

Jason Tumlinson

Space Telescope Science Institute
3700 San Martin Drive
Baltimore, Maryland 21218
tumlinson@stsci.edu

Education

B.A. 1997 Physics, Rice University, Houston, Texas

M.S. 1999 Astrophysical and Planetary Sciences, University of Colorado – Boulder

Ph. D. 2002 Astrophysical and Planetary Sciences, University of Colorado – Boulder

Academic Employment History

July 2014 - present, Associate Research Scientist, Center for Astrophysical Sciences, Johns Hopkins University

October 2010 - present, Associate Astronomer (with tenure from 2014)

July 2008 - October 2010: Assistant Astronomer, STScI (AURA tenure-track)

September 2005 – June 2008: Gilbert and Jaylee Mead Postdoctoral Fellow, Department of Physics and Yale Center for Astronomy and Astrophysics, Yale University

September 2002 – August 2005: Edwin P. Hubble Scientist, Department of Astronomy and Astrophysics, University of Chicago

January 1998 – August 2002: Research Assistant to J. Michael Shull, APS, University of Colorado – Boulder

Research Interests

Galaxy formation, interstellar and intergalactic matter, the first stars, nucleosynthesis

Technical Interests

Spectroscopy, mission operations, science optimization, future mission development

Supported Research

PI, “Collaborative Research: Multiscale Physics and Feedback in Real and Simulated Circumgalactic Gas Over Cosmic Time”, NSF AAG award starting September 2015, JHU is lead institution for \$870K award

Co-I, “MAST Interface to Synthetic Telescopes with yt (MISTY): Observing Simulations of the Intergalactic Medium”, HST Cy22 (theory, PI Peeples)

Co-I, “How Galaxy Mergers Affect Their Environment: Mapping the Multiphase Circumgalactic Medium of Close Kinematic Pairs” HST Cy22 (34 orbits, PI Rongmon Bordoloi)

Co-I, “Feeding and Feedback: The Impact of AGN on the Circumgalactic Medium”, HST Cy22 (52 orbits, PI Sara Ellison)

Co-I, “The COS Absorption Survey of Baryon Harbors (CASBaH): Probing the Circumgalactic Media of Galaxies from $z = 0$ to $z = 1.5$ ”, HST Cy22 (99 orbits, PI Todd Tripp)

Co-I, “A Non-Universal Initial Mass Function in the Ultra-Faint Galaxy Coma Berenices”, HST Cy21 (44 orbits, PI Marla Geha)

Co-I, “The Skeleton in the Closet: Testing the Effect of HII Region Self-Enrichment Using Archival STIS Data”, HST Cy21 (archival, PI Jessica Werk)

Co-I, “The Closest Galactic Wind: UV Properties of the Milky Way’s Nuclear Outflow”, HST Cy21, (49 orbits, PI Andrew Fox)

Co-I, “Directly Probing $>10^6$ K Gas in Lyman Limit Absorbers at $z > 2$ ”, HST Cy21 (60 orbits, PI Todd Tripp)

PI, “COS-Halos: New FUV Measurements of Baryons and Metals in the Inner Circumgalactic Medium”, HST Cy20 (14 orbits)

Co-I, “The Sensitive Side of Galaxy Formation: How sub- L^* Galaxies Accrete, Form Stars, and Enrich the IGM”, HST Cy20 (Theory, PI Ben Oppenheimer)

Co-I, “Understanding the Gas Cycle in Galaxies”, HST Cy19 (119 orbits, PI Tim Heckman)

PI, “How Dwarf Galaxies Got that Way: A Map of Galaxy Accretion and Feedback Below L^* ”, HST Cy18 (129 orbits) [*COS-Dwarfs*]

PI, “How Galaxies Acquire their Gas: A Map of Multiphase Accretion and Feedback in Gaseous Galaxy Halos”, HST Cy17 (134 orbits) [*COS-Halos*]

Co-I, “Molecule Formation at High Extinction in the LMC/SMC”, FUSE Cy3

PI, “IGM Phases and Metals with New SDSS QSOs”, HST Cy12

PI, “IGM Phases and HVCs in 37 SDSS Galaxy Groups”, FUSE Cycle 5

Professional Activities and Service

Member of AURA “JWST and Beyond” Committee (2013-present)

Member of STScI Director’s Deep Fields Science Committee, led to Frontier Fields (2012)

SOC Member, UV Astronomy: HST and Beyond, (Kauai, 2012)

SOC Member, The Dynamic Nature of Halo Baryons, Lorentz Center (Leiden, 2012)

Science Team, *SYNERGY* SMEX Mission (proposed 2011)

Member of Astro2010 Science Frontier Panel on the Galactic Neighborhood (2009)

Associate Member of the FUSE Principal Investigator Team (1999-2007)

Visiting Scholar, KITP, “Star Formation through Cosmic Time” (Oct. 2007)

NASA FUSE General Observer Peer Review Panel (2003)

Science Team, Star Formation Observatory, NASA Astrophysics Concept Study (proposed)

Science Team, High-Orbit Origins Satellite (HORUS) NASA Origins Probe Concept Study

