



Trey V. Wenger

ASTROPHYSICIST

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Research interests: Milky Way structure; interstellar medium; HII regions; high-mass star formation; galaxy formation and evolution; radio recombination lines

Education

University of Virginia

PH.D. IN ASTRONOMY, M.S. IN ASTRONOMY

- Dissertation: "Structure in the Milky Way"
- Advisor: Dana S. Balser, National Radio Astronomy Observatory

Charlottesville, Virginia

Aug 2013 - Present

Boston University

B.A. IN ASTRONOMY AND PHYSICS, *summa cum laude*

Boston, Massachusetts

Aug. 2009 - May 2013

Employment

Research Assistant

UNIVERSITY OF VIRGINIA

- Advisor: Dana S. Balser, National Radio Astronomy Observatory
- Research: the morphological and chemical structure of the Galaxy as probed by high-mass star forming regions.

Charlottesville, Virginia

Aug 2013 - Present

Teaching Assistant

UNIVERSITY OF VIRGINIA

- Introduction to Cosmology (Undergraduate)
- Research Methods in Astrophysics (Undergraduate)
- Observational Astronomy (Graduate)
- Introduction to Cosmology (Undergraduate)
- Observational Astronomy (Undergraduate)
- Duties: guest lectures, office hours, observational labs, assignment and exam grading.

Charlottesville, Virginia

Aug 2014 - May 2016

Instructor

UNIVERSITY OF VIRGINIA

- Stars, Galaxies, and the Universe (Undergraduate)
- Duties: course design, lectures, assignment and exam design and grading, observational labs.

Charlottesville, Virginia

Jul 2014 - Aug 2014

Research Assistant

BOSTON UNIVERSITY

- Advisor: T. M. Bania, Boston University
- Research: helium and carbon radio recombination line properties in the HII Region Discovery Survey.

Boston, Massachusetts

Aug 2012 - May 2013

REU Student

NATIONAL RADIO ASTRONOMY OBSERVATORY

- Advisor: Dana S. Balser, National Radio Astronomy Observatory
- Research: helium and carbon radio recombination line properties in the HII Region Discovery Survey.

Charlottesville, Virginia

Jun 2012 - Aug 2012

REU Student

ARECIBO OBSERVATORY

- Advisor: Tapasi Ghosh and Chris Salter, Arecibo Observatory
- Research: searching for transients in the Galactic Arecibo L-band Feed Array Continuum Transit Survey (GALFACTS).

Puerto Rico

May 2011 - Aug 2011

Assistant Curator, J. B. Coit Observatory

BOSTON UNIVERSITY

- Duties: maintain and service telescopes, assist at open houses, maintain lab equipment.

Boston, Massachusetts

Jun 2010 - May 2013

Skills

Languages	English (Native), French (Intermediate)
Programming	Python, C/C++, Java, IDL
Scripting	BASH, TCSH
Web	HTML/HTML5, PHP, CSS, Javascript/JQuery
Software	TEX, EMACS, CASA, IRAF, Radex, GNUplot
Operating Systems	Linux (Ubuntu, RedHat, CentOS), Mac, Windows

Research Grants

2017–2018	Graduate Research Fellowship , Virginia Space Grant Consortium	<i>Charlottesville, VA</i>
2016–2018	Grote Reber Doctoral Fellowship , National Radio Astronomy Observatory	<i>Charlottesville, VA</i>
2016	Raven Fellowship , Raven Society	<i>Charlottesville, VA</i>
2016–2017	Graduate Research Fellowship , Virginia Space Grant Consortium	<i>Charlottesville, VA</i>
2016–2017	ARCS Scholarship , Achievement Rewards for College Scientists Foundation	<i>Washington, D.C.</i>
2013–2019	D.N. Batten Foundation Jefferson Fellowship , Jefferson Scholars Foundation	<i>Charlottesville, VA</i>
2012–2013	Undergraduate Research Outreach Program Award , Boston University	<i>Boston, MA</i>
2012	NSF Research Experiences for Undergraduates , National Radio Astronomy Observatory	<i>Charlottesville, VA</i>
2011	NSF Research Experiences for Undergraduates , Arecibo Observatory	<i>Puerto Rico</i>

