Alex S. Hill ***Curriculum Vitae***

CONTACT INFORMATION

University of British Columbia, Okanagan campus
Irving K. Barber Faculty of Science
Department of Computer Science, Math, Physics, & Statistics
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RESEARCH INTERESTS

Observational and numerical studies of interstellar plasma and magnetic fields. The disk-halo connection and vertical structure of the Milky Way. Interstellar turbulence.

EDUCATION

University of Wisconsin-Madison, Ph.D. in Astronomy 2011
Thesis title: "Warm ionized gas in the disk and halo of the Milky Way"
Advisor: Dr. L. Matthew Haffner
Graduate minor in physics

Oberlin College, B.A. with High Honors in Physics 2004
Thesis title: "Probing the interstellar medium on AU size scales using pulsar scintillation"
Advisor: Prof. Daniel R. Stinebring
Minor: Mathematics

TEACHING & RESEARCH EMPLOYMENT

University of British Columbia (Kelowna, BC Canada)
Assistant Professor of Physics 2019 – present

Dominion Radio Astrophysical Observatory (Penticton, BC Canada)
Adjunct Scientist 2019 – present
Collaborator 2017 – 2019

University of British Columbia (Vancouver, BC Canada)
Astronomer 2017 – 2019

Space Science Institute (Boulder, CO USA)
Research Scientist 2017 – 2019

Haverford College (Haverford, PA USA)
Visiting Assistant Professor 2017
Senior Postdoctoral Research Associate 2014 – 2017

CSIRO Astronomy & Space Science (Epping, NSW Australia)
OCE Postdoctoral Fellow 2011 – 2014

University of Wisconsin-Madison (Madison, WI USA)
Lecturer summer 2011
Postdoctoral Research Associate 2011
Teaching Assistant and Grader 2006 – 2009
Research Assistant 2005 – 2011

Oberlin College (Oberlin, OH USA)
Grader 2003 – 2004
Research Assistant 2001 – 2004

University of California, Berkeley (Berkeley, CA USA)
Research Assistant summer 2003

Harvard-Smithsonian Center for Astrophysics (Cambridge, MA USA)
NSF REU Intern summer 2002

Courses taught

UBC Okanagan

ASTR 110/111/112: "Astronomy I" and "Astrophysics I"
ASTR 120/121/122: "Astronomy II" and "Astrophysics II"
ASTR 210: "Physical processes in the Universe"
PHYS 321: "Stellar Astrophysics"

Haverford College: Astronomy 206: "Introductory Astrophysics II" (course for second-year astronomy and astrophysics majors and minors)
Four guest lectures in Astronomy 205: "Introductory Astrophysics I"

University of Wisconsin-Madison: Astronomy 103: "The Evolving Universe" (astronomy survey course for non-majors)

Highly Qualified Personnel Supervised

Postdoctoral researchers

A. Ordog (UBCO, 2020 – present)

Graduate students

J.-W. Chen (UBCO, 2022 – present)

Undergraduate students

Thesis students: N. Mohammed (UBCO, 2022 – present), N. Koblischke (2022 – present), G. Godden (UBCO, 2021 – 2022), J. MacEachern (UBC, 2019 – 2020), S. Betti (Haverford, 2015 – 2017), K. Faris (Haverford, 2015 – 2016)

Other students: S. Kole (UBCO, 2022), L. Caffarello (UBCO, 2022 – present), E. Eren (UBCO, 2021 – present), I. Kennedy (UBCO, 2021), T. Do (UBC, 2019 – present), D. Rowan (Haverford, 2016 – 2018), L. Loza (Haverford, 2015), E. Adermann (CSIRO, 2013)

Awards

Brockhouse Canada Prize for Interdisciplinary Research in Science and Engineering as part of CHIME team, 2022

Lancelot M. Berkeley – New York Community Trust Prize for Meritorious Work in Astronomy (American Astronomical Society, 2022, awarded to the CHIME/FRB team)

Governor General's Innovation Award as part of CHIME team, 2020.

Grants Awarded (≈ CAD$1.3M total)

CFI John Evans Leaders Fund: "The Canadian Arcminute Resolution Magnetoionic Medium Survey (CARMIMS)" (CAD$352,800), 2021–2026. Principal investigator.