Visiting Scholar, Kavli Institute for Theoretical Physics, “IGM/Galaxy Interactions”, Nov. 2004

STScI Service

Member of the Executive Committee of the Senior Science Staff, 2015-present

Member of Science Personnel Committee, 2014-present

Member of Science Recruitment Committee, 2013-present

Mentor to 7 STScI Postdocs (2013-present)

Member of Ad-Hoc Senior Science Staff Bylaws Review Committee (2012)

SOC Chair, 2012 May Symposium on “Gas Flows In Galaxies”

Organizer of Postdoc Proposal Workshop (2012) and Job Application Workshop (2013)
Science Evaluation Committee (2011-2012)
Colloquium Committee (2009-2010)
Giacconi Fellowship Selection Committee (2010)
SOC Member, 2010 May Symposium on “Stellar Populations in a Cosmological Context”
Coordinator of Galaxy Formation Research Group / Journal Club (2008-present)

Refereed Publications (N=86 refereed, 4230 citations, h = 42)

- Kumari, N., Fox, A. J., **Tumlinson**, J., Thom, C., Westmeier, T., & Ely, J. 2015 “A Compact High Velocity Cloud near the Magellanic Stream: Metallicity and Small-scale Structure”, *ApJ*, 800, 44
- Werk, J. K., Prochaska, J. X., **Tumlinson**, J., Peebles, M. S., Tripp, T. M., and 11 co-authors 2014 “The COS-Halos Survey: Physical Conditions and Baryonic Mass in the Low-Redshift Circumgalactic Medium”, *ApJ*, 792, 8
- Fox, A. J. and 11 co-authors, “Probing the Fermi Bubbles in Ultraviolet Absorption: A Spectroscopic Signature of the Milky Way’s Biconical Nuclear Outflow”, *ApJ*, 799, L7
- Bordoloi, R., **Tumlinson**, J., Werk, J. K., Prochaska, J. X., Peebles, M. S., Oppenheimer, B. D., Tripp, T. M., et al. 2014, “The CIV Reservoir around Dwarf Galaxies: Results from the COS-Dwarfs Survey”, *ApJ*, 796, 136
- Carollo, D., Freeman, K., Beers, T. C., Placco, V. M., **Tumlinson**, J., & Martell, S. “C-enhanced Metal-poor Stars: CEMP-s and CEMP-no Sub-classes in the Halo System of the Milky Way”, *ApJ*, 788, 180
- Fox, A.J., and 16 co-authors, “The COS/UVES Absorption Survey of the Magellanic Stream III. Ionization, Total Mass, and Inflow Rate onto the Milky Way”, *ApJ*, 787, 147
- Gómez, F. A., Coleman-Smith, C. E., O’Shea, B. W., **Tumlinson**, J., & Wolpert, R. L. “Dissecting Galaxy Formation Models with Sensitivity Analysis: A New Approach to Constrain the Milky Way Formation History”, *ApJ*, 787, 20 [*ChemTreeN*]
- Peebles, M. S., Werk, J. K., **Tumlinson**, J., Oppenheimer, B. D., Prochaska, J. X., & Katz, N., 2013, “A Budget and Accounting of Metals at $z \sim 0$: Results from the COS-Halos Survey”, *ApJ*, 786, 54 [*COS-Halos*]
- Oliveira, C. M., Sembach, K. R., **Tumlinson**, J., O’Meara, J., & Thom, C. “HST/ COS Detection of Deuterated Molecular Hydrogen in a Damped Ly α System at $z = 0.18$ ”, *ApJ*, 783, 22
- Fox, A. J., Lehner, N., **Tumlinson**, J., Howk, J. C., Tripp, T. M., Prochaska, J. X., O’Meara, J. M., Werk, J. K., Bordoloi, R., Katz, N., Oppenheimer, B. D., Davé, R., 2013, “The High-Ion Content and Kinematics of Low-Redshift Lyman Limit Systems”, *ApJ*, 778, 187 [*COS-Halos*]
- Tumlinson**, J. and the COS-Halos team, 2013, “The COS-Halos Survey: Rationale, Design, and a Census of Circumgalactic Neutral Hydrogen”, *ApJ*, 777, 59 [*COS-Halos*]
- Lee, D. M., Johnston, K. V., **Tumlinson**, J., Sen, B., & Simon, J. D., 2013, “A Mass-dependent Yield Origin of Neutron-capture Element Abundance Distributions in Ultra-faint Dwarfs”, *ApJ*, 774, 103
- Corlies, L., Johnston, K. V., **Tumlinson**, J., & Bryan, G. 2013, “Chemical Abundance Patterns and the Early Environment of Dwarf Galaxies”, *ApJ*, 773, 105