Honors & Awards

2018	Chambliss Astronomy Achievement Award , 231st American Astronomical Society Meeting	<i>Washington, D.C.</i>
2016	Laurence W. Fredrick Teaching Award , University of Virginia	<i>Charlottesville, VA</i>
2015	First Place Award and Scholarship , Huskey Research Exhibition	<i>Charlottesville, VA</i>
2015	Inductee , Raven Society	<i>Charlottesville, VA</i>
2014	Second Place Award and Scholarship , Huskey Research Exhibition	<i>Charlottesville, VA</i>
2013	College Prize in Astronomy , Boston University	<i>Boston, MA</i>
2013	Institute for Astrophysical Research Prize , Boston University	<i>Boston, MA</i>
2009–2013	Dean's List , Boston University	<i>Boston, MA</i>

Professional Society Membership

2017–2018	President , Raven Society	<i>Charlottesville, VA</i>
2015	Member , Raven Society	<i>Charlottesville, VA</i>
2013	Member , Phi Beta Kappa	<i>Boston, MA</i>
2011	Junior Member , American Astronomical Society	<i>USA</i>
2010–2012	President , Boston University Astronomical Society	<i>Boston, MA</i>
2009–2013	Member , Boston University Astronomical Society	<i>Boston, MA</i>

Teaching Experience

2016	Teaching Assistant , Introduction to Cosmology (Undergraduate)	<i>UVA</i>
2016	Teaching Assistant , Research Methods in Astrophysics (Undergraduate)	<i>UVA</i>
2015	Teaching Assistant , Observational Astronomy (Graduate)	<i>UVA</i>
2015	Teaching Assistant , Introduction to Cosmology (Undergraduate)	<i>UVA</i>
2014	Teaching Assistant , Observational Astronomy (Undergraduate)	<i>UVA</i>
2014	Instructor , Stars, Galaxies, and the Universe (Undergraduate)	<i>UVA</i>

Outreach & Service

2018	Organizer , Bob Rood Memorial Research Symposium	Charlottesville, VA
2017–2018	President , Raven Society	Charlottesville, VA
2017	Member , UVA Astronomy Graduate Admissions Committee	Charlottesville, VA
2017	Organizer , Bob Rood Memorial Research Symposium	Charlottesville, VA
2016–2018	Member , Raven Society Leadership Council	Charlottesville, VA
2016	Volunteer Speaker , Charlottesville Astronomical Society	Charlottesville, VA
2015	Organizer , Forum for Interdisciplinary Dialogue Research Symposium	Charlottesville, VA
2013–2019	Co-founder , Astronomy Undergraduate Mentorship Program	Charlottesville, VA
2013–2019	Volunteer Webmaster , UVA Astronomy Department	Charlottesville, VA
2013–2019	Volunteer , Dark Skies, Bright Kids community outreach program	Charlottesville, VA
2013–2019	Volunteer and Speaker , Charlottesville-area observatory open houses	Charlottesville, VA
2010–2012	President , Boston University Astronomical Society	Boston, MA
2009–2013	Member , Boston University Astronomical Society	Boston, MA

Invited Talks

May 2017	Lunch Talk , University of Tasmania	Hobart, TAS
Apr. 2017	Research Symposium , Virginia Space Grant Consortium Research Conference	Williamsburg, VA
Apr. 2017	Research Symposium , ARCS Foundation Metro-Washington D.C. Chapter	Charlottesville, VA
Mar. 2017	Research Symposium , Bob Rood Memorial Research Symposium	Charlottesville, VA
Nov. 2016	Lunch Talk , Boston University	Boston, MA
Oct. 2016	Research Symposium , ARCS Metro-Washington D.C. Chapter, National Academy of Sciences	Washington, D.C.
Sep. 2016	Lunch Talk , National Radio Astronomy Observatory	Charlottesville, VA
Apr. 2016	Invited Talk , Charlottesville Astronomical Society	Charlottesville, VA
Oct. 2015	Research Symposium , Bob Rood Memorial Symposium	Charlottesville, VA
Feb. 2015	Research Symposium , Jefferson Scholars Foundation	Charlottesville, VA