NSERC Discovery Grant: "The Dynamic Interstellar Medium" (CAD$120,000), 2020–2025. Principal Investigator.

NASA Astrophysics Theory Program: "The Injection, Transport and Evolution of Dust in Supernova-Driven Interstellar Media" (US$552,000), 2017–2020. Co-Investigator/Institutional Principal Investigator at Space Science Institute.

NASA *Hubble Space Telescope* theory grant: "Gaseous infall and star formation from redshift 2 to the Milky Way" (US$126,701), 2016. Principal Investigator.

American Astronomical Society International Travel Grant (≈ US$1500 each), 2008, 2015, 2016.

International Astronomical Union Travel Grant (€600), 2012.

NSF and Australian Academy of Science EAPSI fellow: "The magnetized multi-phase interstellar medium." Approximately US$10k for fellowship at the University of Sydney, Australia. 2010.

Wisconsin Space Grant Consortium Special Initiatives (US$1728) for "'Astronomy in a box' UW Outreach." Co-investigator. 2009.

Selected Successful Observing and Computing Proposals as Principal Investigator

Dominion Radio Astrophysical Observatory: "Extending the CGPS to include the Fan Region", 36 fields ($\sim$ 800 hours) on the DRAO Synthesis Telescope, 2018

NASA High End Computing: "The Injection, Transport and Evolution of Dust in Supernova-Driven Interstellar Media", $\approx$ 2 million CPU hours on Pleiades supercomputing cluster, 2017, 2018

NASA High End Computing: "Modeling infall in Milky Way-like galaxies", $>$ 3 million CPU hours on Pleiades supercomputing cluster, 2015, 2016, 2017

NSF XSEDE: "Can inflowing gas fuel star formation?" 691,739 CPU hours of time on Stampede supercomputing cluster, 2014.

Australia Telescope National Facility: "Magnetic structure of a high velocity cloud", 30 hours on the Australia Telescope Compact Array, 2012, 2013.

Australian Supercomputing Time Allocation Committee: "Accretion of high velocity gas", 102,000 CPU hours of time on iVEC supercomputing cluster, 2012.

National Radio Astronomy Observatory: "The magnetic field in the Smith Cloud", 27 hours on the Karl G. Jansky Very Large Array, 2011.

Observing Experience

Arecibo Observatory, Australia Telescope Compact Array, Canadian Hydrogen Intensity Mapping Experiment (CHIME), John A. Galt Telescope, Karl G. Jansky Very Large Array, Keck Telescope, Parkes Telescope, Wisconsin H-Alpha Mapper, WIYN 0.9 m Telescope

Research Leadership

Steering committee, Global Magnetoionic Medium Survey (2021 – present)

Public Outreach

Public, school, and community lectures and presentations
- Community Roots Middle School (7th grade class presentations, New York, NY USA virtual, 2021)
- UBC Okanagan Nobel Night (Kelowna, BC Canada virtual, 2020)
- Dominion Radio Astrophysical Observatory Open House (Kaleden, BC Canada, 2019)
- Columbia River High School (Vanocuver, WA USA, 2019)
- Orion Lodge (Penticton, BC Canada, 2018)
- Okanagan College (Penticton, BC Canada, 2018)
- MAST (Mentoring & Student Teaching, Haverford, PA USA, 2017)
- Box Lunch and a Book (Ardmore, PA USA, 2016, 2017)
- Taste of Science (Philadelphia, PA USA, 2017)
- Start Talking Science (Philadelphia, PA USA, 2016)
- Chester County Astronomical Society (West Chester, PA USA, 2016)
- Parkes Teacher Workshop (Parkes Telescope, NSW Australia, 2013)
- Astronomical Society of New South Wales (Wiruna, NSW Australia, 2012)
- University of Wisconsin Space Place (Madison, WI USA, 2007)

Dominion Radio Astrophysical Observatory (Penticton, BC Canada) 2017–present
Lead tours of the observatory for groups of all ages

CSIRO Scientists in Schools (Sydney, NSW Australia) 2012 – 2014
Engaged gifted and talented year 4 and 5 students at Mosman Preparatory School in astronomy and physics. Discussed science careers with high school girls at St Vincent's College.