- Simpson, C., Bryan, G. L., Johnston, K. V., Smith, B. D., Mac Low, M.-M., Sharma, S., & **Tumlinson, J.** 2013, “The Effect of Feedback and Reionization on Star Formation in Low-mass Dwarf Galaxy Haloes”, *MNRAS*, 432, 1989
- Geha, M., Brown, T. M., **Tumlinson, J.**, Kalirai, J. S., Simon, J. D., Kirby, E. N., VandenBerg, D. A., Munoz, R. R., Avila, R. J., Guhathakurta, P., & Ferguson, H. C. 2013, “The Stellar Initial Mass Function of Ultra-Faint Dwarf Galaxies: Evidence for IMF Variations with Galactic Environment”, *ApJ*, 771, 29
- Lehner, N., Howk, J. C., Tripp, T. M., **Tumlinson, J.** Prochaska, J. X., O’Meara, J. M., Thom, C., Werk, J. K., Fox, A. J., Ribaldo, J. 2013, “The Bimodal Metallicity Distribution of the Cool Circumgalactic Medium at $z < 1$ ”, *ApJ*, 770, 138 [*COS-Halos*]
- Werk, J. K., Prochaska, J. X., Thom, C., **Tumlinson, J.**, Tripp, T. M., O’Meara, J. M., Peebles, M. S. 2013, “The COS-Halos Survey: An Empirical Description of Metal-line Absorption in the Low-redshift Circumgalactic Medium”, *ApJS*, 204, 17 [*COS-Halos*]
- Gómez, F. A., Coleman-Smith, C. E., O’Shea, B. W., **Tumlinson, J.**, & Wolpert, R. L. 2012, “Characterizing the Formation History of Milky Way Stellar Halos with Model Emulators”, *ApJ*, 760, 112
- Thom, C., **Tumlinson, J.**, Werk, J. K., Prochaska, J. X., Oppenheimer, B. D., Peebles, M. S., Tripp, T. M., and 6 others, 2012 “Not Dead Yet: Cool Circumgalactic Gas in the Halos of Early Type Galaxies”, *ApJ*, 758, L41 [*COS-Halos*]
- Lehner, N., Howk, J. C., Thom, C., Fox, A. J., Tumlinson, J., Tripp, T. M., Meiring, J. D. 2012, “High-velocity Clouds as Streams of Ionized and Neutral Gas in the Halo of the Milky Way”, *MNRAS*, 424, 2896 [*COS-Halos*]
- Brown, T. M., **Tumlinson, J.**, Geha, M., Kirby, E. N., VandenBerg, D. A., Munoz, R. R., Kalirai, J. S., Simon, J. D., Avila, R. J., Guhathakurta, P., Renzini, A., Ferguson, H. C. 2012 “The Primeval Populations of the Ultra-faint Dwarf Galaxies”, *ApJ*, 753, L21
- Postman, M. et al. 2012 “Advanced Technology Large-Aperture Space Telescope: Science Drivers and Technology Developments”, *SPIE Optical Engineering*, 51, 011007
- Werk, J. K., Prochaska, J. X., Thom, C., **Tumlinson, J.**, et al. 2012, “The COS-Halos Survey: Keck LRIS and Magellan MagE Optical Spectroscopy”, *ApJS*, 198, 3 [*COS-Halos*]
- Battisti, A. J., Meiring, J. D., Tripp, T. M., Prochaska, J. X., Werk, J. K., Jenkins, E. B., Lehner, N., **Tumlinson, J.**, Thom, C. 2012, “The First Observations of Low-redshift Damped Ly α Systems with the Cosmic Origins Spectrograph: Chemical Abundances and Affiliated Galaxies”, *ApJ*, 744, 93 [*COS-Halos*]
- Ribaldo, J., et al., 2011, “Evidence for Cold Accretion: Primitive Gas Flowing onto a Galaxy at $z \sim 0.274$ ”, *ApJ*, 743, 207
- Tripp, T. M., et al. 2011, “The Hidden Mass and Large Spatial Extent of a Post-Starburst Galaxy Outflow”, *ApJ*, 334, 952
- Tumlinson, J.**, Thom, C., Werk, J. K., Prochaska, J. X., Tripp, T. M., et al. 2011, “The Large, Oxygen-rich Halos of Star-Forming Galaxies are a Major Reservoir of Cosmic Metals”, *Science*, 334, 948 [*COS-Halos*]
- Thom, C., Werk, J. K., **Tumlinson, J.**, Prochaska, J. X., Meiring, J. D., et al. 2011, “The Gas Galaxy Connection at $z \sim 0.35$: O VI and H I Absorption toward J0943+0531”, *ApJ*, 736, 1 [*COS-Halos*]
- da Silva, R. L., Prochaska, J. X., Rosario, D.; **Tumlinson, J.**, Tripp, T. M., 2011, “Shining Light on Merging Galaxies. I. The Ongoing Merger of a Quasar with a Green Valley Galaxy”,

