

FAKHRI S. ZAHEDY

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CURRENT POSITION

Carnegie Fellow Observatories of the Carnegie Institution for Science	2019 - present
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EDUCATION

The University of Chicago Ph.D. in Astronomy & Astrophysics Thesis: <i>Multi-Pronged Studies of Diffuse Halo Gas around Massive Quiescent Galaxies</i> Advisor: Prof. Hsiao-Wen Chen	2019
The University of Chicago M.S. in Astronomy & Astrophysics	2015
Massachusetts Institute of Technology (MIT) B.S. in Physics, with concentrations in Astronomy and Music Cumulative GPA: 5.00/5.00 Inducted to Phi Beta Kappa and Sigma Pi Sigma	2013

SELECTED AWARDS

Carnegie Postdoctoral Fellowship , Carnegie Observatories	2019 - present
James W. Cronin Memorial Fellowship , The University of Chicago	2018 - 2019
William R. Harper Dissertation Fellowship , The University of Chicago	2018
Hubble Space Telescope (HST) Cycle 25 Program, Principal Investigator (11 HST orbits and \$56,675 awarded)	2017
Brinson Chicago-Carnegie Predoctoral Fellowship , Carnegie Observatories	2016 - 2017
International Travel Grant Award , The American Astronomical Society (AAS)	2017
Hubble Space Telescope (HST) Cycle 24 Program, Principal Investigator (3 HST orbits and \$42,719 awarded)	2016
McCormick Graduate Fellowship , The University of Chicago	2013 - 2015
General MIT Scholarship , MIT	2009 - 2013
Undergraduate Research Grants , MIT	2010 - 2011

JOURNAL PUBLICATIONS (AS FIRST OR SECOND AUTHOR)

1. **Zahedy, F. S.**, et al., 2020, *The Cosmic Ultraviolet Baryon Survey (CUBS) - IV. Physical Properties and Elemental Abundances of $z < 1$ Lyman Limit Systems* (to be submitted)
2. **Zahedy, F. S.**, Chen, H.-W., Boettcher, E., Rauch, M., French, K. D., Zabludoff, A. I., 2020, *Evidence for Late-Time Feedback from the Discovery of Multiphase Gas in a Massive Elliptical at $z = 0.4$* (submitted)
3. Chen, H.-W., **Zahedy, F. S.**, 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
4. Connor, T., **Zahedy, F. S.**, Chen, H.-W., Cooper, T. J., Mulchaey, J. S., & Vikhlinin, A., 2019, *COS Observations of the Cosmic Web: A Search for the Cooler Components of a Hot, X-ray Identified Filament*, ApJ Letters, 884, L20
5. **Zahedy, F. S.**, Rauch, M., Chen, H.-W., Carswell, R. F., Stark, A. A., & Stalder, B., 2019, *Probing IGM Accretion onto $z \sim 2.8$ Ly α emitters*, MNRAS, 486, 1392
6. **Zahedy, F. S.**, Chen, H.-W., Johnson, S. D., Pierce, R. M., Rauch, M., Huang, Y.-H., Weiner, B. J., Gauthier, J.-R., 2019, *Characterizing Circumgalactic Gas around Massive Ellipticals at $z \sim 0.4$ - II. Physical Properties and Elemental Abundances*, MNRAS, 484, 2257
7. 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 $z \sim 0.4$ - I. Initial Results*, MNRAS, 479, 2547
8. **Zahedy, F. S.**, Chen, H.-W., Rauch, M., & Zabludoff, A. I., 2017, *HST Detection of Extended Neutral Hydrogen in a Massive Elliptical at $z = 0.4$* , ApJ Letters, 846, L29
9. **Zahedy, F. S.**, Chen, H.-W., Gauthier, J.-R., & Rauch, M., 2017, *On the Radial Profile of Gas-phase Fe/ α Ratio Around Distant Galaxies*, MNRAS, 466, 1071
10. **Zahedy, F. S.**, Chen, H.-W., Rauch, M., Wilson, M. L., & Zabludoff, A. I., 2016, *Probing the Cool Interstellar and Circumgalactic Gas of Three Massive Lensing Galaxies at $z = 0.4-0.7$* , MNRAS, 458, 2423
11. Hunter, D. A., **Zahedy, F. S.**, Bowsher, E. C., Wilcots, E. M., Kepley, A. A., Goad, V., 2011, *Mapping the Extended HI Distribution of Three Dwarf Galaxies*, AJ, 142, 173