Universe in the Park (Wisconsin, USA) 2005 – 2011
Presented ≈ 10 public astronomy talks per summer and ran observing sessions with 8- and 10-inch telescopes in Wisconsin state parks.

Washburn Observatory (Madison, WI USA) 2005 – 2011
Led public and class observing nights with a 16-inch refracting telescope.

Press releases
"Radio burst in Milky Way sheds light on origins of mysterious phenomenon" (UBCO, January 12, 2021)
"Magnetic 'Force Field' Shields Giant Gas Cloud during Collision with Milky Way" (NRAO, October 31, 2013)
"Pill-popping galaxy hooked on gas" (CSIRO, November 1, 2013)

Media appearances
"Daybreak South", CBC Radio, Kelowna, BC Canada, 2021
"Radio West", CBC Radio, Kelowna, BC Canada, 2020
"Weekend Breakfast," ABC News 24, Sydney, NSW Australia, 2014

Museum exhibition "Picturing Science: Museum Scientists and Imaging Technologies" at the American Museum of Natural History (New York, NY USA, June 2011 – May 2014). Contributed to display on visualization of the interstellar medium.

Service

Equity, Diversity, and Inclusion committee, Department Computer Science, Math, Physics, and Statistics, UBC Okanagan (2020 – present)

Grant review panels: NASA Astrophysics Theory Program, NSF Astronomy & Astrophysics Grants (2015 – 2021)

Referee for *Astronomy & Astrophysics*, *The Astrophysical Journal*, *Monthly Notices of the Royal Astronomical Society*, and *New Astronomy* (2010 – present)

Judge, Chambliss Astronomy Achievement Student Awards, American Astronomical Society

Duty Astronomer, Australia Telescope Compact Array (two weeks per year, 2012 – 2014)

Scientific organizing committee: "Global Radio Scintillometry Astrophysics 2018" (2018), "Phase transitions in the diffuse ISM" (chair; 2013), "ATNF Radio School" (2012)

Local organizing committee: "SPARCS VIII: Early Science, on the path to the SKA Pathfinders" (2018), "Multiwavelength Surveys: A Vintage Decade" (2012)

CSIRO Astronomy & Space Science colloquium organizer (2013 – 2014)

Australia Telescope National Facility friends of observers organizer (2012 – 2014)

ISM Lunch organizer (weekly lunch at UW-Madison, 2009 – 2010)

Graduate student medical & family leave committee (UW-Madison, 2009 – 2010)

Colloquiua and seminars

- CHIME-o-sphere (all CHIME science teams; virtual, 2021)
- University of British Columbia (Kelowna, BC Canada, 2019)
- University of Georgia, (Athens, Georgia USA, 2019)
- Kapteyn Astronomical Institute, University of Groningen (The Netherlands, 2018)
- Dominion Astrophysical Observatory (Victoria, BC Canada, 2018)
- University of British Columbia (Vancouver, BC Canada, 2018)
- Dominion Radio Astrophysical Observatory (Penticton, BC Canada, 2017)
- Harvard-Smithsonian Center for Astrophysics (Cambridge, MA USA, 2017)

- Franklin & Marshall College (Lancaster, PA USA, 2017)
- Princeton University (NJ USA, 2016)
- University of Georgia (Athens, GA USA, 2016)
- Max Planck Institute for Radio Astronomy (Bonn, Germany, 2015)
- University of Tasmania (Hobart, Australia, 2013)
- University of St Andrews (Scotland, 2013)
- University of Bochum (Germany, 2013)
- Columbia University (New York, NY USA, 2013)
- University of Notre Dame (South Bend, IN USA, 2012)
- University of Heidelberg Institute for Theoretical Astrophysics (Germany, 2012)
- CSIRO Astronomy & Space Science (Sydney, NSW Australia, 2010)
- University of Sydney, Sydney Institute for Astrophysics (NSW Australia, 2010)
- American Museum of Natural History (New York, NY USA, 2010, 2012)

