Adiv Paradise

Toronto, ON
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https://adivparadise.ca

EDUCATION

Two Rivers Senior High *June 2010*

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

University of Toronto *November 2021*
Ph.D. in Astronomy & Astrophysics
"Simulating Paradise: Exploring Habitable Exoplanet Climates with a Fast GCM"

RESEARCH GROUPS

Exoplanetary Climates & Habitability 2015–2021
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 – July 2021*

Camp Galil
Camp Counselor *June 2010 – July 2010*

Beth Jacob Congregation
Teaching Assistant *September 2006 – May 2010*

JOURNAL PUBLICATIONS

1. ***Paradise, Adiv***, *Kristen Menou, Christopher Lee, and Bo Lin Fan. Fundamental Challenges to Remote Sensing of Exo-Earths.* arXiv e-prints, *page arXiv:2106.00079, May 2021. (Under review)*
2. ***Paradise, Adiv***, *Evelyn Macdonald, Kristen Menou, Christopher Lee, and Bo Lin Fan. ExoPlaSim: Extending the Planet Simulator for Exoplanets.* arXiv e-prints, *page arXiv:2107.07685, July 2021. (Under review)*
3. ***Paradise, Adiv***, *Bo Lin Fan, Kristen Menou, and Christopher Lee. Climate diversity in the solar-like habitable zone due to varying background gas pressure.* Icarus, *358:114301, April 2021*

4. ***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*
5. ***Paradise, Adiv***, *Kristen Menou, Diana Valencia, and Christopher Lee. Habitable Snowballs: Temperate Land Conditions, Liquid Water, and Implications for CO 2 Weathering.* Journal of Geophysical Research: Planets, *124(8):2087–2100, aug 2019*
6. ***Paradise, Adiv*** *and Kristen Menou. GCM Simulations of Unstable Climates in the Habitable Zone.* The Astrophysical Journal, *848(1):33, 2017*
7. *Evelyn Macdonald,* ***Paradise, Adiv***, *Kristen Menou, and Christopher Lee. Climate uncertainties caused by unknown land distribution on habitable M-Earths.* arXiv e-prints, *page arXiv:2110.04310, October 2021. (Under review)*
8. *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*
9. *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 Tretyakov. CHIME FRB: An application of FFT beamforming for a radio telescope.* XXXIIth URSI General Assembly & Scientific Symposium (URSI GASS) 2017, *August 2017*
10. *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*
11. *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*
12. *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*
13. ***Paradise, Adiv***, *Bo Lin Fan, Evelyn Macdonald, Kristen Menou, and Christopher Lee. A Large Repository of 3D Climate Model Outputs for Community Analysis and Postprocessing.* arXiv e-prints, *page arXiv:2008.02339, August 2020*

SELECTED CONFERENCE PROCEEDINGS

1. ***Paradise, Adiv***, *E. Macdonald, K. Menou, C. Lee, and B. Fan. Enabling new science with the ExoPlaSim 3D climate model. In* Bulletin of the American Astronomical Society, *volume 53, page 1140, March 2021*
2. *E. Macdonald,* ***Paradise, A.***, *K. Menou, and C. Lee. Dayside land on tidally locked M-Earths. In* Bulletin of the American Astronomical Society, *volume 53, page 1022, March 2021*
3. ***Paradise, Adiv***, *Bo Lin Fan, Krisen Menou, and Christopher Lee. Blue Skies: The Role of pN2 in the Habitable Zone (Talk). 2019*
4. ***Paradise, Adiv***, *Kristen Menou, Diana Valencia, and Christopher Lee. Generalizing the Habitable Zone: Temperate Continental Regions on Some Snowball Planets (Talk). August 2018*
5. ***Paradise, A.*** *and K. Menou. The Habitability of Frozen Worlds. Emerging Researchers in Exoplanet Sciences III (Talk), June 2017*

6. ***Paradise, A.*** *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*
7. ***Paradise, Adiv****, Krisen Menou, Christopher Lee, and Bo Lin Fan. Low-Cost Inference of Terrestrial Climates With Broadband Photometry (Poster). August 2019*
8. ***Paradise, A.*** *and K. Menou. Stable weathering equilibria in snowball planets in the habitable zone. Emerging Researchers in Exoplanet Sciences II (Poster), June 2016*
9. ***Paradise, A.****, 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*
10. ***Paradise, A.****, 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

I have reviewed manuscripts for the Astrophysical Journal (ApJ), the Planetary Science Journal (PSJ), and the Journal of Geophysical Research: Atmospheres. I also served on a review panel for the 2021 NASA FINESST graduate fellowship selection.

In 2010–2011 I 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 *2016–2019*

University of Toronto Libraries "Science Literacy Week"
Human Book: 'What is an Astronomer?' *September 2017* *"Space Mythbusters" Panel – Panelist* *September 19, 2018* ***AAAS "Book Smart" Book Club: 'The Hunt for Vulcan' by Thomas Levinson***
Expert Facilitator for Book Discussion *2016*

EXTRA-CURRICULARS

NASA FINESST20 Exoplanets Graduate Fellowship Review Panel
Reviewer *April 2021*

University of Toronto Campus Philharmonic Orchestra
French Horn *2018–2020*

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 *2015–2020*
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 Fieldus Award *2020*
1000 CAD

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