio Standard*, RDCEP Policy Analysis Paper Series

CO-AUTHORED JOURNAL ARTICLES

49. Banerjee, E., Muzahid, S., Schaye, J., et al., including **Johnson, S. D.**, 2025, *MUSEQuBES: Connecting H I Absorption with Ly α Emitters at $z \approx 3.3$* , ApJ, 980, 2, 171
48. Liu, W., Veilleux, S., Sankar, S., Rupke, D., Zakamska, N., Wylezalek, D., Vayner, A., et al., including **Johnson, S. D.**, 2025, —it First Results from the JWST Early Release Science Program Q3D: The Fast Outflow in a Red Quasar at $z = 0.44$, ApJ, 980, 1, 31
47. Banerjee, E., Muzahid, S., Schaye, J., Cantalupo, S., **Johnson, S. D.**, 2025, *MUSEQuBES: Unveiling Cosmic Web Filaments at $z \approx 3.6$ through Dual Absorption and Emission Line Analysis*, ApJL, 979, 2, L32

46. Kumar, S., Chen, H.-W., Qu, Z., Chen, M. C., Zahedy, F. S., et al., including **Johnson, S. D.**, 2024, *On the Nature of the C IV-bearing Circumgalactic Medium at $z \sim 1$* , OJAp, 7, 94
45. Luo, Y., Leauthaud, A., and Greene, J., et al., including **Johnson, S. D.**, 2024, *The Merian survey: design, construction, and characterization of a filter set optimized to find dwarf galaxies and measure their dark matter halo properties with weak lensing*, MNRAS, 530, 4
44. Li, M., Zhang, H., Cai, Z., et al., including **Johnson, S. D.**, 2024, *MAMMOTH-Subaru. II. Diverse Populations of Circumgalactic Ly α Nebulae at Cosmic Noon*, 2024, ApJS, 275, 27
43. Qu, Z., Chen, H.-W., **Johnson, S. D.**, Rudie, G. C., Zahedy, F. S., DePalma, D., Schaye, J., Boettcher, E., Cantalupo, S., Chen, M. C., Faucher-Giguère, C.-A., Li, J. I.-H., Mulchaey, J. S., Petitjean, P., Rafelski, M., 2023, *The Cosmic Ultraviolet Baryon Survey (CUBS) - VI. Connecting physical properties of the cool circumgalactic medium to galaxies at $z \approx 1$* , MNRAS, 524, 512
42. Deka, P. P., Gupta, N., Chen, H. W., **Johnson, S. D.**, Noterdaeme, P., Combes, F., Boettcher, E., Balashev, S. A., Emig, K. L., Józsa, G. I. G., Klockner, H.-R., Krogager, J.-K., Momjian, E., Petitjean, P., Rudie, G. C., Wagnveld, J., Zahedy, F. S., 2024, *MALS discovery of a rare HI 21-cm absorber at $z \approx 1.35$. origin of the absorbing gas in powerful AGN*, A&A, 687, 50
41. Chen, M. C., Chen, H.-W., Rauch, M., Qu, Z., **Johnson, S. D.**, Schaye, J., Rudie, G. C. ; Li, J. I.-H., Liu, Z., Zahedy, F. S., Cantalupo, S., Boettcher, E., 2024, *An ensemble study of turbulence in extended QSO nebulae at $z \approx 0.5 - 1$* , ApJ, in press
