Micaela B. Bagley

curriculum vitae

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EDUCATION

2018	**Ph.D.** in Astrophysics, University of Minnesota Advisor: Claudia Scarlata
2010	**B.S.** in Physics & Astronomy, University of Rochester Advisor: Alice C. Quillen

POSITIONS

2018-present	**Postdoctoral Fellow**, University of Texas at Austin
2012-2018	**Graduate Student Research Assistant**, University of Minnesota
2016	**Visiting Graduate Student Research Assistant**, IPAC/Caltech
2012-2014	**Graduate Student Teaching Assistant**, University of Minnesota
2010-2012	**Research Specialist**, Steward Observatory, University of Arizona Observing, data reduction, photometry in support of multiple programs
2009-2010	**Undergraduate Student Research Assistant**, University of Rochester

RESEARCH INTERESTS

Galaxy formation and evolution; Lyman-α emitters during reionization; local analogs of high-redshift galaxies; Lyman continuum and Lyman-α photon escape; emission line galaxies; clustering

PRESENTATIONS

December 2021	**Contributed Talk**, "Constraining Feedback Mechanisms in Galaxies Across Cosmic Time with NGDEEP", SAZARAC-SIP Early Galaxies Near and Far
November 2021	**Contributed Talk**, "UV luminosity functions at $z = 6 - 9$ in *Roman* deep fields", Roman Science Team Community Briefing
October 2020	**Contributed Talk**, "Going deep with *Roman*: the $z > 9$ UV luminosity function", Galaxy Formation & Evolution in the Era of the *Nancy Grace Roman Space Telescope*

PRESENTATIONS (CONTINUED)

July 2020	**Contributed Talk**, "A Search for Bright $z \sim 9$ Galaxies in Parallel", Summer All Zoom Epoch of Reionization Astronomy Conference
July 2019	**Contributed Talk**, "A Search for Bright $z \sim 9$ Galaxies in Parallel", Barefoot Reionization: Exploring the First Billion Years of the Universe, Cairns, Australia
January 2019	**Contributed Talk**, "A Search for Bright Galaxies at $z > 9$", The Growth of Galaxies in the Early Universe V, Sesto, Italy
June 2018	**Plenary Talk**, "Euclid Predictions from HST Grism Surveys", Euclid Consortium Annual Meeting, Bonn, Germany **Invited as recipient of the Euclid Special Talent And Recognition (STAR) Prize**
January 2018	**Dissertation Talk**, "Approaching reionization from two directions: high-redshift Lyman-alpha emitters and local analogs", AAS Meeting 231, National Harbor, Maryland
June 2017	**Plenary Talk**, "A Mini-Euclid: Predictions from HST Grism Surveys", Euclid Consortium Annual Meeting, London, England
May 2017	**Cosmology Seminar**, "A high space density of luminous Lyα emitters at $z \sim 6.5$", University of Minnesota
June 2016	**Contributed Talk**, "Predictions for Euclid using WISP and 3DHST", Euclid Consortium Annual Meeting, Lisbon, Portugal
October 2016	**Contributed Poster**, Bagley, M. B., Scarlata C., et al. "Studying the Environment around Lyα Emitters During Reionization with JWST" Exploring the Universe with JWST, Montreal, Canada
January 2016	**Contributed Poster**, Bagley, M. B., Scarlata, C., et al. "A Search for $z > 6.5$ Lyman-alpha Emitting Galaxies with WISP" AAS Meeting 227, Orlando, Florida
May 2011	**Contributed Poster**, Bagley, M. B., Kim, J. S., et al. "Multi-wavelength Analysis of Young Stellar Objects in the W4 Star Forming Region" AAS Meeting 218, Boston, Massachusetts

SELECTED PUBLICATIONS

2021	Tacchella, S., Finkelstein, S. L., **Bagley, M.**, Dickinson, M., et al. "On the Stellar Populations of Galaxies at z=9-11: The Growth of Metals and Stellar Mass at Early Times", arXiv:2111.05351
2021	Finkelstein, S. L., **Bagley, M.**, Song, M., Larson, R., et al. "A Census of the Bright z=8.5-11 Universe with the Hubble and Spitzer Space Telescopes in the CANDELS Fields", arXiv:2106.13813

