

Adiv Paradise

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EDUCATION

University of Minnesota - Twin Cities May 2014
B.S. in Astrophysics and Physics, *magna cum laude*

University of Toronto Started September 2015
Ph.D. Candidate in Astrophysics

RESEARCH GROUPS

Exoplanetary Climates & Habitability 2015–Present
Dr. Kristen Menou, University of Toronto

CHIME Radio Telescope Data Processing 2015
Dr. Keith Vanderlinde, University of Toronto

Computational Fluid Dynamics & Numerical Methods 2013–2015
Drs. Paul Woodward & William Dai, University of Minnesota & Los Alamos National Laboratory

Solar Wind & Magnetospheric Physics 2011–2014
Drs. Cynthia Cattell & Aaron Breneman, University of Minnesota

TEACHING EXPERIENCE

University of Toronto Department of Astronomy & Astrophysics
Teaching Assistant September 2015 – Present

Camp Galil
Camp Counselor June 2010 – July 2010

Beth Jacob Congregation
Teaching Assistant September 2006 – May 2010

JOURNAL PUBLICATIONS

1. **Paradise, Adiv**, Bo Lin Fan, Kristen Menou, and Christopher Lee. *Climate Diversity in the Habitable Zone due to Varying pN\$_{2}\$ Levels*. 2019. Submitted to *Icarus*
2. **Paradise, Adiv**, Cesar B. Rocha, Pragallva Barpanda, and Noboru Nakamura. *Blocking Statistics in a Varying Climate: Lessons from a Traffic Jam Model with Pseudostochastic Forcing*. *Journal of the Atmospheric Sciences*, 76(10):3013–3027, oct 2019
3. **Paradise, Adiv**, Kristen Menou, Diana Valencia, and Christopher Lee. *Habitable Snowballs: Temperate Land Conditions, Liquid Water, and Implications for CO₂ Weathering*. *Journal of Geophysical Research: Planets*, 124(8):2087–2100, aug 2019
4. **Paradise, Adiv** and Kristen Menou. *GCM Simulations of Unstable Climates in the Habitable Zone*. *The Astrophysical Journal*, 848(1):33, 2017

5. Kiyoshi W. Masui, J. Richard Shaw, Cherry Ng, Kendrick M. Smith, Keith Vanderlinde, and **Paradise, Adiv**. Algorithms for FFT Beamforming Radio Interferometers. *The Astrophysical Journal*, 879(1):16, jun 2019
6. Cherry Ng, Keith Vanderlinde, **Paradise, Adiv**, Peter Klages, Kiyoshi Masui, Kendrick Smith, Kevin Bandura, Patrick Joseph Boyle, Matt Dobbs, Victoria Kaspi, Andre Renard, J Richard Shaw, Ingrid Stairs, and Ian Tret'yakov. CHIME FRB: An application of FFT beamforming for a radio telescope. XXXIIth URSI General Assembly & Scientific Symposium (URSI GASS) 2017, August 2017
7. Daniel Tamayo, Ari Silburt, Diana Valencia, Kristen Menou, Mohamad Ali-Dib, Cristobal Petrovich, Chelsea X. Huang, Hanno Rein, Christa van Laerhoven, **Paradise, Adiv**, Alysa Obertas, and Norman Murray. A Machine Learns to Predict the Stability of Tightly Packed Planetary Systems. *The Astrophysical Journal*, 832(2):L22, nov 2016
8. A. W. Breneman, C. A. Cattell, K. Kersten, **Paradise, A.**, S. Schreiner, P. J. Kellogg, K. Goetz, and L. B. Wilson. STEREO and Wind observations of intense cyclotron harmonic waves at the Earth's bow shock and inside the magnetosheath. *Journal of Geophysical Research: Space Physics*, 118(12):7654–7664, 2013
9. A. Breneman, C. Cattell, J. Wygant, K. Kersten, L. B. Wilson, L. Dai, C. Colpitts, P. J. Kellogg, K. Goetz, and **Paradise, A.** Explaining polarization reversals in STEREO wave data. *Journal of Geophysical Research: Space Physics*, 117(4):1–8, 2012

SELECTED CONFERENCE PROCEEDINGS

1. **Paradise, Adiv**, Bo Lin Fan, Krisen Menou, and Christopher Lee. Blue Skies: The Role of pN2 in the Habitable Zone (Talk). 2019
2. **Paradise, Adiv**, Kristen Menou, Diana Valencia, and Christopher Lee. Generalizing the Habitable Zone: Temperate Continental Regions on Some Snowball Planets (Talk). August 2018
3. A. Paradise and K. Menou. The Habitability of Frozen Worlds. *Emerging Researchers in Exoplanet Sciences III* (Talk), June 2017
4. A. Paradise and P. Woodward. Toward a new implicit scheme using Riemann invariants. *JINA-CEE GNASH: The anomalous metal-poor stars and convective-reactive nuclear astrophysics* (Talk), May 2015
5. **Paradise, Adiv**, Bo Lin Fan, Krisen Menou, and Christopher Lee. Low-Cost Inference of Terrestrial Climates With Broadband Photometry (Poster). August 2019
6. A. Paradise and K. Menou. Stable weathering equilibria in snowball planets in the habitable zone. *Emerging Researchers in Exoplanet Sciences II* (Poster), June 2016
7. A. Paradise, P. Woodward, and W. Dai. Development and Optimization of a Fast Poisson Solver using a Red-Black Multigrid Approach in 2-D. *LANL Computing and Information Technology Student Mini Showcase* (Poster), july 2014
8. A. Paradise, A. W. Breneman, C. A. Cattell, K. Kersten, S. Schreiner, P. J. Kellogg, K. Goetz, and L. B. Wilson, III. STEREO and Wind Observations of Intense Cyclotron Harmonic Waves at the Earth's Bow Shock (Poster). December 2013