Publications

- [1] **Wenger, T. V.**, L. D. Anderson, D. S. Balser, and T. M. Bania. Kinematic Distances: A Monte Carlo Method. *ApJ in press*, February 2018.
- [2] M. Luisi, L. D. Anderson, D. S. Balser, **Wenger, T. V.**, and T. M. Bania. Diffuse Ionized Gas in the Milky Way Disk. *ApJ*, 849:117, November 2017.
- [3] **Wenger, T. V.**, A. A. Khan, N. G. Ferraro, D. S. Balser, W. P. Armentrout, L. D. Anderson, and T. M. Bania. Carbon Monoxide Observations Toward Star Forming Regions in the Outer Scutum-Centaurus Spiral Arm. *ArXiv e-prints*, November 2017.
- [4] L. D. Anderson, W. P. Armentrout, M. Luisi, T. M. Bania, D. S. Balser, and **Wenger, T. V.** A Green Bank Telescope Survey of Large Galactic HII Regions. *ArXiv e-prints*, October 2017.
- [5] B.-C. Koo, G. Park, W.-T. Kim, M. G. Lee, D. S. Balser, and **Wenger, T. V.** Tracing the Spiral Structure of the Outer Milky Way with Dense Atomic Hydrogen Gas. *PASP*, 129(9):094102, September 2017.
- [6] D. S. Balser, **Wenger, T. V.**, W. M. Goss, K. E. Johnson, and A. A. Kepley. JVLA Observations of IC 342: Probing Star Formation in the Nucleus. *ApJ*, 844:73, July 2017.
- [7] C. Brown, C. Jordan, J. M. Dickey, L. D. Anderson, W. P. Armentrout, D. S. Balser, T. M. Bania, J. R. Dawson, N. M. McClure-Griffiths, and **Wenger, T. V.** The Southern H II Region Discovery Survey (SHRDS): Pilot Survey. *AJ*, 154:23, July 2017.
- [8] W. P. Armentrout, L. D. Anderson, D. S. Balser, T. M. Bania, T. M. Dame, and **Wenger, T. V.** High-Mass Star Formation in the Outer Scutum-Centaurus Arm. *ArXiv e-prints*, May 2017.

- [9] M. Luisi, L. D. Anderson, D. S. Balser, T. M. Bania, and **Wenger, T. V.** H II Region Ionization of the Interstellar Medium: A Case Study of NGC 7538. *Astrophysical Journal*, 824:125, June 2016.
- [10] L. D. Anderson, W. P. Armentrout, B. M. Johnstone, T. M. Bania, D. S. Balser, **Wenger, T. V.**, and V. Cunningham. Finding Distant Galactic HII Regions. *Astrophysical Journal Supplement*, 221:26, December 2015.
- [11] L. D. Anderson, L. A. Hough, **Wenger, T. V.**, T. M. Bania, and D. S. Balser. Untangling the Recombination Line Emission from H II Regions with Multiple Velocity Components. *Astrophysical Journal*, 810:42, September 2015.
- [12] D. S. Balser, **Wenger, T. V.**, L. D. Anderson, and T. M. Bania. Azimuthal Metallicity Structure in the Milky Way Disk. *Astrophysical Journal*, 806:199, June 2015.
- [13] L. D. Anderson, T. M. Bania, D. S. Balser, V. Cunningham, **Wenger, T. V.**, B. M. Johnstone, and W. P. Armentrout. The WISE Catalog of Galactic H II Regions. *Astrophysical Journal Supplement*, 212:1, May 2014.
- [14] **Wenger, T. V.**, T. M. Bania, D. S. Balser, and L. D. Anderson. The Green Bank Telescope H II Region Discovery Survey. IV. Helium and Carbon Recombination Lines. *Astrophysical Journal*, 764:34, February 2013.