SELECTED PUBLICATIONS (CONTINUED)

2020 **Bagley, M. B.**, Scarlata, C., Mehta, V., Teplitz, H., Baronchelli, I. et al. "HST Grism-derived Forecasts for Future Galazy Redshift Surveys", 2020, *Astrophysical Journal*, 897, 98

2020 Rojas-Ruiz, S, Finkelstein, S. L., **Bagley, M. B.**, Stevans, M. et al. "Probing the Bright End of the Rest-Frame Ultraviolet Luminosity Function at z=8−10 with Hubble Pure-Parallel Imaging", 2020, *Astrophysical Journal*, 891, 146

2019 Chavez Ortiz, O. A. & **Bagley, M. B.** "Six Local Analogs for High Redshift Galaxies", 2019, *Research Notes of the American Astronomical Society*, 3, 180

2018 Dickinson, H., Scarlata, C., Fortson, L., **Bagley, M.**, Mehta, V., et al. "Galaxy Nurseries: Crowdsourced Analysis of Slitless Spectroscopic Data", 2018, *Research Notes of the American Astronomical Society*, 2, 120

2017 **Bagley, M. B.**, Scarlata, C., Henry, A., Rafelski, M., Malkan, et al. "High Space Density of Luminous Lyman Alpha Emitters at $z \sim 6.5$", 2017, *Astrophysical Journal*, 837, 11

2015 Kiminki, M. M., Kim, J. S., **Bagley, M. B.**, Sherry, W. H., Rieke, G. H. "The O- and B-type Stellar Population in W3: Beyond the High-Density Layer", 2015, *Astrophysical Journal*, 813, 42

2015 Jones, T. J., **Bagley, M. B.**, Krejny, M., Andersson, B.-G., Bastien, P. "Grain Alignment in Starless Cores", 2015, *Astronomical Journal*, 149, 31

2011 Quillen, A. C., Dougherty, J., **Bagley, M.**, Minchev, I., Comparetta, J. "Structure in phase space associated with spiral and bar density waves in an N-body hybrid galactic disc", 2011, *Monthly Notices of the Royal Astronomical Society*, 417, 762

2009 **Bagley, M.**, Minchev, I., Quillen, A. C. "The morphology of galactic rings exterior to evolving bars: test-particle simulations", 2009, *Monthly Notices of the Royal Astronomical Society* 395, 537

TEACHING AND MENTORING EXPERIENCE

2021-present **Mentor** to Aubrey Medrano, Postbaccalaureate researcher University of Texas at Austin

2020-present **Postdoc Leader** of *JWST* subgroup in the Vertically-Integrated Projects (VIP) research program on galaxy evolution, University of Texas at Austin

TEACHING AND MENTORING EXPERIENCE (CONTINUED)

2019	**Mentor** to Oscar Chavez Ortiz, University of California, Berkeley TAURUS Summer research project at University of Texas at Austin
2019	**Guest Lecturer** AST307 — Introductory Undergraduate Astronomy Course, University of Texas at Austin
2017	**Mentor** to Aliza Beverage, University of Minnesota Undergraduate research project
2016	**Mentor** to Ali Swancutt, University of Minnesota Undergraduate senior thesis
2014-2015	**Mentor** to Jett Priewe, University of Minnesota Two undergraduate research projects
2012-2014	**Teaching Assistant**, "Exploring the Universe," University of Minnesota Head Teaching Assistant 2014 Awarded Best TA all semesters from student feedback/course evaluations

PROFESSIONAL SERVICE

Referee for the *Astrophysical Journal*

June 2020	**Local Organizing Committee**, Summer All Zoom Epoch of Reionization Astronomy Conference (SAZERAC)
January-February 2020	**Organizer and leader** of two local *JWST* proposal planning workshops, as a *JWST* Master Class graduate The University of Texas at Austin and Texas A&M
October 2019	**Science Organizing Committee**, Bash Fest, University of Texas at Austin