Conference talks

Invited

- American Physical Society, Northwest Section, Thompson Rivers University, Kamloops, BC Canada, 2022 (plenary)
- Virtual Physics Conference, Thompson Rivers University, Kamloops, BC Canada, 2020 (plenary)
- Global Magnetoionic Medium Survey workshop, Penticton, BC Canada, 2017
- MPIA Summer Workshop: "Phases of the ISM", Heidelberg, Germany, 2013
- Global Magnetoionic Medium Survey workshop, Sydney, NSW Australia, 2013
- Australia Telescope Users' Committee science meeting: "Science Drivers for Parkes Receiver Development," Sydney, NSW Australia, 2012
- IAU General Assembly XXVIII Special Session 12: "Modern Views of the Interstellar Medium," Beijing, China, 2012

Contributed

- "Insterstellar Institute 5: With Two Eyes", Orsay, France, 2022
- "Self-Organized Star Formation", Orsay, France, 2019
- "New Perspectives on Cosmic Magnetism, Newcastle, England, 2019
- 233rd Meeting of the American Astronomical Society, Seattle, WA, USA, 2019
- "The Interstellar Medium in the Age of Gaia", Orsay, France, 2018
- "The Power of Faraday Tomography", Miyazaki, Japan, 2018
- "SKA Pathfinder Radio Continuum Survey Working Group (SPARCS) VIII", Penticton, BC Canada, 2018
- "The Interstellar Medium Beyond 3D", Orsay, France, 2017
- "Midwest Magnetic Fields", Madison, WI, USA, 2017
- "The Physics of the ISM - 6 years of ISM-SPP 1573", Cologne, Germany, 2017
- "Star formation, magnetic fields, and diffuse matter in the galaxy", Madison, WI, USA, 2016
- 225th Meeting of the American Astronomical Society, Seattle, WA, USA, 2015
- "The Periphery of Disks", Sydney, NSW Australia, 2014
- "Physical Processes in the ISM", Garching, Germany, 2013
- The Astronomical Society of Australia, Annual Scientific Meeting, Sydney, NSW Australia, 2012
- "Galactic Winds of Change," Sexten, Italy, 2012
- Southern Cross Conference: "Multiwavelength Surveys: A Vintage Decade", Hunter Valley, NSW Australia, 2012
- "Turbulence in the Interstellar Medium", Monash, Victoria Australia, 2012
- "Turbulence in Cosmic Structure Formation", Phoenix, AZ USA, 2012
- "WALLABY Simulations Fest", Sydney, NSW Australia, 2011
- GASKAP workshop, Sydney, NSW Australia, 2011

Professional Society memberships	American Astronomical Society, Canadian Astronomical Society
Languages Spoken	English (native), Spanish (conversational)

Refereed Publications

Undergraduate students at time of the bulk of the work in red; graduate students at time of the bulk of the work in blue.

1. D. R. Stinebring, B. J. Rickett, A. H. Minter, A. S. Hill, A. P. Jussila, L. Mathis, M. A. McLaughlin, S. K. Ocker, and S. M. Ransom, "A Scintillation Arc Survey of 22 Pulsars with Low to Moderate Dispersion Measures", 2022, *The Astrophysical Journal*, 941, 34, doi:10.3847/1538-4357/ac8ea8.

2. J. M. Dickey, J. West, A. J. M. Thomson, T. L. Landecker, A. Bracco, E. Carretti, J. L. Han, **A. S. Hill**, Y. K. Ma, S. A. Mao, A. Ordog, J.-A. C. Brown, K. A. Douglas, A. Erceg, V. Jelić, R. Kothes, and M. Wolleben, "Structure in the Magnetic Field of the Milky Way Disk and Halo Traced by Faraday Rotation", 2022, *The Astrophysical Journal*, 940, 75, doi:10.3847/1538-4357/ac94ce.

3. CHIME Collaboration (42 authors, listed alphabetically), "An Overview of CHIME, the Canadian Hydrogen Intensity Mapping Experiment", 2022, *The Astrophysical Journal Supplement*, 261, 29, doi:10.3847/1538-4365/ac6fd9

4. CHIME Collaboration (29 authors, listed alphabetically), "Using the Sun to Measure the Primary Beam Response of the Canadian Hydrogen Intensity Mapping Experiment", 2022, *The Astrophysical Journal*, 932, 100, doi:10.3847/1538-4357/ac6b9f.