40. Epinat, B., Contini, T., Mercier, W., Ciesla, L., Lemaux, B. C., **Johnson, S. D.**, Richard, J., Brinchmann, J., Boogaard, L. A., Carton, D., Michel-Dansac, L., Bacon, R., Krajnovic, D., Finley, H., Schroetter, I., Ventou, E., Abril-Melgarejo, V., Boselli, A., Bouché, N. F., Kollatschny, W., Kovac, K., Paalvast, M., Soucail, G., Urrutia, T., Weilbacher, P. M., 2024, *MAGIC: Muse galaxy Groups In Cosmos – A survey to probe the impact of environment on galaxy evolution over the last 8 Gyr*, A&A in press
39. Banerjee, E., Muzahid, S., Schaye, J., **Johnson, S. D.**, Cantalupo, S., 2023, *MUSEQuBES: the relation between Ly α emitters and CIV absorbers at $z \approx 3.3$* , MNRAS 524, 5148
38. Qu, Z., Chen, H.-W., Rudie, G. C., **Johnson, S. D.**, Zahedy, F. S., DePalma, D., Boettcher, E., Cantalupo, S., Chen, M. C., Cooksey, K. L., Faucher-Giguère, C.-A., Li, J. I.-H., Lopez, S., Schaye, J., Simcoe, R. A., 2023, *The Cosmic Ultraviolet Baryon Survey (CUBS) - VI. Connecting physical properties of the cool circumgalactic medium to galaxies at $z \approx 1$* , MNRAS, 524, 512
37. Veilleux, S.; Liu, W.; Vayner, A., et al., including Johnson, S. D., 2023, *First Results from the JWST Early Release Science Program Q3D: The Warm Ionized Gas Outflow in $z \sim 1.6$ Quasar XID 2028 and Its Impact on the Host Galaxy*, ApJ, 953, 56
36. Berg, M. A., Lehner, N., Howk, J. C., et al., including Johnson, S.D., 2023, *The Bimodal Absorption System Imaging Campaign (BASIC). I. A Dual Population of Low-metallicity Absorbers at $z < 1$* , ApJ, 944, 1
35. Ni, Y. Q., Moon, D.-S., Drout, M. R., Polin, A., et al. including S. D. Johnson, 2023, *The Origin and Evolution of the Normal Type Ia SN 2018aoz with Infant-phase Reddening and Excess Emission*, ApJ 946, 1
34. Chen, M. C., Chen, H.-W., Rauch, M., Qu, Z., **Johnson, S. D.**, Li, J. I., et al. 2023, *Empirical constraints on the turbulence in QSO host nebulae from velocity structure function measurements*, MNRAS, 518, 2354
33. Qu, Z., Chen, H.-W., Rudie, G. C., Zahedy, F. S., **Johnson, S. D.**, Boettcher, E., et al., 2022, *The Cosmic Ultraviolet Baryon Survey (CUBS) V: on the thermodynamic properties of the cool circumgalactic medium at $z \lesssim 1$* , MNRAS, 516, 4882

