Last modified January 18, 2022

Jessica L. Campbell

Curriculum Vitaé

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Research Interests

Galactic magnetism; multi-phase interstellar medium; radio polarization; dust extinction; star formation

Education

Ph.D., Astronomy & Astrophysics, DADDAA & Dunlap, UofT — Sept 2016 – Jan 2023
Preliminary thesis entitled "*A Multi-Frequency View of Magnetic Fields and Interstellar Dust Extinction in the Milky Way Galaxy*" supervised by Bryan Gaensler and Susan Clark

H.B.Sc., Astronomy & Physics, UofT — Sept 2011 – June 2016
Undergraduate thesis entitled "*Using High-Resolution JCMT Imaging to Complement Herschel Observations in Regions of Massive Star Formation*" supervised by Peter Martin

Honours and Awards

2021	**CASCA Poster Prize**, CASCA Board
2021	**Ontario Graduate Scholarship** ($15,000), DADDAA, UofT
2020	**'You Lead, We Follow' Award**, Dunlap, UofT
2020	**CASCA Poster Prize**, CASCA Board
2020	**CASCA Poster Prize**, CASCA GSC
2019	**Reinhardt Fund Award**, DADDAA, UofT
2018	**'Above and Beyond' Award**, Dunlap, UofT
2018 – 2019	**University of Toronto Fellowship** ($11,742), UofT
2017 – 2018	**University of Toronto Fellowship** ($11,742), UofT
2016 – 2017	**University of Toronto Fellowship** ($15,855), UofT
2016 – 2017	**DADDAA Fellowship** ($8,891), DADDAA, UofT
2016	**CITA Undergraduate Summer Research Award** ($8,400), CITA, UofT
2016	**Reinhardt Fund Award**, DADDAA, UofT
2016	**Conference Travel Grant**, Dunlap & DADDAA, UofT
2015	**Leiden/ESA Astrophysics Program for Summer Students Fellowship**, Leiden Observatory, Leiden University
2014	**Summer Undergraduate Research Program Award** ($8,000), Dunlap, UofT
2013	**Summer Undergraduate Research Program Award** ($10,000), Dunlap, UofT

Refereed Publications

5. **J. L. Campbell**, P. G. Martin, et al., "*Bright Infrared Stars and Interstellar Extinction in the W3 Giant Molecular Cloud,*" 2022, to appear in ApJ (in prep)
4. J. L. West, **J. L. Campbell**, [2 authors], P. Singh, et al., "*Discovery of a Peculiar Filamentary Structure Connected to the Coherent Magnetic Field in the Outer Galaxy,*" 2022, to appear in ApJL (submitted)
3. **J. L. Campbell**, S. E. Clark, B. M. Gaensler, A. Marchal, C. L. Van Eck, et al., "*A Comparison of Multi-phase Magnetic Field Tracers in a High-Galactic Latitude Region of the Filamentary Interstellar Medium,*" 2022, to appear in ApJ (24 pages, accepted) arXiv:2112.03247
2. A. J. M. Thomson, T. L. Landecker, N. M. McClure-Griffiths, et al. incl. **J. L. Campbell**, "*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, MNRAS, 507, 3495T (24 pages)

1. **J. L. Campbell**, R. K. Friesen, P. G. Martin et al., "*Contraction Signatures Toward Dense Cores in the Perseus Molecular Cloud,*" 2016, ApJ, 819, 143C (17 pages)

Scientific Presentations

Invited Talks

July 2021	**DRAO Seminar Series**; Dominion Radio Astrophysical Observatory (*virtual*)
June 2021	**AAS 238**; Arecibo Observatory - Legacy and Future Splinter Session (*virtual*)

Contributed Talks and Posters

May 2021	**CASCA** (poster); NRC Herzberg Astronomy and Astrophysics Research Center (*virtual*)
May 2020	**CASCA** (poster); York University (*virtual*)
June 2019	**New Perspectives on Galactic Magnetism**; University of Newcastle upon Tyne, England
Jan. 2019	**Big Apple Magnetic Fields**; Flatiron Center for Computational Astrophysics, NY
Nov. 2018	**Milky Way in the Age of GAIA**; Institut d'Astrophysique Spatiale, France
2016	**CCUWiP** (poster); Dalhousie University, NS

Workshops

Oct. 2017	**GMIMS Science Workshop**; Dominion Radio Astrophysical Observatory, BC
May 2017	**Python in Astronomy Conference**; Lorentz Center, Leiden University

Teaching and Mentorship

Student Supervision

2020 – 2021	**Parampreet Singh**; co-supervised with Jennifer West, undergraduate thesis (AST425Y)

Student Mentorship

2018 – 2019	**James Lane**; incoming PhD student, UofT
2017 – 2018	**Colleen Gilhuly**; incoming PhD student, UofT
	Victor Chan; incoming PhD student, UofT