ApJ, 735, 54

- Tumlinson, J.**, Werk, J. K., Thom, C., Meiring, J. D., Prochaska, J. X., et al. 2011 “Multiphase Gas in Galaxy Halos: The O VI Lyman-limit System toward J1009+0713”, ApJ, 733, 111 [*COS-Halos*]
- Meiring, J. D., Tripp, T. M., Prochaska, J. X., **Tumlinson, J.**, Werk, J., et al. 2011, “The First Observations of Low-redshift Damped Ly α Systems with the Cosmic Origins Spectrograph”, ApJ, 732, 35 [*COS-Halos*]
- Brown, T. M., Sahu, K., Anderson, J., **Tumlinson, J.**, Valenti, J. A., et al. 2010, “The WFC3 Galactic Bulge Treasury Program: Metallicity Estimates for the Stellar Population and Exoplanet Hosts”, ApJ, 725, L19
- Milutinovic, N., Ellison, S. L., Prochaska, J. X., **Tumlinson, J.** 2010, “Ionization Corrections in a Multiphase Interstellar Medium: Lessons from a $z \sim 2$ DLA”, MNRAS, 408, 2071
- Shull, J. M., France, K., Danforth, C. W., Smith, B., & **Tumlinson, J.** 2010, “HST/COS Observations of the Quasar HE 2347-4342: Probing the Epoch of He II Patchy Reionization at Redshifts $z = 2.4-2.9$ ”, ApJ, 722, 1312
- Tumlinson, J.**, Malec, A. L., Carswell, R. F., Murphy, M. T., et al. 2010 “Cosmological Concordance or Chemical Coincidence? Deuterated Molecular Hydrogen Abundances at High Redshift”, ApJ, 718, L156
- Okrochkov, M., & **Tumlinson, J.** 2010 “Galactic Archaeology and the High-Redshift Detectability of Milky Way Halo Progenitor Galaxies”, ApJL, 716, L41 [*ChemTreeN*]
- Malec, A. L., Buning, R., Murphy, M. T., Milutinovic, N., Ellison, S. L., Prochaska, J. X., Kaper, L., **Tumlinson, J.**, Carswell, R. F., & Ubachs, W. 2010, “Keck Telescope Constraint on Cosmological Variation of the Proton-to-Electron Mass Ratio”, MNRAS, 403, 1541
- Tumlinson, J.** 2010 “Chemical Evolution in Hierarchical Models of Cosmic Structure II: The Formation of the Milky Way Halo and the Distribution of the Oldest Stars”, ApJ, 708, 1398 [*ChemTreeN*]
- Krumholz, Mark R., Ellison, Sara L., Prochaska, J. Xavier, & **Tumlinson, J.** 2010 “On the Absence of High Metallicity-High Column Density Damped Ly α Systems: Molecule Formation in a Two-Phase Interstellar Medium”, ApJ, 701, L12
- Krumholz, M. R., McKee, C. F., & **Tumlinson, J.** 2009 “The Star Formation Law in Atomic and Molecular Gas” ApJ 699, 850
- Krumholz, M. R., McKee, C. F., & **Tumlinson, J.** 2009, “The Atomic-to-Molecular Transition in Galaxies. II. H I and H₂ Column Densities” ApJ 693, 216
- Rachford, B. L., Snow, T. P., et al. (incl. **Tumlinson**) “Molecular Hydrogen in the Far Ultraviolet Spectroscopic Explorer Translucent Lines of Sight: The Full Sample”, ApJS, 180, 125
- Krumholz, M. R., McKee, C. F., & **Tumlinson, J.** 2008 “The Atomic-to-Molecular Transition in Galaxies. I. An Analytic Approximation for Photodissociation Fronts in Finite Clouds” ApJ 689, 865
- Whalen, D., Prochaska, J. X., Heger, A., **Tumlinson, J.**, 2008, “The Molecular Hydrogen Deficit in Gamma-Ray Burst Afterglows” ApJ, 682, 1114
- Font, A. S., Johnston, K. V., Ferguson, A. M. N., Bullock, J. S., Robertson, B. E., **Tumlinson, J.**, & Guhathakurta, P. 2008, “The Stellar Content of Galaxy Halos: A Comparison Between LCDM Models and Observations”, ApJ, 673, 215

