

JANOSZ DEWBERRY

CURRICULUM VITAE

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SCIENTIFIC EMPLOYMENT

- 2020-Present **CITA Postdoctoral Fellow**, *Canadian Institute for Theoretical Astrophysics*
Toronto, Canada
Visiting Postdoc at Caltech (2021-22, hosted by Prof. Jim Fuller)
- 2019-2020 **TDLI Postdoctoral Fellow**, *Tsung-Dao Lee Institute*
Shanghai, China
Visiting Research Associate at Cornell (2019-20, hosted by Prof. Dong Lai)

EDUCATION

- 2015-2019 *PhD in Applied Math and Theoretical Physics*, **University of Cambridge**
Advisors: Dr. Henrik Latter, Prof. Gordon Ogilvie
Thesis: [Hydromagnetic Oscillations and Instabilities in Astrophysical Discs](#)
- 2014-2015 *MASt in Applied Math and Theoretical Physics*, **University of Cambridge**
(Part III of the Mathematical Tripos)
- 2009-2013 *BA in Astronomy (major), Mathematics (major), Physics (minor)*, **Vassar College**
Advisor: Prof. Debra Elmegreen
Graduated Sigma Xi, with honors in both Astronomy and Mathematics

AREAS OF INTEREST

I study the variability and dynamics of rapidly rotating and/or magnetized astrophysical flows. This focus has led me to work on topics ranging from black hole accretion, to Jupiter and Saturn, to rapidly spinning and tidally interacting stars, to exoplanet orbital evolution.

FELLOWSHIPS AND AWARDS

- 2023 **Contributing postdoctoral associate on selected NASA SSW proposal**
- 2021 **Contributing postdoc on successful application to SciNet/Niagara**
- 2020 **CITA Postdoctoral Fellowship**
- 2019 **Tsung-Dao Lee Postdoctoral Fellowship**
- 2019 **Cambridge Philosophical Society Studentship**
- 2017 **Smith-Knight & Rayleigh-Knight Prize** (Grade 2)
- 2015 **Cambridge International Scholarship** (full scholarship for PhD)
- 2013-2018 **Vassar College DeGolier Fellowships** (awarded five times)
- 2012 **Vassar College DeGolier Prize** (highest GPA in class)

TECHNICAL EXPERIENCE

- Programming languages:** Python, Fortran, C++, MATLAB, Mathematica
- Codes:** RAMSES, Dedalus, Athena++, MESA, GYRE, PETSc/SLEPc
- Numerical methods:** Spectral, pseudospectral, spectral element, finite differences, finite volume, iterative methods, Krylov subspace methods, MCMC

TEACHING & MENTORING

Guest Lecturer / Teaching Roles

03/2024	Guest lecturer, AST320 (UToronto)
02/2024	Guest lecturer, ASTR-112 (Amherst College)
01/2024	Blackboard seminar (“An introduction to tides in planets, stars, and compact objects”; CITA)
05/2023	Guest lecturer, CTA200H (UToronto)
02/2023	Blackboard seminar (“Sparse spectral methods for solving differential equations”; CITA)
08/2021	Blackboard seminar (“Pseudospectral methods for solving differential equations”; CITA)
2017-2018	Undergraduate supervisor, Part II Astrophysical Fluid Dynamics (supervised ~ 30 undergraduates via bi-weekly, 3-on-1 tutoring sessions; University of Cambridge)

Research mentorship roles

2023-present	Ben Pennell (undergraduate at UToronto)
2022-2023	Samantha C. Wu (PhD candidate at Caltech)
Summer 2023	Sidhant Suar (undergraduate at UToronto)
2021-2023	Kanah Smith (undergraduate at UToronto, now PhD candidate at ISTA)
2021-2023	Niharika Namulla (undergraduate at Trent Univ.)