5. J. L. West, T. L. Landecker, B. M. Gaensler, T. M. Jaffe, **A. S. Hill**, "A Unified Model for the Fan Region and the North Polar Spur: A bundle of filaments in the Local Galaxy", 2021, *The Astrophysical Journal Letters*, 923, 58, doi:10.3847/1538-4357/ac2ba2.

6. S. L. Jung, N. M. McClure-Griffiths, **A. S. Hill**, "Distant probes of rotation measure structure: where is the Faraday rotation towards the Magellanic Leading Arm?" 2021, *Monthly Notices of the Royal Astronomical Society*, 508, 3921, doi:10.1093/mnras/stab2773.

7. M. Wolleben, T. L. Landecker, K. A. Douglas, A. D. Gray, A. Ordog, J. M. Dickey, **A. S. Hill**, E. Carretti, J. C. Brown, B. M. Gaensler, J. L. Han, M. Haverkorn, R. Kothes, J. P. Leahy, N. M. McClure-Griffiths, D. McConnell, W. Reich, A. R. Taylor, A. J. M. Thomson, & J. L. West, "The Global Magneto-Ionic Medium Survey: A Faraday Depth Survey of the Northern Sky Covering 1280 to 1750 MHz", 2021, *The Astrophysical Journal*, 162, 35, doi:10.3847/1538-3881/abf7c1.

8. A. J. M. Thomson, T. L. Landecker, N. M. McClure-Griffiths, J. M. Dickey, J. L. Campbell, E. Carretti, S. E. Clark, C. Federrath, B. M. Gaensler, J. L. Han, M. Haverkorn, **A. S. Hill**, S. A. Mao, A. Ordog, L. Pratley, W. Reich, C. L. Van Eck, J. L. West, & M. Wolleben, "The Global Magneto-Ionic Medium Survey (GMIMS): The brightest polarized region in the Southern sky at 75 cm and its implications for Radio Loop II", 2021, *Monthly Notices of the Royal Astronomical Society*, 507, 3495, doi:10.1093/mnras/stab1805.

9. CHIME/FRB Collaboration (61 authors, listed alphabetically), "Sub-second periodicity in a fast radio burst", 2022, *Nature*, 607, 256, doi:10.1038/s41586-022-04841-8.

10. CHIME/Pulsar Collaboration (44 authors, listed alphabetically), "The CHIME Pulsar Project: System Overview", 2021, *The Astrophysical Journal Supplement*, 255, 5, doi:10.3847/1538-4365/abfdcb.

11. CHIME/FRB Collaboration (72 authors, listed alphabetically), "The First CHIME/FRB Fast Radio Burst Catalog", *The Astrophysical Journal Supplement*, 257, 59, doi:10.3847/1538-4365/ac33ab.

12. B. Burkhart et al (21 additional authors, listed alphabetically), "The Catalogue for Astrophysical Turbulence Simulations (CATS)", 2020, *The Astrophysical Journal*, 905, 15, doi:10.3847/1538-4357/abc484.

13. J. D. Slavin, E. Dwek, M.-M. Mac Low, & **A. S. Hill**, "The dynamics, destruction, and survival of supernova-formed dust grains", 2020, *The Astrophysical Journal*, 902, 135, doi:10.3847/1538-4357/abb5a4.

14. CHIME/FRB Collaboration (70 authors, listed alphabetically), "A bright millisecond-duration radio burst from a Galactic magnetar", 2020, *Nature*, 587, 54, doi:10.1038/s41586-020-2863-y.

15. CHIME/FRB Collaboration (72 authors, listed alphabetically), "Periodic activity from a fast radio burst", 2020, *Nature*, 582, 351, doi:10.1038/s41586-020-2398-2.

16. CHIME/FRB Collaboration (56 authors, listed alphabetically), "CHIME/FRB Detection of Eight New Repeating Fast Radio Burst Sources", 2019, *The Astrophysical Journal Letters*, 885, L24, doi:10.3847/2041-8213/ab4a80.

