

# Ari Silburt

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## EDUCATION

*Doctorate of Philosophy, Astrophysics (Candidate)* 2012–2017  
Location: University of Toronto, Toronto, ON, Canada  
Advisor: Prof. Hanno Rein  
Thesis: Statistics, Formation and Stability of Exoplanetary Systems.

*Bachelor of Science, Honours Physics* 2008–2012  
Location: Mount Allison University, Sackville, NB, Canada  
Advisor: Prof. David Hornidge  
Thesis: Improvement of the Compton Beam Asymmetry.

## AWARDS & HONOURS

*NSERC PGS-D Research Grant:* Graduate research award from the National Science and Engineering Research Council of Canada. 2015–2017

*Walter C Sumner Fellowship:* National achievement award for academics and research. 2015–2017

*SGS Conference Grants:* Two grants from the University of Toronto School of Graduate Studies, awarded for the purpose of presenting original research at top tier conferences. 2015, 2016

*NSERC CGS-M Research Grant:* Graduate research award from the National Science and Engineering Research Council of Canada. 2013–2014

*Dr. R. N. Varma Memorial Award:* Graduating Mount Allison University physics student with highest GPA. 2012

*Donald G. MacGregor Scholarship:* 3rd year Mount Allison University physics student with highest GPA. 2011

*NSERC USRA Research Grant:* Two Undergraduate summer research awards from the National Science and Engineering Research Council of Canada. 2010–2012

*Harrison McCain Scholarship:* Mount Allison University scholarship for academic excellence. 2008–2012

## PUBLICATIONS

**Silburt, A.**, Rein, H., “Resonant structure, formation and stability of the planetary system HD155358”, 2017, MNRAS (submitted)

**Silburt, A.**, Rein, H., Tamayo, D., “HERMES: A Hybrid Integrator for Simulating Close Encounters and Planetesimal Migration”, 2016, MNRAS (submitted),

preprint: <http://astro.utoronto.ca/~silburt/HERMES.pdf>

Tamayo, D., **Silburt, A.**, et al., “A Machine Learns to Predict the Stability of Tightly Packed Planetary Systems”, 2016, ApJL, 832, L22 (5pp)

**Silburt, A.**, Rein, H., “Tides Alone Cannot Explain Kepler Planets Close to 2:1 MMR”, 2015, MNRAS, 453, 4089S (7pp)

**Silburt, A.**, Gaidos, E., Wu, Y., “A Statistical Reconstruction of the Planet Population Around Kepler Solar-Type Stars”, 2015, ApJ, 790, 180S (12pp)

## SCIENTIFIC TALKS AND POSTERS

Talk: “*The Formation and Stability of Kepler Planets*”, Carnegie Institute for Science, 2016. Location: Washington D.C., USA.

Talk: “*Comparing the Formation of Kepler Systems to the Solar System*”, Massachusetts Institute of Technology, 2016. Location: Boston, MA, USA.

Talk: “*Machine Learning to Predict Planet Stability*”, Stars and Planets Seminar, Harvard University, 2016. Location: Boston, MA, USA.

Talk: “*Forming Planetary Systems: A Comparative Study Between the Solar System and the Kepler Population*”, Princeton University’s “Thunch”, 2016. Location: Princeton, NJ, USA.

Talk: “*HERMES: A hybrid integrator for simulating close encounters and planetesimal migration*”, Emerging Researchers in Exoplanet Science Symposium II (ERESS II), 2016. Location: Cornell University, NY, USA.

Poster: “*Tidal Forces Cannot Explain Planets Close to 2:1 Mean Motion Resonance*”, Extreme Solar Systems III (ESS-III), 2015. Location: Waikoloa Beach, HI, USA.

Talk: “*Sifting Through the Noise: A Re-calculation of the Occurrence of Earth-Sized Planets around Kepler Stars*”, Emerging Researchers in Exoplanet Science Symposium (ERESS), 2015. Location: University Park, PA, USA.

Talk: “*Extracting the Radius Distribution using noisy Kepler Data*”, CITA Blackboard Talk, 2015. Location: University of Toronto, Toronto, ON, Canada.