JOURNAL PUBLICATIONS (AS CO-AUTHOR)

1. Huang, Y.-H., Chen, H.-W., Shethman, S. A., Johnson, S. D., **Zahedy, F. S.**, Helsby, J. E., Gauthier, J.-R., Thompson, I. B., 2020, *A Complete Census of Circumgalactic MgII at Redshift $z < 0.5$* (MNRAS, in review)
2. Boettcher, E., Chen, H.-W., **Zahedy, F. S.**, et al., 2020, *The Cosmic Ultraviolet Baryon Survey (CUBS) - II. Discovery of an H₂-Bearing DLA in the Vicinity of an Early-Type Galaxy at $z = 0.576$* (ApJ, in review)
3. Gaikwad, P., Rauch, M., Haehnelt, M. G., Puchwein, E., Bolton, J. S., Keating, L. C., Kulkarni, G., Iršič, V., Bañados, E., Becker, G. D., Boera, E., **Zahedy, F. S.**, Chen, H.-W., Carswell, R. F., Chardin, J., Rorai, A., 2020, *Probing the thermal state of the intergalactic medium at $z > 5$ with the transmission spikes in high-resolution Ly- α forest spectra*, MNRAS, 494, 5091

4. Chen, H.-W., Boettcher, E., Johnson, S. D., **Zahedy, F. S.**, Rudie, G. C., Cooksey, K. L., Rauch, M., & Mulchaey, J. S., 2019, *A Giant Intragroup Nebula Hosting a Damped Ly α Absorbers at $z=0.313$* , ApJ Letters, 878, L33
5. Voit, G. M., Donahue, M., **Zahedy, F. S.**, Chen, H.-W., Werk, J. K., Bryan, G. L., O'Shea, B. W., 2019, *Circumgalactic Pressure Profiles Indicate Precipitation-Limited Atmospheres for Mstar $\sim 10^9 - 10^{11.5} M_{\text{sun}}$* , ApJ Letters, 879, L1
6. Chen, H.-W., Johnson, S. D., Straka, L. A., **Zahedy, F. S.**, Schaye, J., Muzahid, S., Bouche, N., Cantalupo, S., Marino, R. A., 2019, Wendt, M., *Characterizing Circumgalactic Gas around Massive Ellipticals at $z\sim 0.4$: III. The Galactic Environment of a Chemically Pristine Lyman Limit Absorber*, MNRAS, 484, 431
7. 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*, ApJL, 842, L19

SCIENCE WHITE PAPERS AND NON-REFEREED PUBLICATIONS

1. Voit, G. M., et al., *Circumgalactic Gas and the Precipitation Limit*, 2019, Astro2020: Decadal Survey on Astronomy and Astrophysics, science white papers, Bulletin of the American Astronomical Society, Vol. 51, Issue 3, id. 405
2. Chen, H.-W., et al., *Tracking the Baryon Cycle in Emission and in Absorption*, 2019, Astro2020: Decadal Survey on Astronomy and Astrophysics, science white papers, Bulletin of the American Astronomical Society, Vol. 51, Issue 3, id. 329
3. Rudie, G. C., et al., *Observing Galaxies and Dissecting their Baryon Cycle at Cosmic Noon*, 2019, Astro2020: Decadal Survey on Astronomy and Astrophysics, science white papers, Bulletin of the American Astronomical Society, Vol. 51, Issue 3, id. 148

PREVIOUS RESEARCH EXPERIENCE

Research Assistant at The University of Chicago, <i>with Prof. Hsiao-Wen Chen</i>	2013 - 2019
Brinson Predoctoral Fellow at Carnegie Observatories, <i>with Dr. Michael Rauch</i>	2016 - 2017
Undergraduate Researcher at MIT, <i>with Prof. Jacqueline Hewitt</i>	2011
Undergraduate Researcher at Lowell Observatory, <i>with Dr. Deidre Hunter</i>	2010
Undergraduate Researcher at MIT, <i>with Prof. James L. Elliot</i>	2010

SUCCESSFUL OBSERVING PROPOSALS (AS PRINCIPAL INVESTIGATOR)

The Magellan Telescopes : 15 nights	2019 - present
HST COS Cycle 25 , <i>Resolving the Multiphase ISM of an Elliptical Galaxy at $z\sim 0.4$</i> (GO-15250): 11 orbits	2017
HST STIS Cycle 24 , <i>Resolving Fe-rich Neutral ISM in a Massive Quiescent Galaxy at $z\sim 0.4$</i> (GO-14751): 3 orbits	2016