ACADEMIC SERVICE & PROFESSIONAL EXPERIENCE

Academic & Committee Roles

Summer 2023	CITA Planet Day organizer , CITA Co-organized 1-day workshop on planets and exoplanets (~40 participants)
2020-2021	Seminar Committee Member , CITA Scheduled/organized/ran twice-weekly astrophysics seminars
2020-2021	Astro-Ph Committee Member , <i>Univ. of Toronto</i> Scheduled/organized/ran Astro-Ph coffee meetings
2018-2019	Welfare Officer , <i>Churchill College, Cambridge</i> Organized and ran weekly events to promote student welfare (coffee hours, yoga classes) Provided confidential guidance to graduate students
2016-2017	Academic Officer , <i>Churchill College, Cambridge</i> Scheduled/organized/ran weekly interdisciplinary talks (~ 10 – 30 attendees/week) Co-organized/ran annual interdisciplinary symposium (~ 50+ participants)
Summer 2011	Undergraduate Researcher , <i>Vassar College</i> Surveyed local, irregular and star-forming galaxies
2009-2010	Observatory Assistant , <i>Vassar College</i> Operated telescope, collected data for research courses

Outreach and Volunteering

2019, 2022	Volunteer , Astronomy on Tap Los Angeles
2022	Volunteer , Death Valley Dark Sky Festival
2019	Volunteer , Caltech Stargazing and Lecture Series
2017-2018	Volunteer tour guide , Univ. of Cambridge Department of Mathematics
2017-2018	Volunteer , University of Cambridge Open Day
2014-2020	Volunteer speaker , Oregon elementary and middle schools

REFEREED PUBLICATIONS

- 17 published or accepted, 1 submitted, 15 first or second author ([click here for ADS library](#))
18. Lainey, V., **Dewberry, J. W.**, Fuller, J., Cooper, N., Rambaux, N., & Zhang, Q. 2024, A&A Letters (accepted)
"Tidal frequency dependence of the Saturnian Love number k_2 "
 17. Zanazzi, J. J., **Dewberry, J. W.**, & Chiang, E. 2024, ApJL (submitted)
"Damping Obliquities of Hot Jupiter Hosts by Resonance Locking"
 16. **Dewberry, J. W.** 2024, ApJ (accepted)
"Tidal synchronization trapping in stars and planets with convective envelopes"
 15. Wu, S. C., **Dewberry, J. W.** & Fuller, J. 2024, ApJ (accepted)
"Tidal migration of exoplanets around M-dwarfs: frequency-dependent tidal dissipation"
 14. Bollimpalli, D. A., Fragile, P. C., **Dewberry, J. W.**, & Kluźniak, W. 2023, MNRAS, 528, 1142
"Truncated, Tilted Discs as a Possible Source of Quasi-Periodic Oscillations"
 13. **Dewberry, J. W.** & Wu, S. C. 2023, MNRAS, 527, 2288
"On the damping of tidally driven oscillations"
 12. Lynch, E. M., & **Dewberry, J. W.** 2023, MNRAS, 526, 2673
"Linear and nonlinear eccentric mode evolution in unstratified MHD discs"
 11. Mankovich, C. R., **Dewberry, J. W.**, & Fuller, J. 2023, PSJ, 4, 59
"Saturn's Seismic Rotation Revisited"
 10. **Dewberry, J. W.** 2023, MNRAS, 521, 5991
"Dynamical tides in Jupiter and other rotationally flattened planets and stars with stable stratification"
 9. **Dewberry, J. W.**, Mankovich, C. R., & Fuller, J. 2022, MNRAS, 516, 358
"Impacts of zonal winds on planetary oscillations and Saturn ring seismology"
 8. **Dewberry, J. W.**, & Lai, D. 2022, ApJ, 925, 124
"Dynamical tidal Love numbers of rapidly rotating planets and stars"
 7. **Dewberry, J. W.**, Mankovich, C. R., Fuller, J., Lai, D., & Xu, W. 2021, PSJ, 2, 198
"Constraining Saturn's interior with ring seismology: effects of differential rotation and stable stratification"
 6. **Dewberry, J. W.**, Latter, H. N., Ogilvie, G. I., & Fromang, S. 2020, MNRAS, 497, 451
"HFQPOs and discoseismic mode excitation in eccentric, relativistic discs. II. Magnetohydrodynamic simulations"
 5. **Dewberry, J. W.**, Latter, H. N., Ogilvie, G. I., & Fromang, S. 2020, MNRAS, 497, 435
"HFQPOs and discoseismic mode excitation in eccentric, relativistic discs. I. Hydrodynamic simulations"
 4. **Dewberry, J. W.**, Latter, H. N., & Ogilvie, G. I. 2019, MNRAS, 483, 1609 *"Quasi-periodic oscillations, trapped inertial waves and strong toroidal magnetic fields in relativistic accretion discs"*
 3. **Dewberry, J. W.**, Latter, H. N., & Ogilvie, G. I. 2018, MNRAS, 476, 4085
"Quasi-periodic oscillations and the global modes of relativistic, MHD accretion discs"
 2. Elmegreen, B., Elmegreen, D., Almeida, J., Muñoz-Tuñón, C., **Dewberry, J. W.**, Putko, J., Teich, Y., & Popinchalk, M. 2013, ApJ, 774, 86 *"Massive clumps in local galaxies: Comparisons with high-redshift clumps"*
 1. Elmegreen, D., Elmegreen, B., Almeida, J., Muñoz-Tuñón, C., Putko, J., & **Dewberry, J. W.** 2012, ApJ, 750,95 *"Local tadpole galaxies"*