Talk: “*Improving the Beam Asymmetries for Compton Scattering from the 2008 Data*”, Atlantic Undergraduate Physics and Astronomy Conference (AUPAC), 2012. Location: Halifax, NS, Canada.

Talk: “*Extracting the Cross Sections and Beam Asymmetries from the 08 Data*”, Institut für Kernphysik, 2011. Location: Universität Mainz, Mainz, Germany.

Talk: “*Improving the Beam Asymmetries of the Proton*”, Mount Allison Summer Undergraduate Research Fair (SURF), 2011. Location: Sackville, NB, Canada.

## TEACHING

I held the position of “Teaching Assistant” for all entries listed below, and was responsible for leading tutorial lectures, performing planetarium shows, conducting nighttime telescope observing sessions, marking and/or

proctoring:

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| “PSCB 57: <i>Intro to Scientific Computing</i> ”, University of Toronto.         | 2016      |
| “AST 251: <i>Life on Other Worlds</i> ”, University of Toronto.                  | 2016      |
| “AST 210: <i>Great Moments in Astronomy</i> ”, University of Toronto.            | 2015      |
| “AST 101: <i>The Sun and its Neighbours</i> ”, University of Toronto.            | 2012–2015 |
| “AST 201: <i>Stars and Galaxies</i> ”, University of Toronto.                    | 2013–2014 |
| “PHYS 1031: <i>Stars, Galaxies and the Universe</i> ”, Mount Allison University. | 2012      |
| “PHYS 3001: <i>Astrophysics</i> ”, Mount Allison University.                     | 2011      |
| “PHYS 3021: <i>Life in the Universe</i> ”, Mount Allison University.             | 2011      |
| “PHYS 1021: <i>Solar System Astronomy</i> ”, Mount Allison University.           | 2010      |
| “PHYS 1551: <i>General Physics II</i> ”, Mount Allison University.               | 2010      |
| “PHYS 1051: <i>General Physics I</i> ”, Mount Allison University.                | 2009      |

#### SELECTED OUTREACH

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| “AstroTours” Public Talk: “ <i>The Butterfly Effect: Chaos Theory and its Influence on our Lives</i> ”, University of Toronto, link: <a href="https://www.youtube.com/watch?v=kK3Kj1sSUeg">https://www.youtube.com/watch?v=kK3Kj1sSUeg</a> | 2016      |
| “AstroTours” Keynote Lecture Head Organizer, University of Toronto. Invited Speaker – Fran Bagenal, University of Colorado Boulder.  | 2016      |
| “AstroTours” Public Talk: “ <i>A Conversation With Our Old Friend The Moon</i> ”, University of Toronto, link: <a href="https://www.youtube.com/watch?v=HmCa9qN6DVA">https://www.youtube.com/watch?v=HmCa9qN6DVA</a>                       | 2016      |
| Scientific Consultant for WJ Gastle’s novel “ <i>Mission 32 (Will Hunter Chronicles Book 1)</i> ”.   | 2014–2016 |
| Planetarium Operator and Lecturer at the University of Toronto Planetarium.  | 2013–2016 |
| Telescope Operator and Volunteer for the University of Toronto’s “AstroTours”, University of Toronto.  | 2012–2016 |
| “AstroTours” Public Talk: “ <i>Interstellar: The Science Behind the Movie</i> ”, University of Toronto, link: <a href="https://www.youtube.com/watch?v=_mbdxCD_6rA">https://www.youtube.com/watch?v=_mbdxCD_6rA</a>                        | 2015      |
| “AstroTours” Public Talk: “ <i>Distant Earths</i> ”, University of Toronto link: <a href="https://www.youtube.com/watch?v=mLYzxB8VjQY">https://www.youtube.com/watch?v=mLYzxB8VjQY</a>   | 2013      |
| Astronomy Society Executive Member, Mount Allison University.  | 2010–2012 |
| Telescope Operator for Public Tours and Science Labs, Mount Allison University.  | 2009–2012 |