

Eric W. Koch

Curriculum Vitæ

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Education

- 2016-Present *University of Alberta*
PhD. (Physics)
Adviser: Erik Rosolowsky
- 2014-2016 *University of Alberta*
MSc. (Physics)
Thesis: "The Atomic Interstellar Medium in M33"
Adviser: Erik Rosolowsky
- 2010-2014 *University of British Columbia*
Hon. BSc. (Physics)

Employment

- 2014-present *University of Alberta*
Graduate Student
- 2011-2013 *University of British Columbia, Okanagan*
Teaching Assistant
- 2013-2014 *University of British Columbia, Okanagan*
Research Assistant

Fellowships and Awards

- 2019 *University of Alberta/The Ohio State University*
NSERC Michael Smith Foreign Study Supplements
- 2018 *University of Alberta*
Queen Elizabeth II PhD Scholarship
- 2017 *University of Alberta*
NSERC Alexander Graham Bell Canada Graduate Scholarship - Doctorate
- 2016 *University of Alberta*
NSERC Post-graduate Graduate Scholarship - Doctorate
- 2015 *University of Alberta*
Queen Elizabeth II MSc Scholarship
- 2010-2014 *University of British Columbia, Okanagan*
Deputy Vice Chancellor Scholarship
- 2014 *University of British Columbia, Okanagan*
Distinguished Graduate Award - Physics, Math, Statistics & Computer Science
- 2014 *University of Alberta*
NSERC Canadian Graduate Scholarship - Masters
- 2013 *University of Alberta*
NSERC USRA
- 2013 *University of British Columbia, Okanagan*
Top Oral Presenter - UBC-O Undergraduate Research Conference
- 2013 *University of British Columbia, Okanagan*
Upper Year Physics Award
- 2012 *University of British Columbia, Okanagan*
NSERC USRA

- 2012 *University of British Columbia, Okanagan*
Second Year Physics Award - Honourable Mention
- 2010 *University of British Columbia, Okanagan*
President's Entrance Scholarship

External Funding

- 2015 **Co-I** - *A centralized database for pan-chromatic nearby galaxy data*
Amazon Web Services & Square Kilometre Array
\$3200 USD (credits)
- 2015 **Co-I** - *Development of an image variability service in the cloud*
Amazon Web Services & Square Kilometre Array
\$14000 USD (credits)
- 2015 **PI** - *Developing a radio cube imaging service in the cloud*
Amazon Web Services & Square Kilometre Array
\$1500 USD (credits)

Publications

Refereed

9. **EW Koch**, EW Rosolowsky, A Schrubba, A Leroy, AA Kepley, J Braine, J Dalcanton, MC Johnson. "Relationship between the Line Width of the Atomic and Molecular ISM in M33." 2019, [None](#).
8. **EW Koch**, EW Rosolowsky, FJ Lockman, AA Kepley, A Leroy, A Schrubba, J Braine, J Dalcanton, MC Johnson, S Stanimirović. "Kinematics of the atomic ISM in M33 on 80 pc scales." 2018, [MNRAS 479 2505-2533](#).
7. RD Boyden, SSR Offner, **EW Koch**, EW Rosolowsky. "Assessing the Impact of Astrochemistry on Molecular Cloud Turbulence Statistics." 2018, [ApJ 860 157](#).
6. **EW Koch**, CG Ward, S Offner, J Loepky, E Rosolowsky. "Identifying Tools for Comparing Simulations of Star Formation." 2017, [MNRAS 471 1506-1530](#).
5. Y Lin, HB Liu, JE Dale, D Li, G Busquet, ZY Zhang, A Ginsburg, R Galvan-Madrid, A Kovacs, **E Koch**, L Qian, K Wang, S Longmore, HR Chen, D Walker. "Cloud Structure of Three Galactic Infrared Dark Star-forming Regions from Combining Ground- and Space-based Bolometric Observations." 2017, [ApJ 840 22](#).
4. RD Boyden, **EW Koch**, EW Rosolowsky, SSR Offner. "An Exploration of the Statistical Signatures of Stellar Feedback." 2016, [ApJ 833 233](#).
3. Y Lin, HB Liu, D Li, Z-Y Zhang, A Ginsburg, JE Pineda, L Qian, R Galván-Madrid, AF McLeod, E Rosolowsky, JE Dale, K Immer, **E Koch**, S Longmore, D Walker, L Testi. "Cloud Structure of Galactic OB Cluster-forming Regions from Combining Ground and Space-based Bolometric Observations." 2016, [ApJ 828 32](#).
2. **EW Koch**, EW Rosolowsky. "Filament Identification through Mathematical Morphology." 2015, [MNRAS 452 3435-3450](#).
1. **EW Koch**, A Bahramian, CO Heinke, K Mori, N Rea, N Degenaar, D Haggard, R Wijnands, G Ponti, JM Miller, F Yusef-Zadeh, F Dufour, WD Cotton, FK Baganoff, MT Reynolds. "The 2013 outburst of a transient very faint X-ray binary, 23 arcsec from Sgr A*." 2014, [MNRAS 442 372-381](#).