- Tumlinson, J.** 2007 “Carbon-Enhanced Metal-Poor Stars, the Cosmic Microwave Background, and the Stellar IMF in the Early Universe”, *ApJL*, 664, L63 [*ChemTreeN*]
- Tumlinson, J., Prochaska, J. X., Chen, H.-W., Dessauges-Zavadsky, M., & Bloom, J. S.** 2007 “Missing Molecular Hydrogen and the Physical Conditions of GRB Host Galaxies”, *ApJ*, 668, 667
- Tumlinson, J.** 2007 “Carbon-enriched Hyper-Metal-Poor Stars and the Stellar Initial Mass Function at Low Metallicity” *ApJ*, 665, 1361 [*ChemTreeN*]
- Keeney, B. A., Stocke, J. T., Rosenberg, J. L., **Tumlinson, J.**, & York, D. G. 2006, “Discovery of a Metal-Line Absorber Associated with a Dwarf Starburst Galaxy”, *AJ*, 124, 2496
- Conners, T. W., Kawata, D., Bailin, J., **Tumlinson, J.**, and Gibson, B. K. 2006 “On the origin of Anomalous Velocity Clouds in the Milky Way”, *ApJ*, 646, L53
- York, D. G., et al. “Average Extinction Curves and Relative Abundances for Quasi-stellar Object Absorption-line Systems at $1 \leq z_{\text{abs}} < 2$ ”, *MNRAS*, 367, 945
- Stocke, J. T., Penton, S. V., Danforth, C. W., Shull, J. M., & **Tumlinson, J.**, & McLin, K. 2006 “The Galaxy Environment of OVI Absorption Systems”, *ApJ*, 614, 217
- Tumlinson, J.** 2006b “Chemical Evolution in Hierarchical Models of Cosmic Structure I: Constraints on the Early Stellar Initial Mass Function”, *ApJ*, 614, 1 [*ChemTreeN*]
- Tumlinson, J.** 2006a, “Near-field Cosmology and the First Stars: Insights from Chemical Evolution”, *New Astronomy Reviews*, 50, 101
- Gillmon, K. A., Shull, J. M., & **Tumlinson, J.**, & Danforth, C. W. 2006, “A FUSE Survey of Molecular Hydrogen in the Galactic Halo”, *ApJ*, 636, 891
- Tumlinson, J.**, & Fang, T. 2005 “Hot Baryons and the Distribution of Metals in the Intergalactic Medium”, *ApJ*, 623, L97
- Keeney, B.A., Momjian, E., Stocke, J. T., Carilli, C. L., & **Tumlinson, J.** 2005 “Absorption Line Study of Halo Gas in NGC 3067 toward 3C 232”, *ApJ*, 622, 267
- Tumlinson, J.**, Shull, J. M., Giroux, M. L., & Stocke, J. T. “The Hot IGM – Galaxy Connection: Two Strong O VI Absorbers toward PG1211+143”, *ApJ*, 620, 95
- Tumlinson, J.**, Venkatesan, A., & Shull, J. M. 2004, “Nucleosynthesis, Reionization, and the Mass Function of the First Stars”, *ApJ*, 612, 602 (TVS04)
- Shull, J. M., **Tumlinson, J.**, Giroux, M. L., Kriss, G. A., et al. 2004, “The Fluctuating Intergalactic Radiation Field at Redshifts $z = 2.3-2.9$ from He II and H I Absorption toward HE 2347-4342”, *ApJ*, 2004, 600, 570
- Shull, J. M., **Tumlinson, J.**, & Giroux, M. L. 2003, “The Multiphase Intergalactic Medium toward PKS2155-304”, *ApJ*, 594, L107
- Venkatesan, A., **Tumlinson, J.**, & Shull, J. M. 2003, “Evolving Spectra of Population III Stars: Consequences for Cosmological Reionization”, *ApJ*, 584, 621 (VTS03)
- Tumlinson, J.**, Shull, J. M., & Venkatesan, A. 2003, “Cosmological Effects of the First Stars: Evolving Spectra of Population III”, *ApJ*, 584, 608 (TSV03)
- Browning, M. K., **Tumlinson, J.**, & Shull, J. M. 2003 “Inferring Physical Conditions in Interstellar Clouds of H₂”, *ApJ*, 582, 810
- Rachford, B. L., Snow, T. P., **Tumlinson, J.**, Shull, J. M., et al. 2002 “A FUSE Survey of

- Interstellar Molecular Hydrogen in Translucent Clouds”, *ApJ*, 577, 221
- Welsh, B. Y., Rachford, B. L., & **Tumlinson**, J. 2001, “High-velocity Molecular Hydrogen Gas Associated with the Monoceros Loop Supernova Remnant”, *A&A*, 381, 566
- Gibson, B. K., Giroux, M. L., Penton, S. V., Stocke, J. T., Shull, J. M., **Tumlinson**, J. 2001 “High-Velocity Cloud Complex C: Galactic Fuel or Galactic Waste?”, *AJ*, 122, 3280
- Tumlinson**, J., Shull, J. M., Rachford, B. L., Browning, M. L., Snow, T. P., Fullerton, A. W., Jenkins, E. B., Savage, B. D., Crowther, P. A., Moos, H. W., Sembach, K. S., Sonneborn, G., & York, D. G. 2002 “A FUSE Survey of Molecular Hydrogen in the Small and Large Magellanic Clouds”, *ApJ*, 566, 857
- Kriss, G. A., Shull, J. M., Oegerle, W. R., Zheng, W., Davidsen, A. F., Songaila, A., **Tumlinson**, J., et al. (12 others) 2001 “Resolving the Structure of Ionized Helium in the Intergalactic Medium with FUSE”, *Science*, 293, 1112
- Tripp, T. M., Giroux, M. L., Stocke, J. T., **Tumlinson**, J., & Oegerle, W. R. 2001 “The Ionization and Metallicity of the Intervening O VI Absorber at $z = 0.121$ in the Spectrum of H1821+643”, *ApJ*, 563, 724
- Rachford, B. L., Snow, T. P., **Tumlinson**, J., et al. 2001, “FUSE Observations of H₂ in Translucent Interstellar Clouds: II. The Line of Sight Toward HD 110432”, *ApJ*, 555, 839
- Tumlinson**, J., Giroux, M. L., & Shull, J. M. 2001 “Probing the First Stars with Hydrogen and Helium Recombination Emission”, *ApJ*, 550, L1 (TGS01)
- Shull, J. M., **Tumlinson**, J., Rachford, B. L., Snow, T. P., et al. “FUSE Observations of Diffuse Interstellar Molecular Hydrogen” 2000b, *ApJ*, 538, L73
- Shull, J. M., Giroux, M. L., Penton, S. V., **Tumlinson**, J., Stocke, J. T., et al. “FUSE Observations of the Low-Redshift Lyman-beta Forest” 2000, *ApJ*, 538, L13
- Snow, T. P., Rachford, B. L., **Tumlinson**, J., Shull, J. M., et al. “FUSE Observations of Molecular Hydrogen in Translucent Interstellar Clouds” 2000, *ApJ*, 538, L69
- Fullerton, A. W., . . . , **Tumlinson**, J., Willis, A. J. 2000 “FUSE Observations of the Stellar Winds of Two O7 Supergiants in the Magellanic Clouds”, *ApJ*, 538, L43
- Ferlet, R., Andre, M., . . . , **Tumlinson**, J., York, D. G., Moos, H. W. 2000 “FUSE Observations of the HD Molecule Toward HD 73882”, *ApJ*, 538, L69
- Tumlinson**, J., & Shull, J. M. 2000 “Zero-metallicity Stars and the Effects of the First Stars on Reionization”, *ApJ*, 528, L65
- Tumlinson**, J., Giroux, M.L., Shull, J.M., & Stocke, J.T. 1999 “New HST Observations of the Halo Gas of NGC 3067: Limits on the Extragalactic Ionizing Background at Low Redshift and the Lyman Continuum Escape Fraction”, *AJ*, 118, 2148
- Hartigan, P. M., Morse, J.A., **Tumlinson**, J., Raymond, J.C., Heathcote, S. 1999 “HST/FOS Optical and Ultraviolet Spectroscopy of the Bow Shock HH47A”, *ApJ* 512, 901

