

# CURRICULUM VITAE

## Timothy Robishaw

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**Personal Information:** US citizen born 15 April 1976 in Boston, Massachusetts

### Education

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- Ph.D. in Astrophysics, University of California at Berkeley, 2008
  - Dissertation: “*Magnetic Fields Near and Far: Galactic and Extragalactic Single-Dish Radio Observations of the Zeeman Effect*”
  - Advisor: Carl Heiles
- M.A. in Astrophysics, University of California at Berkeley, 2002
- B.A. in Astrophysics (with Honors) and Physics, University of California at Berkeley, 1998
  - Honors Thesis: “*A Statistical Analysis of High-Velocity Clouds in the Leiden/Dwingeloo Survey*”
  - Advisor: Leo Blitz
- Boston Latin School, Class of 1994

### Honors and Awards

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- 2007 International Union of Radio Science Travel Grant
- 2007 International Astronomical Union Travel Grant
- 2007 National Radio Astronomy Student Support Award
- 2002–2006 Green Bank Telescope Student Support Award (5 separate awards)
- 1999 University of Maryland Graduate School Fellowship
- 1998 Dorothea Klumpke-Roberts Prize (UC Berkeley Department of Astronomy)
- 1995 Phillips Prize (Raytheon Co.)

### Employment History

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- Australian Research Council Super Science Fellow, The University of Sydney, 2010–present
- Postdoctoral Fellow in Radio Polarimetry, The University of Sydney, 2008–2010
- Graduate Student Researcher, University of California at Berkeley, 2000–2008
- Graduate Teaching Assistant, University of Maryland at College Park, 1999–2000
  - *Astronomical Techniques* with Professor J. P. Harrington
  - *Theoretical Astrophysics* with Professor L. Mundy
- Research Assistant to Dr. Leo Blitz, University of California at Berkeley, 1998–1999
  - Studies of high-velocity clouds of neutral hydrogen and dwarf spheroidal galaxies.
- Research Intern, Antenna Systems Lab at Florida Tech, SARA/REU Program, 1997
  - Constructed a superheterodyne 1-m radio telescope and measured the far-field beam pattern.
- Teaching Assistant, University of California at Berkeley, 1997
  - *Introductory Astronomy* with Professor A. V. Filippenko
- Student Teacher, Department of Physics, Astronomy, & Geology and Holt Planetarium, Lawrence Hall of Science, UC Berkeley, 1995–1997
  - Hundreds of hours presenting science and planetarium programs to students and public.

### Observing Experience

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- Australia Telescope Compact Array — PI of 1 project (50 hr) and Co-PI of 1 (388 hr)
- 100-m Robert C. Byrd Green Bank Telescope — PI of 9 projects (487 hr) and Co-PI of 16 (1260 hr)
- 305-m Arecibo Telescope — PI of 5 projects (677 hr; 1 *Large Proposal* of 455 hr) and Co-PI of 3 (227 hr)
- 64-m Parkes Radio Telescope — PI of 2 projects (100 hr) and Co-PI of 1 (55 hr)
- BIMA Millimeter Array — 3 weeks as on-site observer; PI of 1 project (30 hr)
- Very Large Array — PI of 1 project (25 hr)
- High-Sensitivity Array (VLBA + phased VLA + GBT + Arecibo) — PI of 1 project (14 hr)

### Computer Skills

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- Expert knowledge of Unix/Linux, C Shell Scripting, L<sup>A</sup>T<sub>E</sub>X, & IDL.
- Working knowledge of Perl, AIPS, GBTIDL, Karma, Matlab, & MIRIAD.
- Developing knowledge of Fortran, Lisp, & Python.

## Professional Societies

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- American Astronomical Society (AAS)
- Astronomical Society of Australia (ASA)
- Astronomical Society of the Pacific (ASP)
- International Union of Radio Science (URSI)

## Professional Service

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- Journal Referee for MNRAS & Radio Science
- Australia Telescope Users Committee, Member 2010–present