SUCCESSFUL OBSERVING PROPOSALS (AS CO-INVESTIGATOR)

The Magellan Telescopes: 40+ nights	2014 - 2020
ESO/VLT MUSE: 49.5 hours	2016 - 2019
HST COS Cycle 25 , <i>COS Ultraviolet Baryon Survey</i> (GO-15163): 169 orbits	2017
HST COS Cycle 25 , <i>UV Observation of a QSO Sightline Intersecting an X-ray Identified Filament of the Cosmic Web</i> (GO-15198): 11 orbits	2017
HST ACS Cycle 25 , <i>Unveiling Quasar Fueling through a Public Snapshot Survey of Quasar Host Environments</i> (SNAP-15279): 124 targets	2017
HST ACS Cycle 24 , <i>Differentiating Gas Infall and Outflows with Resolved Star Formation Morphology</i> (GO-14667): 5 orbits	2017
NOAO Gemini GMOS-N: 2 nights	2015
MMT Hectospec & MAESTRO: 2 nights	2015

SCIENTIFIC TALKS

Epoch of Galaxy Quenching, Kavli Institute for Cosmology, Cambridge, UK (virtual)	2020
Center for Computational Astrophysics Lunch Talk, Flatiron Institute, NY (virtual)	2020
The Circumgalactic Medium around Galaxies: When Baryons Invest Halos, Annual IAP Colloquium, Paris, France (virtual)	2020
Quenching and Transformation Through Cosmic Time, Aspen Center for Physics, CO	2020
UCSB Astro Lunch, UC Santa Barbara, Santa Barbara, CA	2019
The Cosmic Baryon Cycle: 7th GMT Community Science Meeting, Carlsbad, CA	2019
Dissertation Talk, the 233rd American Astronomical Society Meeting, Seattle, WA	2019
Princeton University Astrophysics Galread Seminar, Princeton, NJ	2018
MIT Astrophysics Brown Bag Lunch Talk, Cambridge, MA	2018
Steward Observatory Galaxy Group Talk, Tucson, AZ	2018
Carnegie Observatories Lunch Talk, Pasadena, CA	2018
Northwestern University Circumgalactic Medium Workshop, Evanston, IL	2018
Intergalactic Interconnections Conference, Marseille, France	2018
The Circle of Life: Connecting the Intergalactic, Circumgalactic, and Interstellar Media, Kruger Park, South Africa	2017
STScI Spring Symposium: Lifecycle of Metals Throughout the Universe, Baltimore, MD	2017
Magellan Science Meeting, Washington, D.C.	2016

From Wall to Web Conference, Berlin, Germany	2016
Gas/Galaxies on Top of Quasars (GOTOQ) Workshop, Pittsburgh, PA	2016
Lowell Observatory Colloquia - MIT Field Camp Talks, Flagstaff, AZ	2011

SERVICE, TEACHING, AND OUTREACH

Scientific Referee for The Astrophysical Journal (ApJ), The Astrophysical Journal Letters (ApJL), and the Monthly Notices for the Royal Astronomical Society (MNRAS)	2018 - present
Panelist for the Hubble Space Telescope Time Allocation Committee (Cycle 28)	2020
Proposal Reviewer for the NASA Earth and Space Science Graduate Research Fellowship Program	2020
Mentor and Instructor, Carnegie Astrophysics Summer Student Internship (CASSI)	2020
Volunteer, Carnegie Observatories Annual Open House	2019
Graduate Admissions Committee, The University of Chicago	2018 - 2019
Astronomy Conversations Presenter, Adler Planetarium	2015 - 2016
Graduate Student Representative to the Faculty, Department of Astronomy & Astrophysics, The University of Chicago	2014 - 2016
Teaching Assistant, Department of Astronomy & Astrophysics, The University of Chicago (five academic quarters)	2013 - 2015
Teaching Assistant, the Experimental Study Group (ESG), MIT	2010
Peer Advisor, The Experimental Study Group (ESG), MIT	2010 - 2011

ACADEMIC REFERENCES

Prof. Hsiao-Wen Chen
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Dr. Michael Rauch
Carnegie Observatories | (626) 304-0262 | mr@obs.carnegiescience.edu

Prof. Ann Zabludoff
The University of Arizona | (520) 626-2509 | azabludoff@as.arizona.edu