Invited Talks and Colloquia

- “Gas Perspectives on Galaxy Formation” at the First Calistoga Workshop on Astrophysics, Calistoga, CA, April 2014, *invited talk*
- “The Circumgalactic Medium: A New Window on Galactic Fueling, Quenching, and Recycling”, at Science with the Hubble Space Telescope IV, held at Accademia dei Lincei, March 2014, *invited talk*
- “The Circumgalactic Medium: A New Window on Galactic Fueling, Quenching, and Recycling”, STScI Colloquium series, February 2014, *departmental colloquium*
- “The Circumgalactic Medium: A View from Near and Afar”, at The Near-Field, Deep-Field Connection, held at UC Irvine, February 2014, *invited talk*
- “The CGM: Some Perspectives”, at The Impact of Gas Fueling, Quenching, and Feedback on the Growth of Galaxies Workshop, held at the University of Notre Dame, January 2014, *conference summary*
- “The First Stars and Galaxies: Prospects for Understanding them in the JWST Era”, Goddard Space Flight Center, November 2013, *departmental colloquium*
- “Baryons, Feedback, and Quenching: The Hubble/COS View of the CGM”, MPA Garching conference on “The Physical Link Between Galaxies and their Halos”, June 2013, *invited talk*
- “What is the Circumgalactic Medium?” UC Santa Barbara, January 2013, *departmental seminar*
- “What is the Circumgalactic Medium?” UCLA, January 2013, *departmental colloquium*
- 2012 COS-Halos Road Show: “What is the Circumgalactic Medium? A Major Reservoir of Galactic Baryons and Metals”, a synthesis of COS-Halos results so far, delivered as an invited speaker in numerous forms:
- (1) UC Irvine conference on “The Baryon Cycle”, June 2012
 - (2) “UV Astronomy: HST and Beyond”, Grand Hyatt Kauai, June 2012
 - (3) STScI/JHU HotSci Summer Talk Series, Baltimore, July 2012
 - (4) “The Evolving Universe II”, Catholic University, DC, July 2012
 - (5) “The Dynamic Nature of Baryons in Halos”, Lorentz Center, Leiden, August 2012
 - (6) MIT Department of Physics Colloquium, October 2012
- “Gas in Galaxy Halos: Accretion, Feedback, and a New Reservoir of Cosmic Metals”, University of Notre Dame, March 2012, *departmental colloquium*
- “Gas in Galaxy Halos: Accretion, Feedback, and a New Reservoir of Cosmic Metals”, George Mason University, October 2011, *departmental colloquium*
- “Gas in Galaxy Halos: Accretion, Feedback, and a New Reservoir of Cosmic Metals”, University of California, Santa Cruz, September 2011, *departmental colloquium*
- “Gas in Galaxy Halos: Accretion, Feedback, and a New Reservoir of Cosmic Metals”, Galaxies in Absorption Workshop, Boulder, Colorado, September 2011, *invited talk*
- “Gas in Galaxy Halos: Accretion, Feedback, and a New Reservoir of Cosmic Metals”, MPA / Garching Conference on Gas in Galaxies, Kloster Seeon, Munich, Germany, June 2011, *invited talk (delivered by proxy)*
- “Gas in Galaxy Halos: Some Intellectual History and the Latest News from HST”, Tufts University, Somerville, Massachusetts, May 2011, *departmental colloquium*