## Publications

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### In Preparation

4. “Spectral Polarization of the Redshifted 21 cm Absorption Line Toward 3C 286,” Wolfe, A. M., Jorgenson, R. A., **Robishaw, T.**, Heiles, C., & Prochaska, J. X. 2010
3. “The Magnetic Field of the Irregular Galaxy NGC 4214,” Kepley, A. A., Zweibel, E. G., Wilcots, E. M., Johnson, K. E., **Robishaw, T.**, & Heiles, C. 2010, ApJ, submitted
2. “Magnetic Fields in Galaxies: Observations Confront Theory,” Beck, R., Gent, F., Haverkorn, M., Heesen, V., Heiles, C., Landecker, T., **Robishaw, T.**, Noutsos, A., & Shukurov, A., 2010, Chapter in ISSI Space Science Series Book Large-scale Magnetic Fields in the Universe, Ed. Beck, Balogh, Bykov, Shukurov, Treumann, Widrow
1. “The GALFA-HI Survey: Data Release 1,” Peek, J. E. G., Douglas, K. A., Lee, M.-Y., Grcevich, J., Stanimirović, S., Putnam, M. E., Korpela, E. J., Gibson, S. J., Begum, A., Saul, D., **Robishaw, T.**, & Krčo, M., 2010, ApJS, submitted

### Refereed Journal Articles

7. “On Measuring Accurate 21 cm Line Profiles with the Robert C. Byrd Green Bank Telescope,” **Robishaw, T.**, & Heiles, C. 2009, PASP, 121, 272–294
6. “A Limit on the Polarized Anomalous Microwave Emission of Lynds 1622,” Mason, B. S., **Robishaw, T.**, Heiles, C., Finkbeiner, D., & Dickinson, C. 2009, ApJ, 697, 1187–1193
5. “An 84- $\mu$ G Magnetic Field in a Galaxy at Redshift  $z = 0.692$ ,” Wolfe, A. M., Jorgenson, R. A., **Robishaw, T.**, Heiles, C., & Prochaska, J. X. 2008, Nature, 455, 638–640
4. “Extragalactic Zeeman Detections in OH Megamasers,” **Robishaw, T.**, Quataert, E., & Heiles, C. 2008, ApJ, 680, 981–998
3. “HI Imaging of LGS 3 and an Apparently Interacting High-Velocity Cloud,” **Robishaw, T.**, Simon, J. D., & Blitz, L. 2002, ApJ, 580, L129–L132
2. “Gas Rich Dwarf Spheroidals,” Blitz, L., & **Robishaw, T.** 2000, ApJ, 541, 675–687
1. “Broadband Optical Observations of BL Lacertae during the 1997 Outburst,” Webb, J. R., Freedman, I., Howard, E., Ma, F., Belfort, M., Rave, H., Rumstay, K., Nicol, S., Krick, J., Oswalt, T. D., Marshall, D., & **Robishaw, T.** 1998, AJ, 115, 2244–2249

### Technical Reports

3. “The Proper Production of Full-Stokes Spectra Using the Fully-Functioning Full-Stokes Mode of the GBT Spectrometer,” **Robishaw, T.**, & Heiles, C. 2006, GBT Memos, Memo 244
2. “Calibrating the GBT at L, C, and X Bands,” Heiles, C., **Robishaw, T.**, Troland, T., & Roshi, D. A. 2003, GBT Commissioning Memos, Memo 23
1. “Construction of a Radio Astronomical Receiver and Determination of the Far-Field Pattern,” **Robishaw, T.** 1998, IAPPP Communications, No. 71, 97–99

### Conference Proceedings

6. “The Magnetic Field in Luminous Star-Forming Galaxies,” **Robishaw, T.**, & Heiles, C. 2009, in IAU Symp. 259, Cosmic Magnetic Fields: from Planets, to Stars and Galaxies, ed. K.G. Strassmeier, A.G. Kosovichev & J.E. Beckman (Cambridge: Cambridge Univ. Press), 493–498
5. “Zeeman Splitting in the Diffuse Interstellar Medium - The Milky Way and Beyond,” Heiles, C., & **Robishaw, T.** 2009, in IAU Symp. 259, Cosmic Magnetic Fields: from Planets, to Stars and Galaxies, ed. K.G. Strassmeier, A.G. Kosovichev & J.E. Beckman (Cambridge: Cambridge Univ. Press), 579–590
4. “Magnetic Fields in Irregular Galaxies,” Kepley, A., Wilcots, E., Zweibel, E., Mühle, S., Everett, J., **Robishaw, T.**, Heiles, C., & Klein, U. 2009, in IAU Symp. 259, Cosmic Magnetic Fields: from Planets, to Stars and Galaxies, ed. K.G. Strassmeier, A.G. Kosovichev & J.E. Beckman (Cambridge: Cambridge Univ. Press), 493–498