32. Wylezalek, D., Vayner, A., Rupke, D. S. N., et al. including Johnson, S. D. 2022, *First Results from the JWST Early Release Science Program Q3D: Turbulent Times in the Life of a $z \sim 3$ Extremely Red Quasar Revealed by NIRSpec IFU*, ApJ Letters, 940, L7
31. Ni, Y. Q., Moon, D.-S., Drout, M. R., et al. including Johnson, S. D., 2022, *Infant-phase reddening by surface Fe-peak elements in a normal type Ia supernova*, Nature Astronomy, 6, 568.
30. Boettcher, E.; Gupta, N.; Chen, H.-W.; Chen, M. C.; Józsa, G. I. G.; Rudie, G. C.; Cantalupo, S.; **Johnson, S. D.**; Balashev, S. A.; Comes, F.; Cooksey, K. L.; Faucher-Giguère, C.-A.; Krogager, J.-K.; Lopez, S.; Momjian, E.; Noterdaeme, P.; Petitjean, P.; Rafelski, M.; Srianand, R.; Walth, G.; Zahedy, S., 2022, *Discovery of a Damped Ly α absorber originating in a spectacular interacting dwarf galaxy pair at $z = 0.026$* , 2022, ApJ Letters, 926, L33
29. Pearl, A. N., Bezanson, R.; Zentner, A. R.; Newman, J. A.; Goulding, A. D.; Whitaker, K. E.; **Johnson, S. D.**; Greene, J. E., 2022, *CLIMBER: Galaxy-Halo Connection Constraints from Next-generation Surveys*, ApJ, 925, 180P
28. Muzahid, S.; Schaye, J.; Cantalupo, S.; Marino, R. A.; Bouché, N. F.; **Johnson, S. D.**; Maseda, M.; Wendt, M.; Wisotzki, L.; Zabl, J., 2021, MNRAS 508, 5612M
27. Cooper, T. J.; Rudie, G. C.; Chen, H.-W.; **Johnson, S. D.**; Zahedy, F. S.; Chen, M. C.; Boettcher, E.; Walth, G. L.; Cantalupo, S.; Cooksey, K. L.; Faucher-Giguère, C.-A.; Greene, J. E.; Lopez, S.; Mulchaey, J. S.; Penton, S. V.; Petitjean, P.; Putman, M. E.; Rafelski, M. ; Rauch, M.; Schaye, J.; Simcoe, R. A., 2021, in press
26. Zahedy, F. S.; Chen, H.-W.; Cooper, T. M.; Boettcher, E.; **Johnson, S. D.**; Rudie, G. C.; Chen, M. C.; Cantalupo, S.; Cooksey, K. L.; Faucher-Giguère, C.-A.; Greene, J. E. ; Lopez, S.; Mulchaey, J. S. ; Penton, S. V.; Petitjean, P.; Putman, M. E.; Rafelski, M.; Rauch, M.; Schaye, J.; Simcoe, R. A.; 2021, MNRAS, 1, 887
25. Yu, X.; Li, J.-T.; Qu, Z.; Roederer, I. U.; Bregman, J. N.; Fan, X.; Fang, T.; **Johnson, S. D.**; Wang, F.; Yang, J.; 2021, MNRAS, 505, 3, 4444
24. Narayanan, A.; Sameer; Muzahid, S.; **Johnson, S. D.**; Udhvani, P.; Charlton, J. C.; Mauerhofer, V. ; Schaye, J.; Yadav, M.; 2021, MNRAS, 505, 1, 738
23. Huang, Y. -H.; Chen, H.-W.; Shethman, S. A.; **Johnson, S. D.**; Zahedy, F. S.; Helsby, J. E.; Gauthier, J.-R.; Thompson, I. B., 2021, MNRAS, 502, 4, 4743
22. Boettcher, E.; Chen, H.-W.; Zahedy, F. S.; Cooper, T. J.; Johnson, S. D.; Rudie, G. C.; Chen, M. C.; et al., 2021, ApJ, accepted
21. Chen, H.-W.; Zahedy, F. S.; Boettcher, E.; Cooper, T. M.; **Johnson, S. D.**; Rudie, G. C.; Chen, M. C.; Walth, G. L.; et al., 2020, *The Cosmic Ultraviolet Baryon Survey (CUBS) - I. Overview and the diverse environments of Lyman limit systems at $z < 1$* MNRAS, 497, 498
20. Sowgat, M., Joop, S., Marino, R. A., Cantalupo, S., Brinchmann, J., Contini, T., Wendt, M., Wisotzki, L., Zabl, J., Bouché, N., Akhlaghi, M., Chen, H.-W., Claeysens, A., **Johnson, S. D.**, Leclergq, F., Maseda, M., Matthee, J., Richard, J., Urrutia, T., Verhamme, A., 2020 *MUSE-QuBES: Calibrating the redshifts of Lyman- α emitters using stacked circumgalactic medium absorption profiles*, MNRAS, 496, 1013
19. den Brok, J. S., Cantalupo, S., Mackenzie, R., Marino, R. A., Pezzulli, G., Matthee, J., Johnson, S. D., Krumpe, M., Urrutia, T., Kollatschny, W., 2020, *Probing the AGN unification model at redshift $z \sim 3$ with MUSE observations of giant Ly α nebulae*, MNRAS, 495, 1874
18. Kado-Fong, E., Greco, J. P., Beaton, R., Goulding, A., **Johnson, S. D.**, et al., 2020 *Star Formation in Isolated Dwarf Galaxies Hosting Tidal Debris: Extending the Dwarf-Dwarf Merger Sequence*, AJ, 159, 103