PUBLIC OUTREACH

August 2019 -present	**Astronomy on Tap ATX** Organizer and co-host, Austin, Texas
January 2019	**Astronomy on Tap ATX #52** Presentation on galaxies during the epoch of reionization, Austin, Texas
2012-2018	**Minnesota Institute for Astrophysics Public Outreach** Two to three events each semester, including presenting talks and observing at local schools, astronomy clubs, science fairs, and state parks
2015	**Jet Propulsion Lab Open House** Discussing Infrared Astronomy and IPAC missions, running interactive activities with an infrared camera

PUBLIC OUTREACH (CONTINUED)

2012-2014 | **Minnesota Institute for Astrophysics Public Observing**
Presenting short talks followed by observing with department telescopes, once a month during the school semester

SELECTED SUCCESSFUL PROPOSALS

2021 | "Leveraging Early Public JWST Data to Measure Luminosity Functions and Rest-UV Slopes from $6 < z < 12$", *JWST* Cycle 1 Archival Proposal, PI: **M. Bagley**, PID: 2687

2021 | "Spectroscopic Confirmation and Characterization of Bright Galaxies at $z\sim9$", *JWST*/NIRSpec (18 hours, Cycle 1)
Co-PI: **M. Bagley**, PID: 2426

2019 | "Spectroscopic Characterization of the Brightest Known Galaxy Candidate at $z > 9$," Keck/NIRES (1 night), PI: **M. Bagley**

2016 | "Lyα Emitters at $z\sim7$," Magellan/LDSS3 (2 nights), PI: P. McCarthy

2016 | "Spectroscopic Follow-up of $z \sim 7$ Lyα-emitters," LBT/MODS (0.5 nights) PI: C. Scarlata

2015 | "Emission Line Galaxy Constraints from HST: Towards Accurate Forecasts for WFIRST and Euclid", HST Cycle 23 Archival Proposal, PI: C. Scarlata

2011 | "A Survey of YSOs in the W3 and W4 Star-Forming Regions," MMT/Hectospec (3 nights), LBT/MODS (1 night), Bok 2.3m/90Prime (3 nights) PI: **M. B. Bagley**

MEMBERSHIPS

2016-present | Euclid Consortium

2016-present | American Astronomical Society

2012-2017 | Women in Physics and Astronomy
Executive Board Member 2016-2017

2010 | Phi Beta Kappa

OBSERVING EXPERIENCE

Hubble Space Telescope (WFC3); *Spitzer Space Telescope* (IRAC); Keck (NIRES); Large Binocular Telescope (MODS, LUCI); MMT Observatory (Hectospec, Blue & Red Channel Spectrographs); Magellan Telescopes (FIRE, LDSS3); Palomar Observatory (LFC, DoubleSpec); Bok Telescope (90Prime)

SIGNIFICANT LANGUAGE AND SOFTWARE EXPERIENCE

Python; Multi-Instrument Ramp Generator (Mirage); JWST Calibration Pipeline; IDL; IRAF; HTML/CSS; LaTeX; aXe/aXeSIM

NIRCam Instrument Lead for CEERS Survey:
NIRCam imaging simulations with CEERS observing specifications
NIRCam imaging reduction using the JWST Calibration Pipeline

Contributions to WFC3 Infrared Spectroscopic Parallel (WISP) Survey:
Multi-component sky subtraction in WFC3 grisms;
PSF-matched photometry on optical and Near-IR images;
Validation of automatic detection algorithm for emission lines;
Simulations for imaging and spectroscopic completeness analysis

Euclid: NISP Grism simulations with TIPS software

Additional Data Reduction:
Long-slit spectroscopic reduction pipeline, including trace detection, 2D sky subtraction and wavelength calibration, optimal extraction, and flux calibration;

Full reduction pipeline, flux calibration, and astrometric solutions for Palomar LFC imaging data

Websites developed and maintained:
→ CEERS Website
→ micaelabagley.github.io
→ Central Texas JWST Proposal Planning Workshops