- “Gas in Galaxy Halos: Some Intellectual History and the Latest News from HST”, University of Chicago, May 2011, *departmental colloquium*
- “Gas Outside of Galaxies: Sixty Years of History, 20+ Years with HST, and What We are Doing Today”, Carnegie Observatories, Pasadena, California, February 2011, *departmental colloquium*
- “The First Stars and Galaxies, Chemical Evolution, and the Milky Way”, Workshop on Cosmic Chemical Evolution, St. Michaels, Maryland, June 2010, *invited review*
- “Gas Outside of Galaxies: Sixty Years of Intellectual History and 20+ Years with HST”, Science with HST III, Venice, Italy, October 2010, *invited review*
- “Gas Outside of Galaxies: Sixty Years of History, 20+ Years with HST, and What We are Doing Today”, Rice University, Houston, Texas, November 2010, *departmental colloquium*
- “What the Milky Way Teaches Us About Cosmic Chemical Evolution”, Workshop on Cosmic Chemical Evolution, St. Michaels, Maryland, June 2010, *invited talk*
- “The First Galaxies and the Fossil Record: Challenges for the Next Decade”, at Building Virtual Galaxies, a JINA Workshop, Michigan State University, April 2010, *invited review*
- “The First and Second Stars: Three Big Ideas and Three Challenges”, The First Stars and Galaxies: Challenges for the Next Decade, Austin, TX, March 2010, *invited talk*
- “The First Stars and Galaxies: Where Can We Find Them?”, University of Maryland, November 2009, *departmental colloquium*
- “The First Stars and Galaxies: Where Can We Find Them?”, Institute for Advanced Study, October 2009, *departmental seminar*
- “Galactic Archaeology and the First Stars”, Michigan State, April 2009, *departmental seminar*
- “Galactic Archaeology, APOGEE, and the First Stars”, Construction and Evolution of the Galaxy: New Surveys and New Perspectives”, Princeton, NJ, February 2009, *invited talk*
- “Galactic Archaeology and the First Stars”, Michigan State, April 2009, *departmental seminar*
- “The Milky Way and the First Stars”, Back the Galaxy II, Kavli Institute for Theoretical Physics, UCSB, September 2008, *invited talk*
- “First Light from the Fossil Record: A New Synthesis”, STScI, MIT, University of Massachusetts, Johns Hopkins University, University of Arizona, Spring 2008, *departmental colloquia and seminars*
- “The Dark Side of the IMF”, Dark Ages Symposium, DARK Center and Niels Bohr Institute, April 2007, *invited talk*
- “Most of the Baryons: What, When and Where?”, Astrophysics in the Next Decade: JWST and Concurrent Facilities, September 2007, *discussion moderator*
- “Unraveling the Galaxy to Find the First Stars”, University of Victoria (BC), Wesleyan, Rutgers, Michigan State, and Princeton, Spring 2007, *departmental colloquia and seminars*
- “Unraveling the Galaxy to Find the First Stars”, Institute for Nuclear Theory, University of Washington, July 2006, *invited talk and conference summary*
- “Nucleosynthesis by the First Stars”, Space Telescope Science Institute May Symposium, May 2006, *invited review*
- “Unraveling the Local Group to Find the First Stars”, Aspen Center for Physics Winter Conference on Local Group Cosmology, February 2006, *invited review*
- “Ending the Dark Ages: A New Synthesis Reveals the First Stars”, University of Michigan,

- October 2005, *departmental colloquium*
- “Chemical Evolution and Galaxy Formation: A New Synthesis Reveals the First Stars”
Workshop on Mass, Light, and Chemistry in the Early Universe, U. of Minnesota, October 2005, *invited talk*
- “Near-Field Cosmology, or, What the Galaxy Can Teach Us about the First Stars?”, Argonne National Laboratory, June 2005, *invited talk*
- “The First Stars: Nucleosynthesis and Reionization”, Workshop on First Light Detection, UC Irvine, May 2005, *invited talk*
- “The First Stars and Reionization”, National Radio Astronomy Observatory, February 2005, *departmental colloquium*
- “FUSE’s Five Years of Progress on the Interstellar Medium”, Astrophysics in the Far Ultraviolet: Five Years of Discovery with FUSE, August 2004, *invited review*
- “The First Stars: A Review”, New Windows on Star Formation in the Cosmos, The 15th Annual Astrophysics Conference in Maryland, October 2004, *invited review*
- “From Nucleosynthesis to Reionization: Observational Constraints on the Nature of the First Stars”, AAS, Denver, June 2004, First Stars and QSOs Special Session, *invited talk*
- “SDSS Probes the Galaxy/IGM Connection”, Department of Physics and Astronomy, Arizona State University, April 2004, *special colloquium*
- “The End of the Dark Ages: The First Stars and Reionization”, Department of Physics and Astronomy, Northwestern University, March 2004, *departmental colloquium*
- “SDSS Probes the Galaxy/IGM Connection”, Department of Physics and Astronomy, Arizona State University, April 2004, *special colloquium* “SDSS and VLST Probe the Galaxy/IGM Connection” at the Very Large Space Telescope Science Workshop, STScI, February 2004
- “The First Stars and Reionization”, Department of Astronomy, University of Wisconsin, Madison, February 2003, *departmental colloquium*
- “The First Stars and Reionization”, Department of Astronomy, University of Chicago, October 2002, *departmental colloquium*