17. Caplar, N., Pena, T., **Johnson, S. D.**, Greene, J. E., 2020 *Nonstationarity of AGN variability: The only way to go is down!*, ApJ Letters, 889, 29
16. Halevi, G., Goulding, A., Greene, J., Coupon, J., Golob, A., Gwyn, S., **Johnson, S. D.**, Moutard, T., Sawicki, M., Suh, H., Toba, Y., 2019, *HSC-XD 52: An X-ray detected AGN in a low-mass galaxy at $z = 0.56$* , ApJ Letters 885, 1, L3
15. Gaspari, M., Eckert, D., Ettori, S., Tozzi, P., Bassini, L., Rasia, E., Brighenti, F., Sun, M., Borgani, S., **Johnson, S. D.**, Tremblay, G., Stone, J., Temi, P., Yang, H.-Y. K., Tombesi, F., Cappi, M., 2019, ApJ, 884, 2, 169
14. Marino, R. A., Cantalupo, S., Pezzulli, G., Lilly, S. J., Gallego, S., Mackenzie, R., Matthee, J., Brinchmann, J., Bouché, N., Feltre, A., Muzahid, S., Schroetter, I., **Johnson, S. D.**, Nanayakkara, T., 2019, ApJ, 880, 47M
13. Chen, H.-W., Boettcher, E., **Johnson, S. D.**, et al. 2019, A Giant Intragroup Nebula Hosting a Damped Ly α Absorber at $z = 0.313$, ApJ Letters, 878, L33
12. Zahedy, F. S., Chen, H.-W., **Johnson, S. D.**, Pierce, R. M., Rauch, M., Huang, Y.-H., Weiner, B. D., Gauthier, J.-R., 2018, *Characterizing Circumgalactic Gas around Massive Ellipticals at $z \approx 0.4$ - II. Physical Properties and Elemental Abundances*, MNRAS, 484, 2
11. Schmidt, S. J., Shappee, B.-J., van Sadlers, J. L.; Stanek, K. Z., Brown, J. S.; Kochanek, C. S.; Dong, S.; Drout, M. R.; Frank, S.; Holoién, T. W.-S.; **Johnson, S. D.**; Madore, B. F.; Prieto, J. L.; Seibert, M.; Seidel, M. K.; Simonian, G. V. A., *The largest M dwarfs flares from ASAS-SN*, ApJ, 876, 115S
10. Chen H.-W., Zahedy F. S., **Johnson S. D.**, Pierce R. M., Huang Y.-H., Weiner B. J., Gauthier J.-R., 2018, *Characterizing Circumgalactic Gas Around Massive Ellipticals at $z \approx 0.4$ - I. Initial results* MNRAS, 479, 2547C
9. Sun, A.-L., Greene, J. E., Zakamska, N. L., Goulding, A., Strauss, M. A., Huang, S., **Johnson, S.D.**, Kawaguchi, T., Matsuoka, Y., Marsteller, A. A., Nagao, T., Tobo, Y., et al. 2018, MNRAS, 480, 2302S
8. Stern, J., Faucher-Gigère, C.-A., Hennawi, J. F., Hafen, Z., **Johnson, S. D.**, Fielding, D., 2018, *Does circumgalactic O VI trace low-pressure gas beyond the accretion shock? clues from HI absorption, dust extinction, and line kinematics*, ApJ, 865, 91S
7. Lan T.-W., Ménard B., Baron D., **Johnson S. D.**, Poznanski D., Prochaska J. X., O’Meara J. M., 2018, MNRAS, 477, 3520L
6. Goulding, A. D., Greene, J. E., Bezanson, R., Greco, J., **Johnson, S. D.**, Leauthaud, A., Matsuoka, Y., Medezinski, E., Price-Whelan, A.M., 2018, *Galaxy Interactions Trigger Rapid Black Hole Growth: an unprecedented view from the Hyper Suprime-Cam Survey*, PASJ, 70S, 37G
5. Huang, Y.-W., Chen, H.-W., **Johnson, S. D.**, Weiner, B. J., 2016, *Characterizing the Chemically-Enriched Circumgalactic Medium of ~ 38000 Luminous Red Galaxies in SDSS DR12*, MNRAS, 455, 1713
4. Chen, H.-W., Gauthier, J.-R., Sharon, K., **Johnson, S. D.**, Nair, P., & Liang, C. J. 2014, *Spatially resolved velocity maps of halo gas around two intermediate-redshift galaxies*, MNRAS, 438, 1435
3. Oka, T., Welty, D. E., **Johnson, S. D.**, York, D. G., Dahlstrom, J., & Hobbs, L. M., 2013, *Anomalous Diffuse Interstellar Bands in the Spectrum of Herschel 36. II. Analysis of Radiatively Excited CH^+ , CH , and Diffuse Interstellar Bands*, ApJ, 773, 42