SCIENTIFIC COMMUNICATION

Conference Presentations

- 10/2023 CITA+PI Gravitational Workshop, **Perimeter Institute**
- 09/2023 Applied Inverse Problems 2023, MS38 (Inverse Eigenvalue Problems in Astrophysics), **University of Göttingen** (invited minisymposium talk)
- 07/2023 [TASC7/KASC14](#), **University of Hawaii**
- 05/2023 54th Meeting of the Division on Dynamical Astronomy, **MSU**
- 04/2023 [SDSS-5/IReNA Science Festival](#), **KU Leuven**
- 08/2022 Stars, to mark the 80th birthday of Peter Eggleton, **University of Cambridge**
- 08/2022 CITA 2022 Planet Day, **CITA**
- 04/2022 53rd Meeting of the Division on Dynamical Astronomy **CCA**
- 03/2022 Caltech Center for Comparative Planetary Evolution Meeting, **Caltech**
- 12/2021 American Geophysical Union 2021 Fall Meeting, **New Orleans/virtual**
- 12/2021 New paradigms for Radiatively Efficient Accretion Disks, **CCA**
- 10/2021 53rd Meeting of the Division of Planetary Sciences, **Virtual**
- 06/2021 Canada 2021 Planet Day, **University of Victoria/virtual**
- 05/2021 Distorted Astrophysical Discs Conference, **University of Cambridge/virtual**
- 10/2020 Accretion 2020: Disk Reflection, Warm Corona, Sims, **Fudan University/virtual**
- 01/2019 AAS Meeting 233, **Seattle, WA** (dissertation talk)
- 07/2018 A Golden Age for Particle and Gas Dynamics, **University of Oxford**

Colloquia & Seminars

- 02/2024 FCAD Colloquium, **University of Massachusetts, Amherst**
- 05/2023 CIERA Special Seminar, **Northwestern University**
- 04/2023 Astrophysics Seminar, **Royal Observatory of Belgium**
- 03/2023 KIPAC Tea, **Stanford University**
- 03/2023 National Institute of Physics Seminar, **University of the Philippines**
- 11/2022 TASTY Seminar, **University of Toronto**
- 10/2022 Carnegie Tea, **Carnegie Observatories**
- 07/2022 Princeton Coffee, **Princeton University**
- 06/2022 [Institute of Astronomy Seminar](#), **KU Leuven**
- 04/2022 CIERA Science Happy Hour, **Northwestern University**
- 04/2022 Math/Data Science Colloquium, **Pacific University**
- 03/2022 Center for Integrative Planetary Science (CIPS) Seminar, **UC Berkeley**
- 11/2020 [Astrophysics Seminar](#), **CITA**
- 06/2020 Department of Astronomy Colloquium, **Shanghai Jiao Tong University**
- 11/2019 Astrophysics Lunch, **Cornell University**
- 10/2018 Astrophysics Lunch, **UC Santa Barbara**
- 10/2018 Geophysical & Astrophysical Fluid Dynamics Seminar, **UC Santa Cruz**
- 10/2018 Theoretical Astrophysics and Relativity (TAPIR) Seminar, **Caltech**

07/2018 IoA X-ray Astronomy Group Seminar, **University of Cambridge**

Posters

07/2022 TASC6/KASC13 Asteroseismology Workshop, **KU Leuven/virtual**

06/2022 Workshop on Juno Prime Mission Results, **Caltech**

07/2016 Sims. & Modelling of Relativistic MHD Accretion Discs, **University of Oxford**

07/2016 Astro Fluid 2016, **IAP**

Outreach Talks

06/2022 [Caltech Stargazing and Lecture Series](#), **Caltech** (speaker)

09/2019 [Caltech Stargazing and Lecture Series](#), **Caltech** (panel participant)

04/2018 Churchill College CHUTalk Seminar Series, **University of Cambridge**

11/2016 Cambridge Department of Mathematics Open Day, **University of Cambridge**