17. S. K. Betti, **A. S. Hill**, S. A. Mao, B. M. Gaensler, F. J. Lockman, N. M. McClure-Griffiths, & R. A. Benjamin, "VLA Observations of the magnetic field of the Smith High Velocity Cloud", 2019, *The Astrophysical Journal*, 871, 215, doi:10.3847/1538-4357/aaf886.

18. CHIME/FRB Collaboration (53 authors, listed alphabetically), "Observations of fast radio bursts at frequencies down to 400 megahertz", 2019, *Nature*, 566, 230, doi:10.1038/s41586-018-0867-7.

19. CHIME/FRB Collaboration (58 authors, listed alphabetically), "A second source of repeating fast radio bursts", 2019, *Nature*, 566, 235, doi:10.1038/s41586-018-0864-x.

20. J. M. Dickey, T. L Landecker, A. J. M. Thomson, M. Wolleben, X. Sun, E. Carretti, K. Douglas, A. Fletcher, B. M. Gaensler, A. Gray, M. Haverkorn, **A. S. Hill**, S. A. Mao, & N. M. McClure-Griffiths, "The Global Magneto-Ionic Medium Survey: Moments of the Faraday spectra", 2019, *The Astrophysical Journal*, 871, 106, doi:10.3847/1538-4357/aaf85f.

21. A. J. M. Thomson, T. L. Landecker, J. M, Dickey, N. M. McClure-Griffiths, M. Wolleben, E. Carretti, A. Fletcher, C. Federrath, **A. S. Hill**, S. A. Mao, B. M. Gaensler, M. Haverkorn, S. E. Clark, C. L. Van Eck, J. L. West, 2019, "Through thick or thin: multiple components of the magneto-ionic medium towards the nearby H II region Sharpless 2-27 revealed by Faraday tomography", *Monthly Notices of the Royal Astronomical Society*, 487, 4751, doi:10.1093/mnras/stz1438.

22. M. Wolleben, T. L. Landecker, E. Carretti, J. M. Dickey, A. Fletcher, N. M. McClure-Griffiths, D. McConnell, A. J. M. Thomson, **A. S. Hill**, B. M. Gaensler, J. L. Han, M. Haverkorn, J. P. Leahy, W. Reich, & A. R. Taylor, 2019, "The Global Magneto-Ionic Medium Survey: Polarimetry of the Southern Sky from 300 to 480 MHz." *The Astronomical Journal*, 158, 44, doi:10.3847/1538-3881/ab22b0.

23. Y. Hu, K. H. Yuen, V. Lazarian, K. W. Ho, R. A. Benjamin, **A. S. Hill**, F. J. Lockman, P. F. Goldsmith, & A. Lazarian, 2019, "Surveying magnetic field morphology with velocity gradient technique in molecular clouds", *Nature Astronomy*, 3, 776, doi:10.1038/s41550-019-0769-0.

24. B. M. Smart, L. M. Haffner, K. A. Barger, **A. S. Hill**, & G. Madsen, 2019, "The diffuse ionized gas halo of the Small Magellanic Cloud", *The Astrophysical Journal*, 887, 16, doi:10.3847/1538-4357/ab4d58

25. Y. K. Ma, S. A. Mao, J. Stil, A. Basu, J. West, C. Heiles, **A. S. Hill**, & S. K. Betti, 2019, "A Broadband Spectro-polarimetric view of the NVSS Rotation Measure Catalogue I: Breaking the $n\pi$ Ambiguity", *Monthly Notices of the Royal Astronomical Society*, 487, 3432, doi:10.1093/mnras/stz1325.

26. Y. K. Ma, S. A. Mao, J. Stil, A. Basu, J. West, C. Heiles, **A. S. Hill**, & S. K. Betti, 2019, "A Broadband Spectro-polarimetric view of the NVSS Rotation Measure Catalogue II: Effects of Off-axis Instrumental Polarisation", *Monthly Notices of the Royal Astronomical Society*, 487, 3454, doi:10.1093/mnras/stz1328.