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2. Dahlstrom, J., York, D. G., Welty, D. E., Oka, T., Hobbs, L. M., **Johnson, S. D.**, Friedman, S. D., Jiang, Z., Rachford, B. L., Sherman, R., Snow, T. P., Sonnentrucker, P., 2013, *Anomalous Diffuse Interstellar Bands in the Spectrum of Herschel 36. I. Observations of Rotationally Excited CH and CH⁺ Absorption and Strong, Extended Redward Wings on Several DIBs*, ApJ, 773, 41
 1. York, D. G., Straka, L. A., Bishof, M., Kuttruff, S., Bowen, D., Kulkarni, V. P., Subbarau, M., Richards, G., Vanden Berk, D., Hall, P. B., Heckman, T., Khare, P., Quashnock, J., Ghering, L., & **Johnson, S. D.**, *Galaxies with background QSOs - I. A search for strong galactic H α lines* 2012, MNRAS, 423, 3692

ASTRO 2020 DECADAL SURVEY WHITE PAPERS

4. Chen, H.-W., **Johnson, S. D.**, Rudie, G. C., et al. 2019, BAAS, 51, 329
3. Newman, A., Bezanson, R., **Johnson, S.**, et al. 2019, BAAS, 51, 145
2. Rudie, G. C., Chen, H.-W., Newman, A. B., **Johnson, S. D.**, et al. 2019, BAAS, 51, 148
1. Burchett, J., Butsky, I., Tremmel, M.,... **Johnson, S. D.**... et al. 2019, BAAS, 51, 534

FUNDING AND TELESCOPE PROPOSALS AS PI/CO-PI:

- *Hubble Space Telescope* Cycle 33:
 - ★ GO-18107 – 70 orbits: “Baryonic Escape, Abundances, and Thermodynamics in Cosmic Ecosystems (BEATrICE)” (PI Johnson, co-PI’s Chen, Rudie, Qu, Zahedy; funding TBD)
 - ★ GO-18039 – 9 orbits: “Confirming and Characterizing a Fast, Cool Inflow Toward a Luminous Quasar at $z = 0.78$ ” (PI Liu, co-PI Johnson; funding TBD)
- *Future Investigators in NASA Earth and Space Science and Technology (FINESST) 2024*: “Probing the Gaseous Cosmic Ecosystems of Massive Halos with Integral Field Spectroscopy of Giant, Optically Emitting Nebulae”, (FI Liu, PI Johnson, \$100k awarded to UM)
- *Hubble Space Telescope* Cycle 32:
 - ★ GO-17800 – 147 object snapshot survey: “Diagnostics of AGN Feedback with the first UV atlas of obscured quasars” (PI; \$150k)
 - ★ GO-17803 – 51 orbits: “The first multi-phase survey of the circumgalactic medium of quasar hosts at $z < 1$ ” (PI; \$117k awarded to UM)
- *Hubble Space Telescope* Cycle 31:
 - ★ GO-17517 – 131 orbits: “CONTACT: Circumgalactic Observations of Nuv-shifted Transitions Across Cosmic Time” (PI Chen, co-PI’s Johnson & Rudie; \$75k awarded to UM)
- *Hubble Space Telescope* + Very Large Array in Cycle 29:
 - ★ GO-16728 – 4 orbits + 1 hr parallel on the VLA: “Physical diagnostics of AGN feedback from the first spatially resolved UV spectra of a jet-driven AGN outflow” (PI; \$113k)
- *Hubble Space Telescope* Cycle 27:
 - ★ GO-15935 – 21 orbits: “UV diagnostics as barometers for galactic scale AGN outflows” (PI, \$142k)
 - ★ GO-15835 – 4 orbits: “Near-Ultraviolet Follow-up of the X-ray-detected Warm-Hot Intergalactic Medium Toward 1ES 1553+113” (PI Muzahid, co-PI Johnson; \$40k)
- *Hubble Space Telescope* Cycle 26:

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- ★ GO-15655 – 39 orbits: “The first high resolution view of the full extent, morphology, and multi-phase nature of radio-loud and quiet AGN feedback with ACS+SBC” (PI; \$184k)
 - *Hubble Space Telescope* Cycle 25:
 - ★ GO-15163 – 169+169 (prime+parallel) orbits: “COS Ultraviolet Baryon Survey” (PI Chen, co-PI’s Johnson and Rudie)
 - ★ GO-15279 – 124 object snapshot survey: “Unveiling Quasar Fueling through a Public Snapshot Survey of Quasar Host Environments” (PI; \$170k)
 - ★ GO-15280 – 5 orbits: “Spatially resolved rest-UV spectroscopy of a prototypical quasar driven superwind at low- z ” (PI; \$84k)
 - ★ GO-15298 – 15 orbits: “The first high resolution image of coronal gas in a starbursting cool core cluster” (PI; \$78k)
 - Magellan 6.5-m: ≈ 50 nights in 2016B–present
 - DuPont 2.5-m: 22 nights in 2016–2017
 - CTIO Blanco 4-m: 2 nights in 2016A
 - NOAO Mayall 4-m: 1 night in 2015A
 - ARC 3.5-m: 24 half-nights in 2011-2013

TEACHING, MENTORING, AND PUBLIC OUTREACH

University of Michigan Didactic Teaching

2021-present

- ASTRO 102: Stars, Galaxies, and the Universe–4 semesters
- ASTRO 571: The Intergalactic and Circumgalactic Medium–1 semester
- ASTRO 533 (graduate): Structures and Content of Galaxies–2 semesters
- ASTRO 533 (graduate): Astrophysics of the Stellar and Diffuse Content of Galaxies–1 semester
- ASTRO 201: Introduction to Astrophysics (for majors)–1 semester
- ASTRO 220: New Discoveries in Astronomy–1 semester
- U. Michigan Center for Research on Learning & Teaching Large Course Initiative participant (2023)

Graduate Student and Postdoc Mentorship

2021-present

- Primary mentor to Nishant Mishra, a 4rd year graduate student in the Department of Astronomy
- Primary mentor to Will Liu, a 5th year graduate student in the Department of Astronomy
- Primary mentor to Jennifer Li, who started as a postdoc Astronomy at U. Michigan in 2021, became a Schmidt AI in Science Fellow jointly in the Department of Astronomy and Michigan Institute for Data Science in 2022, and started a position as a permanent Research Scientist at the National Center for Supercomputing Applications at UIUC in 2024

Undergraduate and Postbacc Student Mentorship

2017-present

- Primary research mentor for U-M undergraduate students A. Gaishin (astro major), A. Kadri (astro), J. Dupui (astro), and C. D’Sa (aerospace engineering)
- Primary research mentor for U-M undergraduate (physics major) and astro dept. postbacc student E. Fuller. Student led paper submitted to ApJ. E. Fuller is now a graduate student at CU Boulder
- Primary research mentor to undergraduate students J. VanHorn and P. Pitiak at U. Michigan through UROP
- Primary research mentor to J. Dorigo Jones, a postbacc student at U. Michigan working on inferring blazar redshifts from the Ly α forest. Student led paper accepted to MNRAS. J. Dorigo Jones is now a graduate student at CU Boulder