COMMUNITY SERVICE

Served on the Independent School District 197 Strategic Redesign Advisory Committee, tasked with finding innovative ways to address longterm structural budget deficits, while improving the quality of education for all ages. Personal focus was on identifying alternative classroom and teaching styles that would be more likely to deliver individualized learning opportunities without adversely impacting overall education.

SELECTED MEDIA ENGAGEMENT

UTSC News: “Can life exist on a snowball planet? New UTSC research says yes”. Don Campbell: August 7, 2019. Press release. <https://utsc.utoronto.ca/news-events/breaking-research/can-life-exist-snowball-planet-new-utsc-research-says-yes>

AGU Blogosphere: “Study suggests frozen Earthlike planets could support life”. Abigail Eisenstadt: July 29, 2019. Online. <https://blogs.agu.org/geospace/2019/07/29/study-suggests-frozen-earthlike-planets-could-support-life/>

Scientific American: “Like Ancient Snowball Earth, Frozen Planets May Still Be Habitable”. Shannon Hall: March 13, 2018. Online. <https://www.scientificamerican.com/article/like-ancient-snowball-earth-frozen-planets-may-still-be-habitable/>

CBC News: Interview. “These 3 Toronto students chased the solar eclipse all the way to Oregon”. Malone Mullin: August 21, 2017. Online. <http://www.cbc.ca/news/canada/toronto/eclipse-chasers-1.4254841>

U of T News: Interview. “Road Trip! U of T students and faculty chase total solar eclipse”. Romi Levine: August 11, 2017. Online. <https://www.utoronto.ca/news/road-trip-u-t-students-and-faculty-chase-total-solar-eclipse>

SELECTED OUTREACH

David Dunlap Observatory Speaker Series

“A Brief Update on the Search for Earth 2.0” August 10, 2019

UofT Grad Room Speaker Series

“Telescope Earth: Using Climate Here to Understand Worlds Out There” April 11, 2019

ASX: Astronomy & Space Exploration Society

“Is Anybody Out There?” Panel Discussion – Panelist March 7, 2018

AstroTours Astronomy Outreach Events

“2019 Earth Hour Panel – Panelist March 30, 2019

“Cold Out There, Eh? The Climates of Alien Worlds” (Lecture) March 1, 2018

Dunlap Institute for Astronomy & Astrophysics

“The Squid-People of Proxima b”

– ‘Astro on Tap’ March 23, 2018

– ‘Dunlap Teachers’ Workshop’ April 28, 2018

– ‘YorkU Teachers’ Workshop’ August 16, 2018

“Ask an Astronomer” Email Service 2016–Present

University of Toronto Libraries “Science Literacy Week”

Human Book: ‘What is an Astronomer?’ September 2017

AAAS “Book Smart” Book Club: ‘The Hunt for Vulcan’ by Thomas Levinson

Expert Facilitator for Book Discussion 2016

EXTRA-CURRICULARS

University of Toronto Campus Philharmonic Orchestra

French Horn 2018–2019

University of Toronto Graduate Student Union

General Council Member 2017–2019

Graduate Astronomy Student Association

UTGSU Representative 2017–2019

Co-President 2016–2017

Course Committee 2016–2017

Weekly Tea 2016–2017

Mediation Committee 2015–2017

Plant Watering 2015–2016

Department of Astronomy & Astrophysics

Department Values Statement Committee November 2017–February 2018

University of Toronto Intramurals

Ultimate Frisbee 2015–Present

Softball Summer 2017

Soccer Fall 2016

University of Toronto Swing Dance Club

Member September 2015–August 2016

Independent School District 197 School Board

Strategic Redesign Advisory Committee 2010–2011

SELECTED AWARDS

DAA International Graduate Student Fellowship 2019
3000 CAD

Ontario Graduate Scholarship 2019
15,000 CAD

DAA International Graduate Student Fellowship 2018
3000 CAD

Lachlan Gilchrist Fellowship 2017
4500 CAD

Centre for Planetary Sciences Graduate Fellowship 2015
5000 CAD/year; 2 years

Outstanding Technical Presentation Award 2014
Los Alamos National Laboratory

Hagstrum Award for Physics Research 2014
1000 USD