Non-refereed

2. **E Koch**, E Rosolowsky, AK Leroy. "Radio-line Broadening from a Spectral Response Function." 2018, [RNAAS 2 220](#).
1. **E Koch**, E Rosolowsky, MC Johnson, AA Kepley, A Leroy. "Detection of an OH 1665 MHz Maser in M33." 2018, [RNAAS 2 24](#).

Observing Experience

- Three VLA projects as PI (180 hours awarded)
- One NOEMA project as co-I (16 hours awarded)
- One ALMA project as co-I (22 hours requested; 6 hours observed)

Professional Talks

2019 January	<i>Big Apple Magnetic Fields Workshop, New York, USA</i> “Turbustat: Python-based turbulence statistics”
2018 August	<i>CHANG-ES Team Meeting, Calgary, Canada</i> “De-obfuscating HI & CO Comparisons in M33”
2018 July	<i>PHAT/M33 Team Meeting, Ringberg, Germany</i> “Atomic Gas in M31 and M33”
2018 May	<i>Olympian Symposium, Paralia Katerini, Greece</i> “Spatially-Varying Turbulent Properties in M33”
2017 June	<i>Canadian Astronomical Society (CASCAS) Meeting, Edmonton, Canada</i> “Linking the Atomic and Molecular ISM in M33”
2016 Aug	<i>Lorentz Centre - Apples to Apples Workshop</i> “Identifying Tools for Comparing Simulations and Observations of Star-forming Regions”
2016 Feb	<i>MPE - CAS Seminar</i> “Comparing Simulations and Observations of Star Formation using Experimental Design”
2016 Feb	<i>MPIfR - Special Colloquium</i> “Comparing Simulations and Observations of Star Formation using Experimental Design”
2015 May	<i>Florence Simulations-Observations Workshop (Florence, Italy)</i> “Critically Comparing Simulations and Observations of Star Formation”
2014 Apr	<i>UBC-O Undergraduate Research Conference (Kelowna)</i> “Filament Identification through Mathematical Morphology”
2013 Nov	<i>UBC-O Brown Bag Series (Kelowna)</i> “A New Low-Mass X-Ray Binary in the Galactic Centre”
2013 Apr	<i>UBC-O Undergraduate Research Conference (Kelowna)</i> “Converging Flows in Star-Forming Regions”

Poster Presentations

2013 Jun	<i>Canadian Astronomical Society Conference (Vancouver)</i> “Converging Flows in Star-Forming Regions”
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Service

2018-Present	Referee for MNRAS
2013-2014	Physics representative on Quantitative Sciences Course Union Council
2016-2017	UAlberta representative on the Canadian Astronomical Society Graduate Student Committee

Outreach

2018 December	<i>Royal Astronomical Society of Canada (Edmonton Centre)</i> “Unravelling Star Formation”
2018 May	<i>Northern Alberta Radio Club (Edmonton)</i> “Viewing the Sky with Radio Interferometry”
2017 February	<i>University of Alberta Observatory Public Observing Night</i> “Blowing Bubbles in a Galaxy”
2016 - 2018	<i>University of Alberta Observatory</i> “Public Observing & School Tours”