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- Primary research mentor for J. Helton, a Princeton undergraduate student working on surveys of quasar fueling starting with a summer project and continuing as a junior year research project. Student led final paper accepted to MNRAS. J. Helton is now a graduate student at U. Arizona
 - Primary research mentor for J. Somalwar, a Princeton undergraduate student working on UV diagnostics of quasar feedback from HST (Cycle 25, PI: S. Johnson, PID: 15280). Student led final paper accepted to ApJ Letters. J. Somalwar completed her PhD at Caltech in 2025 and is now a Bok Postdoctoral Fellow at U. Arizona.
 - Primary mentor for L. Borders, an NSF–INCLUDES REU student. LeeRoy conducted measurements in SDSS spectra to provide targets for an on-going HST snapshot survey (Cycle 25, PI: S. Johnson, PID: 15279) and continued on to Rutgers University as a Computer Science Major.

High School Research Advisor through Wolverine Pathways and Bellaire High School
2017-present

- Advised ≈ 2 high school students per year in research projects using SDSS spectra through the Wolverine Pathways (2022-2024), expanded to six interns in 2025
- Advised over ten high school students in research projects using SDSS spectra (2017-2021)

Public talks and interviews

- McCormick Observatory Pride Night Talk, 2023
- A Historical Guide to the Galaxy–interview for the Historic.ly podcast, 2022
- Building Extremely Large Telescopes, Astronomy on Tap Trenton, 2019

Co-founder of Astronomy on Tap Trenton *2019-2020*

- Coordinator of public astronomy talks in Trenton, NJ (≈ 40 members of the public in attendance)

Volunteer Math Professor, Princeton Prison Teaching Initiative *2016-2020*

- Teaching for-credit college level math and statistics classes in state and federal prisons
- Five semesters teaching courses including: Statistics, Elementary Algebra, & Intermediate Algebra

Grad. Extragalactic Astronomy and Cosmology (AST 522), Princeton University *2017*

- Guest lecturer for one class on the Intergalactic Medium

Instructor, Lifelong Learning *2015-2016*

- Taught hands-on courses on stars and spectroscopy as part of an education program for older adults

Instructor, Yerkes Winter & Summer Institute *2011-2015*

- 1-week, overnight science camps for students in The University of Chicago Upward Bound Program
- Lead Instructor in 2012

Space Explorers Instructor, The Kavli Institute for Cosmological Physics *2011 – 2012*

- Designed and taught a novel, year-long science course on order-of-magnitude estimation to 20 inner-city high school students from The University of Chicago Upward Bound Program

Instructor, The University of Chicago Department of Astronomy & Astrophysics *2010*

- CAPSTONE curriculum development course in astronomical databases for public high school students and teachers