Miscellaneous Publications

- Tumlinson, J.**, review of the book “The First Galaxies in the Universe”, by A. Loeb & S. Furlanetto, *Physics Today*, Feb 2014
- Tumlinson, J.**, Aloisi, A., Kriss, G. A., France, K., McCandliss, S., Sembach, K. R., et al. 2012, “Unique Astrophysics in the Lyman Ultraviolet”, white paper submission to NASA RFI “Science Objectives and Requirements for the Next UV/Visible Astrophysics Mission Concepts”, arXiv:1209.3272
- Tumlinson, J.** 2011, *Nature*, 472, 426, *Astronomy: A New Spin on the First Stars* (News and Views)
- Beers, T. C., & **Tumlinson, J.** 2006, “Seeing Stars”, News and Views summary of Conference “The First Stars and the Evolution of the Early Universe”, *Nature Physics*, 2, 511

Outreach and Public Talks

- “Halos: The Invisible Ecosystem of Galaxies”, *Astronomical Society of the Pacific Annual*

Meeting, Baltimore, August 2011

“How Galaxies Acquire Their Gas”, STScI Public Lecture, November 2010

“The Invisible Galaxy: New Views of the Milky Way”, STScI Public Lecture, June 2009

“Unraveling the Galaxy to Find the First Stars”, Leitner Observatory, Yale, December 2006

“The First Stars”, Chicago Astronomical Society at Adler Planetarium, Chicago, July 2004

Selected Conference Proceedings (Exclusive of Above)

Brown, T. M., **Tumlinson, J.**, Geha, M., Kirby, E., VandenBerg, D. A., Kalirai, J. S., Simon, J. D., Avila, R. J., Munoz, R. R., Guhathakurta, P., Renzini, A., Ferguson, H. C., Vargas, L. C., & Gennaro, M., 2013, “The Formation History of the Ultra-Faint Dwarf Galaxies”, arXiv:1310.0824

Prochaska, J. X., & **Tumlinson, J.** 2009 “Baryons: What, When and Where?”, invited review article for proceedings of “Astrophysics in the Next Decade: JWST and Concurrent Facilities”, Tucson

Ulmer, M.P., Kibblewhite, E.J., Herter, T. L., Thompson, L. A., Giovanelli, R., Harper, D.A., Kron, R. G., Mohr, J. J., Stacey, G. J., **Tumlinson, J.**, & York, D. G. “Large Telescope Project Dedicated to an Origins Survey”, Proceedings of the Second Baskog Workshop on Extremely Large Telescopes, ed. A. Ardeberg & T. Andersen, 2004, pp. 193-204

Gillmon, K., Shull, J. M., **Tumlinson, J.**, “FUSE Survey of Interstellar Molecular Hydrogen toward 40 High-Latitude AGN”, AAS, Denver, June 2004

Shull, J. M., Anderson, K. A., **Tumlinson, J.** “FUSE Survey of Interstellar Molecular Hydrogen toward 130 Galactic Disk Sightlines”, AAS, Denver, June 2004

Tumlinson, J., Shull, J. M., Venkatesan, A. “Cosmological Reionization by the First Stars: Evolving Spectra of Population III”, 27th IAP Colloquium, Paris, 2001

Tumlinson, J., Shull, J. M., Rachford, B., Snow, T. P., Jenkins, E. B., Savage, B. D., Sembach, K. R., Sonneborn, G., York, D. G. “FUSE Observations of Interstellar Molecular Hydrogen”, BAAS, 195, 6.08

Sonneborn, G., Shull, J. M., **Tumlinson, J.**, Jenkins, E. B., Savage, B. D., Moos, H. W., Sembach, K. R., York, D. G. “FUSE Observations of Interstellar Molecular Hydrogen in the Small Magellanic Cloud”, BAAS, 195, 6.10

Shull, J. M., Giroux, M. L., Penton, S. V., **Tumlinson, J.**, Jenkins, E. B., Savage, B. D., Sembach, K. R., York, D. G., “FUSE Observations of Intergalactic Lyman Beta Absorbers at Low Redshift”, BAAS, 195, 6.15

Snow, T. P., Rachford, B. L., **Tumlinson, J.**, Shull, J. M., Blair, W. P., Ferlet, R., Friedman, S. D., Gry, C., Jenkins, E. B., Morton, D. C., Savage, B. D., Sembach, K. R., Vidal-Madjar, A., Welty, D. E., York, D. G. “FUSE Observations of Molecular Hydrogen in Translucent Interstellar Clouds”, BAAS, 195, 6.07

Tumlinson, J. 2000, “Light and Metals from Population III Stars”, Proceedings of the Second MPA/ESO Workshop on “The First Stars” eds. Weiss, Abel, Hill, Springer: Heidelberg