27. **A. S. Hill**, M.-M. Mac Low, J. C. Ibáñez-Mejía, & A. Gatto, "Effect of the heating rate on the stability of the three-phase interstellar medium", 2018, *The Astrophysical Journal*, 862, 55, doi:10.3847/1538-4357/aacce2

28. **A. S. Hill**, "Is there a polarization horizon?", 2018, *Galaxies*, 6, 129, doi:10.3390/galaxies6040129

29. B. Vandenbroucke, K. Wood, P. Girichidis, **A. S. Hill**, & T. Peters, "The effect of cosmic ray feedback on the scale height of diffuse ionised gas in disc galaxies", 2018, *Monthly Notices of the Royal Astronomical Society*, 476, 4032, doi:10.1093/mnras/sty554

30. **A. S. Hill**, T. L. Landecker, E. Carretti, K. Douglas, X. H. Sun, B. M. Gaensler, S. A. Mao, N. M. McClure-Griffiths, W. Reich, M. Wolleben, A. D. Gray, M. Haverkorn, J. P. Leahy, & D. F. H. M. Schnitzler, "The Fan Region at 1.5 GHz. I: Polarized synchrotron emission extending beyond the Perseus Arm", 2017, *Monthly Notices of the Royal Astronomical Society*, 467, 4631, doi:10.1093/mnras/stx389

31. K. A. Barger, G. Madsen, A. Fox, B. Wakker, J. Bland-Hawthorn, D. Nidever, L. Haffner, J. Antwi-Danso, M. Hernandez, N. Lehner, **A. S. Hill**, A. Curzons, & T. Tepper-Garcia, "Revealing the Ionization Properties of the Magellanic Stream using Optical Emission", 2017, *The Astrophysical Journal*, 851, 110, doi:10.3847/1538-4357/aa992a

32. D. Krishnarao, L. M. Haffner, R. A. Benjamin, **A. S. Hill**, & K. A. Barger, "Warm Ionized Medium Throughout the Sagittarius-Carina Arm", 2017, *The Astrophysical Journal*, 838, 43, doi:10.3847/1538-4357/aa63e6

33. A. J. Fox, N. Lehner, F. J. Lockman, B. P. Wakker, **A. S. Hill**, F. Heitsch, D. V. Stark, K. A. Barger, K. R. Sembach, M. Rahman, "On the metallicity and origin of the Smith High Velocity Cloud", 2016, *The Astrophysical Journal*, 816, L11, doi:10.3847/2041-8205/816/1/L11

34. M. C. Johnson, P. Kamphuis, B. S. Koribalski, J. Wang, S. Oh, **A. S. Hill**, S. O'Sullivan, S. Haan, P. Serra, "Blasting a dwarf galaxy: the tail of ESO 324-G024", 2015, *Monthly Notices of the Royal Astronomical Society*, 451, 319, doi:10.1093/mnras/stv1180

35. D. B. Henley, R. L. Shelton, K. Kwak, **A. S. Hill**, & M.-M. Mac Low, "The origin of the hot gas in the Galactic halo: testing galactic fountain models' X-ray emission", 2015, *The Astrophysical Journal*, 800, 102, doi:10.1088/0004-637X/800/2/102

36. J. E. Barnes, K. Wood, **A. S. Hill**, L. M. Haffner, "Models of diffuse Hα in the interstellar medium: the relative contributions from in situ ionization and dust scattering", 2015, *Monthly Noitces of the Royal Astronomical Society*, 447, 559, doi:10.1093/mnras/stu2454

37. **A. S. Hill**, R. A. Benjamin, L. M. Haffner, M. Gostisha, & K. A. Barger, "Hα and [SII] emission from warm ionized gas in the Scutum-Centaurus Arm", 2014, *The Astrophysical Journal*, 787, 106, doi:10.1088/0004-637X/787/2/106

38. J. E. Barnes, K. A. Wood, **A. S. Hill**, & L. M. Haffner, "Photoionization of a supernova-driven, turbulent interstellar medium", 2014, *Monthly Notices of the Royal Astronomical Society*, 440, 3027, doi:10.1093/mnras/stu521