Teaching Assistant, The University of Chicago Department of Mathematics *2009*

- Studies in Mathematics I: Number theory

SELECTED AND INVITED TALKS/WORKSHOPS

– Black Hole Weather Workshop, Sesto Italy	2025
– Physics Colloquium, University of North Texas	2025
– Dear Colleagues series panelist, National Center for Institutional Diversity, U. Michigan	2025
– AAAS SEA Change Panel, Boston, MA	2025
– Astronomy Seminar, Michigan State University	2024
– What Matter(s) Around Galaxies, Varenna, Italy	2024
– Astronomy Colloquium, The Ohio State University	2023
– NASA Cosmic Origins Diffuse Gas in Cosmic Ecosystems Science Interest Group Talk	2023
– The Evolution of Gas in and around Galaxies (NRAO), Stanley Idaho	2023
– Astronomy Colloquium, University of Virginia	2023
– Pride Night talk at the McCormick Observatory, University of Virginia	2023
– Invited review talk on UV Absorption at Science with the Line Emission Mapper, Harvard	2023
– Invited review talk on Integral Field Spectrographs at Oases in the Cosmic Desert, ASU	2023
– Astronomy Seminar, Texas A&M University	2022
– Panel on Academic Freedom and Responsibility, NCID, U. Michigan	2022
– Astronomy Seminar, Notre Dame	2022
– Selected Live Talk at Spatially Resolved Spectroscopy with ELTs conference (Oxford; remote)	2021
– Astronomy Colloquium, UCLA	2021
– Summer Astronomy Colloquium, Princeton University	2020
– Tea Talk, Kavli Institute for Particle Astrophysics and Cosmology, Stanford University	2020
– Astronomy Colloquium, The University of Texas at Austin	2020
– Astronomy Colloquium, The University of Michigan, Ann Arbor	2019
– Circumgalactic Medium Workshop (invited), Harnack House, Berlin,	2019
– The Cosmic Baryon Cycle (invited), GMT Community Science Meeting,	2019
– Circumgalactic Medium Workshop (invited), Northwestern University	2018
– Multiphase AGN feeding and feedback (invited), Sexten Center for Astrophysics	2018
– Astronomy Colloquium, The University of Pittsburgh	2018
– Lunch Seminar, Leiden Observatory	2018
– Chemical Evolution of the Universe (invited), GMT Community Science Meeting	2017
– Whereabouts the Baryons (invited), Sexten Center for Astrophysics	2017
– Astronomy Seminar, University of Pennsylvania	2017
– Magellan Science Meeting, Washington D.C.	2016
– Lunch Seminar, Leiden Observatory	2016

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- Astronomy Colloquium, University of Illinois at Urbana–Champaign 2015
 - Galread, Princeton University 2015
 - Science Lunch Talk, University of Wisconsin at Madison 2015
 - National Science Teachers Association, San Antonio 2013

SCIENTIFIC COMMUNITY AND UNIVERSITY SERVICE

Contributions to 30-m telescope projects and instruments 2017–present

- Member of the MOSAIC and HARMONI E-ELT science working groups
- Giant Magellan Telescope Science Book, Chapter 7 co-author, *Building Galaxies from Cosmic Gas*
- U.S. ELT Key Science Program Development Participant and Key Science Project co-author
- Co-author for the MIRMOS IFS Science Case (Magellan)

Referee and reviewer for 2016–present

- National Science Foundation AAG program: AGN observations panel and CGM theory panel
- NASA FINESST Program
- NASA ADAP Program
- Hubble Space Telescope CGM/IGM Panel
- NASA Earth and Space Science Graduate Research Fellowship Program
- Nature, Nature Astronomy, ApJ, ApJ Letters, MNRAS, A&A

Department and University Service

- Rackham Faculty Ally for the Department of Astronomy (2022-present)
- Prelim Committee, Department of Astronomy (2024-2025)
- SEA Change Committee, Department of Astronomy (2022-2024)
- DEI Committee Chair, Department of Astronomy (2023-2024)
- Faculty search committee member (2023-2024)
- Member of the LGBTQ+ College-wide Task Force currently writing a set of recommendations for the Dean of LSA (2022-2023)
- Panelist for the LSA Teaching Academy (2023, 2024)
- Co-led group of five faculty who pushed to change U. Michigan’s Rackham Graduate School policy surrounding data disclosure to improve protections of LGBTQ+ students (2022-2023)
- Co-author of an open letter signed by over 200 members of the U. Michigan community advocating that inclusive teaching is necessary for effective pedagogy, 2021
- Graduate Admissions Committee member, University of Michigan (2020-2021, 2021-2022)
- NextProf Committee member, University of Michigan (2020-2021, 2021-2022)
- Conversations in Equity and Inclusion Series organizer, University of Michigan (2021-2022)
- Colloquium Organizer, University of Michigan (2021-2022)
- Telescope Allocation Committee, University of Michigan (2020-2021, 2021-2022, 2023W)
- Department Preview application evaluator, University of Michigan (2020-2021)
- Organized Department presence/recruiting at SACNAS, University of Michigan (2020-2021)
- Postdoc representative to Princeton’s Department Climate and Diversity Committee (2019-2020)
- Student representative to the graduate admissions committee at U. Chicago (2015-2016)
- Student representative to the curriculum committee at U. Chicago (2012-2013)