3. "*Zeeman Splitting in OH Megamasers*," **Robishaw, T.**, Heiles, C., & Quataert, E. 2007, in IAU Symp. 242, Astrophysical Masers and their Environments, ed. J. Chapman & W. Baan (Cambridge: Cambridge Univ. Press)
2. "*Magnetic Fields in Irregular Galaxies*," Kepley, A. A., Muehle, S., Wilcots, E. M., Everett, J., Zweibel, E., **Robishaw, T.**, & Heiles, C. 2007, in Galaxies in the Local Volume, ed. B. Koribalski & H. Jerjen (Berlin: Springer), arXiv:0708.3405
1. "*Dark Matter in Dwarf Galaxies: The First Dark Galaxy?*" Simon, J. D., **Robishaw, T.**, & Blitz, L. 2004, in ASP Conf. Ser. 327, Satellites and Tidal Streams, ed. F. Prada et al. (San Francisco: ASP), 32

## Talks

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### Invited

- “*Measuring Magnetic Fields Using The Zeeman Effect*,” The Harley Wood Winter School, 3 July 2010
- “*Zeeman Splitting of OH Megamasers*,” Cosmic Magnetism from Stellar to Intergalactic Scales, Southern Cross Astrophysics Conference Series, 7 June 2010
- “*Probing Large-Scale Extragalactic Magnetic Fields with the Zeeman Effect*,” Large-Scale Magnetic Fields in the Universe, ISSI Workshop, 3 March 2010
- “*Let’s Split! Using the Zeeman Effect to Probe B Fields Near and Far*,” ATNF AstroFest, 4 December 2008
- “*The Galactic ISM and Magnetic Fields, an Observer’s Perspective*,” Radio Astronomy Laboratory 50th Anniversary, UC Berkeley, 14 November 2008
- “*The Magnetic Field in Luminous Star-Forming Galaxies*,” IAU Symposium 259: Cosmic Magnetic Fields: from Planets to Stars and Galaxies, 4 November 2008
- “*Becoming Troland: Single-Dish Zeeman Observing & Single-Malt Whiskey Drinking*,” The Cosmic Agitator: Magnetic Fields in the Galaxy, 28 March 2008
- “*Polarimetric Calibration of and Zeeman-Splitting Detections from the 100-m Green Bank Telescope and the 305-m Arecibo Telescope*,” Commission J: Radio Astronomy: Polarimetric Radio Astronomy Techniques and Observations, URSI North American Radio Science Meeting, 26 July 2007
- “*Probing Magnetic Fields Near and Far with the Zeeman Effect*,” Star Formation/ISM Seminar, Department of Astronomy, UC Berkeley, 15 May 2007
- “*GBT Measurements of the Zeeman Effect in the Orion Molecular Complex*,” Physics 290B: Space Physics Research Group Seminar, Space Sciences Lab, UC Berkeley, 2 May 2006
- “*Polarization Measurements at the GBT: Calibration, Sidelobes, and the Zeeman Effect*,” Radio and Geoastronomy Lunch Talks, Harvard-Smithsonian Center for Astrophysics, 16 January 2004
- “*The GBT: Probing Magnetic Fields with Zeeman Splitting of the 21-cm Line*,” Commission J: Radio Astronomy: New Science and Technical Developments from the Green Bank Telescope, URSI National Radio Science Meeting, 3 January 2004
- “*Arecibo Mapping of HI in High-Velocity Clouds and Dwarf Galaxies*,” Special Session 89: Observing with the Upgraded Arecibo Telescope: Methods and Recent Results, 198th Meeting of the AAS, 7 June 2001

### Contributed

- “*Magnetic Fields in Starburst Galaxies*,” Astronomical Society of Australia Annual Science Meeting, 8 July 2010
- “*The Discovery of Extragalactic Magnetic Fields in OH Megamasers*,” IAU Symposium 242: Astrophysical Masers and Their Environments, 16 March 2007
- “*The Discovery of Extragalactic Magnetic Fields in OH Megamasers*,” Session 198: ISM/Star Formation, 209th Meeting of the AAS, 9 January 2007
- “*GBT Measurements of the Zeeman Effect*,” Session 195: Kinematics of the ISM, 207th Meeting of the AAS, 12 January 2006
- “*GBT Measurements of the Zeeman Effect in the Eridanus/Orion Region*,” Polarization 2005: Sky Polarization at Far-Infrared to Radio Wavelengths, University of Paris, 14 September 2005
- “*A Catalog of High-Velocity Clouds in the Leiden/Dwingeloo Survey*,” Session 117: Star Formation and the ISM at Galactic Scales, 199th Meeting of the AAS, 9 January 2002
- “*Gas Rich Dwarf Spheroidals*,” Session 90: Gas in Galaxies, 195th Meeting of the AAS, 14 January 2000