Conference Proceedings

- [15] L. E. Bittle, **Wenger, T.**, K. E. Johnson, D. Angell, A. Burkhardt, B. Davis, A. Firebaugh, D. Hancock, W. Richardson, C. Rochford Hayes, S. Linden, S. Liss, A. Matthews, S. McNair, B. Prager, M. Pryal, and N. W. Troup. Dark Skies, Bright Kids Year 8. In *American Astronomical Society Meeting Abstracts*, volume 229 of *American Astronomical Society Meeting Abstracts*, page 335.09, January 2017.
- [16] J. Shea, **Wenger, T.**, D. S. Balser, L. D. Anderson, W. P. Armentrout, T. M. Bania, J. Dawson, J. Miller Dickey, C. Jordan, and N. M. McClure-Griffiths. The Southern HII Region Discovery Survey: Preliminary Results. In *American Astronomical Society Meeting Abstracts*, volume 229 of *American Astronomical Society Meeting Abstracts*, page 340.26, January 2017.
- [17] **Wenger, T.**, D. S. Balser, L. D. Anderson, and T. M. Bania. Metallicity Structure in the Milky Way Disk. In *American Astronomical Society Meeting Abstracts*, volume 229 of *American Astronomical Society Meeting Abstracts*, page 340.07, January 2017.
- [18] **Wenger, T. V.**, C. D. Wiens, K. E. Johnson, S. C. Gallagher, and P. Tzanavaris. The Importance of Compact Group Environments over Cosmic Time. In *Mapping the Pathways of Galaxy Transformation Across Time and Space*, August 2016.
- [19] **Wenger, T. V.**, J. M. Dickey, C. Jordan, T. M. Bania, D. S. Balser, J. Dawson, L. D. Anderson, W. P. Armentrout, N. McClure-Griffiths, and C. Brown. The Southern HII Region Discovery Survey. In *Star Formation, Magnetic Fields, and Diffuse Matter in the Galaxy: a Conference Honoring Richard Crutcher and Carl Heiles*, May 2016.
- [20] W. P. Armentrout, L. D. Anderson, D. S. Balser, T. M. Bania, T. M. Dame, and **Wenger, T.** High-Mass Star Formation in the Outer Scutum-Centaurus Arm. In *American Astronomical Society Meeting Abstracts*, volume 227 of *American Astronomical Society Meeting Abstracts*, page 409.07, January 2016.
- [21] J. Barnes, D. S. Balser, and **Wenger, T.** Probing Metallicity across the Milky Way Disk with the VLA. In *American Astronomical Society Meeting Abstracts*, volume 227 of *American Astronomical Society Meeting Abstracts*, page 341.14, January 2016.
- [22] L. E. Bittle, K. E. Johnson, H. J. Borish, A. Burkhardt, A. Firebaugh, D. Hancock, C. Rochford Hayes, S. Linden, S. Liss, A. Matthews, B. Prager, M. Pryal, K. R. Sokal, N. W. Troup, and **Wenger, T.** Dark Skies, Bright Kids Year 7. In *American Astronomical Society Meeting Abstracts*, volume 227 of *American Astronomical Society Meeting Abstracts*, page 248.07, January 2016.
- [23] M. Luisi, L. D. Anderson, D. S. Balser, T. M. Bania, and **Wenger, T.** Leaking Photons from the HII Region NGC 7538. In *American Astronomical Society Meeting Abstracts*, volume 227 of *American Astronomical Society Meeting Abstracts*, page 347.13, January 2016.