Teaching Assistantships

Winter 2022	**Galaxies and Cosmology** (AST222)
Fall 2021	**Stars and Planets** (AST221)
Summer 2021	**Stars and Galaxies** (AST201)
Winter 2021	**Galaxies and Cosmology** (AST222)
Fall 2020	**Practical Astronomy** (AST325)
Winter 2020	**Galaxies and Cosmology** (AST222)
Fall 2019	**Stars and Planets** (AST221)
Summer 2019	**Life on Other Worlds** (AST251)
Winter 2019	**Life on Other Worlds** (AST251)
Fall 2018	**Great Moments in Astronomy** (AST210)
Winter 2018	**Life on Other Worlds** (AST251)
Fall 2017	**Great Moments in Astronomy** (AST210)
Winter 2017	**Stars and Galaxies** (AST201)
Fall 2016	**Stars and Galaxies** (AST101)
Winter 2016	**The Sun and its Neighbours** (AST201); **Great Astronomical Issues** (PMU199)
Winter 2015	**Stars and Galaxies** (AST201)

Research Experience

Graduate

2017 – 2023 **Ph.D. Thesis**, DADDAA & Dunlap, UofT
Preliminary thesis entitled "*Polarimetry and 21 cm HI as a Probe of Galactic Magnetism in a Multi-phase Interstellar Medium*" supervised by Bryan Gaensler and Susan Clark

2017 **Graduate Research Course**, DADDAA & Dunlap, UofT
"*A Magneto-ionic Radio Polarization Study of the Orion-Eridanus Superbubble Region, Loop III and the Intermediate Velocity Arch*" supervised by Bryan Gaensler

2016 – 2017 **Graduate Research Course**, DADDAA & Dunlap, UofT
"*Interstellar Extinction Towards OB Stars in the Molecular Interstellar Medium of W3*" supervised by Peter Martin

Undergraduate

2016 **Summer Undergraduate Researcher**, CITA, UofT
"*Bright Infrared Stars in the W3 Giant Molecular Cloud*" supervised by Peter Martin

2015 **Leiden/ESA Astrophysics Program for Summer Students**, Leiden University
"*Astrochemical Conditions of the Low-Mass Protostar IRAS 16293-2422 using ALMA*" supervised by Mihkel Kama and Magnus Persson

2014 – 2015 **Undergraduate Research Course**, DADDAA, UofT
"*Using High-Resolution JCMT Imaging to Complement Herschel Observations in Regions of Massive Star Formation*" supervised by Peter Martin

2014 **Summer Undergraduate Research Program**, Dunlap, UofT
"*Connecting Local Galaxies to Damped Lyman Alpha Systems via 21-cm*" supervised by Brian Cherinka

2013 – 2014 **Undergraduate Research Course**, CITA, UofT
"*Molecular Line Tracers of Kinematics in Star-Forming Regions*" supervised by Rachel Friesen and Peter Martin

2013 **Summer Undergraduate Research Program**, Dunlap, UofT
"*Contraction Signatures Toward Dense Cores in the Perseus Molecular Cloud*" supervised by Rachel Friesen

Academic Service

2020 **Graduate Panel Discussion**; ASU, UofT (*virtual*)
2020 **SURP Graduate Student Panel Discussion**; DADDAA, UofT (*virtual*)
2020 **Graduate Student Panel Discussion**; ASU, UofT
2019 – 2020 **TMT Statement Committee**; GASA, UofT (elected)
2019 – 2020 **People Representing Intersectional Spectral Minorities**; GASA, UofT (elected)
2018 – 2020 **Dunlap Management Committee (student rep)**; DADDAA, UofT (elected)
2017 – 2018 **Values Statement Committee**; DADDAA, UofT
2017 – 2018 **Indigenous Astronomy Workshop Committee**; DADDAA, UofT
2016 – 2018 **CUPE Local 3902 Unit 1 Representative**; GASA, UofT (elected)
2015 – 2018 **Dunlap Diversity Committee (DDC)**; Dunlap, UofT
2017 **Dunlap Summer School Admissions Committee**; Dunlap, UofT
2017 – 2018 **Mediation Committee**; GASA, UofT (elected)
2017 – 2018 **Graduate Course Committee**; GASA, UofT (elected)
2017 – 2018 **Mental Health Committee**; GASA, UofT (elected)
2016 – 2017 **Dunlap Associate**; Dunlap, UofT

Outreach

2020 **GSC's Grad Highlights**, CASCA (**link to article**)
2013 – 2017 **AstroTours Volunteer**, UofT
2015 – 2016 **Director of Outreach**, Astronomy and Space Exploration Society, UofT
2015 **Fall Campus Day**, UofT
2013 – 2014 **Director of Outreach**, Astronomy and Space Exploration Society, UofT
2015 – 2014 **Science Rendezvous Solar Telescope Operator**, UofT
2013 – 2014 **Current in Space News Producer**, The Star Spot podcast
2013 **Sidewalk Astronomy Solar Telescope Operator**, UofT

Media Coverage

2017 **Road Trip! UofT Students and Faculty Chase Total Solar Eclipse**; *UofT News*, UofT (**link to article**)