## Media Coverage

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- “*Magnetic Fields in Other Galaxies*,” Astronomy.com, 16 January 2007
- “*Astronomers Find Magnetic Slinky in Orion*,” UC Berkeley Press Release, 12 January 2006
- “*Space ‘Slinky’ Confirms Theory with a Twist*,” Space.com, 12 January 2006
- “*Threading the Magnetic Slinky*,” West Virginia Mountain Radio Astronomy Show, WVMR, 9 April 2005
- “*Astronomers Find First ‘Dark Galaxy’*,” NewScientist.com, 20 October 2003
- “*Gas Clouds in Space: Remnants of the Big Bang?*” by Key Davidson, San Francisco Examiner, 14 January 2000

## Conferences & Workshops Attended

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- Blitzed65, 29–30 October 2010 — Berkeley, CA, USA
- GALFACTS/POSSUM 2010 Workshop, 16–20 August 2010 — Calgary, AB, CAN
- Astronomical Society of Australia Annual Science Meeting, 5–8 July 2010 — Hobart, TAS, AUS
- The Harley Wood Winter School, 2–4 July 2010 — Bagdad, TAS, AUS
- Southern Cross Astrophysics Conference Series: Cosmic Magnetism from Stellar to Intergalactic Scales, 7–11 June 2010 — Kiama, NSW, AUS

- ISSI Workshop: Large-Scale Magnetic Fields in the Universe, 1–5 March 2010 — Bern, CHE
- Diffuse Gas in and around the Milky Way, 3–4 December 2009 — Marsfield, NSW, AUS
- MWA Project Meeting, 19–23 January 2009 — Canberra, ACT, AUS
- ATNF AstroFest, 3–4 December 2008 — Marsfield, NSW, AUS
- Radio Astronomy Laboratory 50th Anniversary, 13–14 November 2008 — Berkeley, CA, USA
- IAU Symposium 259: Cosmic Magnetic Fields: from Planets to Stars and Galaxies, 3–7 November 2008 — Puerto Santiago, Tenerife, ESP
- The Cosmic Agitator: Magnetic Fields in the Galaxy, 26–29 March 2008 — Lexington, KY, USA
- 2007 URSI North American Radio Science Meeting, 22–26 July 2007 — Ottawa, ON, CAN
- IAU Symposium 242: Astrophysical Masers and Their Environments, 12–16 March 2007 — Alice Springs, NT, AUS
- 209th Meeting of the American Astronomical Society, 5–10 January 2007 — Seattle, WA, USA
- 207th Meeting of the American Astronomical Society, 8–12 January 2006 — Washington, DC, USA
- Polarization 2005: Sky Polarization at Far-Infrared to Radio Wavelengths, 12–15 September 2005 — Paris, FRA
- GBTIDL Design Workshop (*Invited*), 15 October 2004 — Green Bank, WV, USA
- Diffuse Matter in the Galaxy: Observations Confront Theory — A Meeting in Honor of the 65th Birthday of Carl Heiles, 29 August–2 September 2004 — Arecibo, Puerto Rico, USA
- 2004 URSI National Radio Science Meeting, 4–8 January 2004 — Boulder, CO, USA
- Milky Way Surveys: The Structure and Evolution of Our Galaxy, 15–17 June 2003 — Boston, MA, USA
- 199th Meeting of the American Astronomical Society, 6–10 January 2002 — Washington, DC, USA
- 198th Meeting of the American Astronomical Society, 3–7 June 2001 — Pasadena, CA, USA
- 7th Synthesis Imaging Summer School, 20–27 June 2000 — Socorro, NM, USA
- Looking Ahead In Wonder: From Comets to the Universe — J. H. Oort Centenary Symposium, 25–27 April 2000 — Leiden, NLD
- 195th Meeting of the American Astronomical Society, 11–15 January 2000 — Atlanta, GA, USA
- Science with the Atacama Large Millimeter Array, 6–8 October 1999 — Washington, DC, USA
- BIMA Interferometry Summer School, 19–23 July 1999 — Hat Creek, CA, USA