- [24] **Wenger, T.**, J. Miller Dickey, C. Jordan, T. M. Bania, D. S. Balser, J. Dawson, L. D. Anderson, W. P. Armentrout, and N. McClure-Griffiths. The Southern HII Region Discovery Survey. In *American Astronomical Society Meeting Abstracts*, volume 227 of *American Astronomical Society Meeting Abstracts*, page 347.10, January 2016.
- [25] C. Wiens, K. E. Johnson, **Wenger, T.**, and L. Xiao. The Importance of Compact Group Environments Over Cosmic Time. In *American Astronomical Society Meeting Abstracts*, volume 227 of *American Astronomical Society Meeting Abstracts*, page 235.13, January 2016.
- [26] D. S. Balser, L. D. Anderson, T. M. Bania, and **Wenger, T.** The GBT HII Region Discovery Survey: Galactic Structure. In *American Astronomical Society Meeting Abstracts*, volume 225 of *American Astronomical Society Meeting Abstracts*, page 142.12, January 2015.
- [27] J. Kania, **Wenger, T.**, T. Ghosh, and C. J. Salter. Variability Search in GALFACTS. In *American Astronomical Society Meeting Abstracts*, volume 225 of *American Astronomical Society Meeting Abstracts*, page 255.14, January 2015.
- [28] S. Liss, N. W. Troup, K. E. Johnson, L. D. Barcos-Munoz, R. Beaton, L. Bittle, H. J. Borish, A. Burkhardt, J. Corby, J. Dean, D. Hancock, J. King, B. Prager, C. Romero, K. R. Sokal, S. Stierwalt, **Wenger, T.**, and C. Zucker. Dark Skies, Bright Kids Year 6. In *American Astronomical Society Meeting Abstracts*, volume 225 of *American Astronomical Society Meeting Abstracts*, page 243.07, January 2015.
- [29] B. Prager, K. E. Johnson, L. D. Barcos-Munoz, R. Beaton, L. Bittle, H. Borish, A. Burkhardt, J. Corby, G. Damke, J. Dean, G. Dorsey, D. Graninger, T. Lauck, S. Liss, A. Oza, S. Peacock, C. Romero, K. R. Sokal, S. Stierwalt, L. Walker, **Wenger, T.**, and C. Zucker. Dark Skies, Bright Kids! Year 5. In *American Astronomical Society Meeting Abstracts 223*, page 444.04, January 2014.
- [30] T. G. Brainerd, **Wenger, T.**, and I. Agustsson. Cosmic Magnification in the Sloan Digital Sky Survey. In *Probes of Dark Matter on Galaxy Scales*, page 303.06, July 2013.
- [31] L. D. Anderson, T. M. Bania, D. S. Balser, and **Wenger, T.** Distant HII Regions in the Outer and Outer Scutum Centaurus Arms. In *American Astronomical Society Meeting Abstracts 222*, page 211.03, June 2013.
- [32] Loren D. Anderson, Dana S. Balser, Thomas M. Bania, and **Wenger, Trey**. A WISE Extension of the GBT HRDS. In *American Astronomical Society Meeting Abstracts 221*, page 413.01, January 2013.
- [33] Dana S. Balser, Loren D. Anderson, Thomas M. Bania, and **Wenger, Trey**. Probing Metallicity Across the Galactic Disk with the GBT. In *American Astronomical Society Meeting Abstracts 221*, page 413.03, January 2013.
- [34] T. G. Brainerd, **Wenger, T. V.**, and I. Agustsson. Cosmic Magnification in the Sloan Digital Sky Survey. In *American Astronomical Society Meeting Abstracts 221*, page 152.05, January 2013.
- [35] **Wenger, Trey**, Thomas M. Bania, Dana S. Balser, and Loren D. Anderson. The Green Bank Telescope H II Region Discovery Survey IV. Helium and Carbon Recombination Lines. In *American Astronomical Society Meeting Abstracts 221*, page 413.02, January 2013.
- [36] **Wenger, T.**, S. Barenfeld, T. Ghosh, and C. Salter. Reduction and Analysis of GALFACTS Data in Search of Compact Variable Sources. In *American Astronomical Society Meeting Abstracts 219*, page 145.09, January 2012.
- [37] T. G. Brainerd and **Wenger, T. V.** A Preliminary Analysis of Cosmic Magnification of SDSS Galaxies. In *American Astronomical Society Meeting Abstracts 218*, page 235.02, May 2011.

Published Code

- [38] **Wenger, T. V.**, D. S. Balser, L. D. Anderson, and T. M. Bania. KDUtills: Kinematic Distance Utilities. Astrophysics Source Code Library, December 2017.
- [39] **Wenger, T. V.**, A. K. Kepley, and D. S. Balser. HRM: HII Region Models. Astrophysics Source Code Library, July 2017.
- [40] T. Bania, **Wenger, T.**, D. Balser, and L. Anderson. TMBIDL: Single dish radio astronomy data reduction package. Astrophysics Source Code Library, May 2016.