39. R. M. Crocker, G. V. Bicknell, E. Carretti, **A. S. Hill**, R. S. Sutherland, 'Steady-state hadronic gamma-ray emission from 100-Myr-old Fermi Bubbles", 2014, *The Astrophysical Journal*, 791, L20, doi:10.1088/2041-8205/791/2/L20

40. **A. S. Hill**, S. A. Mao, R. A. Benjamin, F. J. Lockman, & N. M. McClure-Griffiths, "Magnetized Gas in the Smith High Velocity Cloud", 2013, *The Astrophysical Journal*, 777, 55, doi:10.1088/0004-637X/777/1/55

41. N. M. McClure-Griffiths, J. A. Green, **A. S. Hill**, F. J. Lockman, J. M. Dickey, B. M. Gaensler, & A. J. Green, "Atomic Hydrogen in a Galactic Center Outflow", 2013, *The Astrophysical Journal*, 770, L4, doi:10.1088/2041-8205/770/1/L4

42. J. M. Dickey et al. (**A. S. Hill** is author 30 of 58), "GASKAP – The Galactic ASKAP Survey", 2013, *Pub. Astron. Soc. of Australia*, 30, 3, doi:10.1017/pasa.2012.003

43. **A. S. Hill**, M. R. Joung, M.-M. Mac Low, R. A. Benjamin, L. M. Haffner, C. Klingenberg, & K. Waagan, "Vertical structure of a supernova-driven turbulent, magnetized interstellar medium", 2012, *The Astrophysical Journal*, 750, 104, doi:10.1088/0004-637X/750/2/104
(Erratum: 2012, ApJ, 761, 189, doi:10.1088/0004-637X/761/2/189)

44. V. A. Moss, N. M. McClure-Griffiths, R. Braun, **A. S. Hill**, & G. J. Madsen, "GSH 006-15+7: A local Galactic supershell featuring transition from HI emission to absorption", 2012, *Monthly Notices of the Royal Astronomical Society*, 421, 3159, doi:10.1111/j.1365-2966.2012.20538.x

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Papers in Preparation

1. CHIME Collaboration, "The Canadian Hydrogen Intensity Mapping Experiment: Overview", *The Astrophysical Journal*, in prep

2. B. Forster, T. J. Foster, R. Kothes, **A. S. Hill**, J.-A. Brown, "Interaction between rogue hydrogen clouds and the magnetic field high above the Galaxy", in prep

Selected Unrefereed Publications

1. **A. S. Hill**, J. Cami, L. Fissel, T. Foster, G. Jocas, L. Knee, R. Kothes, T. Landecker, T. Robishaw, E. Rosolowsky, S. Safi-Harb, J. West, T. V. Wenger, 2019, "Canadian Investigations of the Interstellar Medium", white paper submitted for the Canadian astronomy Long Range Plan 2020, doi:10.5281/zenodo.3825092.

2. D. R. Stinebring, S. Chatterjee; S. E. Clark, J. M. Cordes, T. Dolch, C. Heiles, **A. S. Hill**, M. Jones, V. Kaspi, M. T. Lam, T. J. W. Lazio, D. R. Madison, M. A. McLaughlin, N. M. McClure-Griffiths, N. T. Palliyaguru, B. J. Rickett, & M. P. Surnis, 2019, "Twelve Decades: Probing the Interstellar Medium from kiloparsec to sub-AU scales", Astro2020: Decadal Survey on Astronomy and Astrophysics, science white papers, Bulletin of the American Astronomical Society, 51, 492, arXiv:1903.07370.

3. D. Rowan & **A. S. Hill**, "Mapping Faraday Rotation Measures onto High Velocity Cloud H288", 2017, in "Keck Northeast Astronomy Consortium Annual Meeting Proceedings", edited by J. Barry.

4. **A. S. Hill**, R. J. Reynolds, L. M. Haffner, K. Wood, & G. J. Madsen, "Modern view of the warm ionized medium," 2012, in Proceedings of the International Astronomical Union Vol. 10, Issue H16, "Modern Views of the Interstellar Medium", ed. T. Montmerle, *Highlights of Astronomy*, 574, doi:10.1017/S1743921314012228

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