Evan H. **Anders**

Graduate Student — Astrophysical and Planetary Sciences

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Education

University of Colorado – Boulder (CU Boulder) — *Boulder, CO*

PH.D in Astrophysical and Planetary Sciences · Expected May 2020

M.S. In Astrophysical and Planetary Sciences · December 2016 — *Aug. 2014 - Present*

Whitworth University — *Spokane, WA*

B.S. In Physics; Minors in Computer Science & Math · Cumulative gpa 4.0/4.0 — *Aug. 2010 - May 2014*

Research Experience

CU Boulder & Laboratory for Atmospheric and Space Physics (LASP) — *Boulder, CO*

Graduate Research Assistant — *May 2015 - Present*

- Working to understand the fundamental heat transport properties of stratified convection.
- Performing large-scale numerical simulations on NASA Pleiades.

Laser Interferometer Gravitational-Wave Observatory (LIGO) — *Hanford, WA*

NSF SURF Fellow — *Summer 2013*

- Developed a tool in Python to analyze calibration lines in LIGO's power spectrum.
- Analyzed the consistency between input and output channels in LIGO's photon calibration system.

Pacific Northwest National Laboratory (PNNL) — *Richland, WA*

DOE SULI Intern — *Summer 2012*

- Optimized functions in GAiN, a Python module which applies PNNL's Global Arrays parallel programming toolkit to the NumPy Python module.
- Designed new parallel algorithms for the GAiN 'reduce' function and developed the foundation of the GAiN 'master-slave' interface.

Relevant Publications

Anders, E.H.; Lecoanet, D.; and Brown, B.P. "Entropy Rain: Dilution and Compression of Thermals in Stratified Domains." Accepted to ApJ.

Anders, E.H. et al. "Predicting the Rossby Number in Convective experiments.". 2019. The Astrophysical Journal 872, 2.

Anders, E.H.; Brown, B.P; and Oishi, J. S. "Accelerated evolution of convective simulations.". 2018. Phys. Rev. Fluids 3, 083502.

Anders, E.H. and Brown, B.P. "Convective heat transport in startified atmospheres...". 2017. Phys. Rev. Fluids 2, 083501.

Conference Talks & Posters

Foreign Conferences

Compressible Convection Conference 2019, 25-minute talk. "Entropy Rain...". — *Newcastle, UK*
Stellar Hydro Days V, Speed talk & Poster. "Accelerating the evolution...". — *Exeter, UK*
Compressible Convection Conference 2017, 25-minute talk. "Convective heat transport...". — *Lyon, France*

Domestic Conferences

APS Division of Fluid Dynamics 2019, 10-minute talk. "Dilution and Compression of Thermals...". — *Seattle, Washington*
American Astronomical Society's 233rd Meeting, Poster. "Accelerating the evolution...". — *Seattle, Washington*
APS Division of Fluid Dynamics 2018, 10-minute talk. "Predicting the Rossby number...". — *Atlanta, Georgia*
APS Division of Fluid Dynamics 2017, 10-minute talk. "The effects of Mach number...". — *Denver, Colorado*
APS Division of Fluid Dynamics 2016, 10-minute talk. "Sustained shear flows...". — *Portland, Oregon*
AAS Solar Physics Division 2016, Poster. "The structure and evolution of boundary layers...". — *Boulder, Colorado*

Awards & Honors

2018-	**NASA Earth And Space Science Fellowship – Heliophysics**, providing full research funding	*NASA*
2015-18	**George Ellery Hale Graduate Fellowship**, providing funding for three years of graduate research	*CU Boulder / NSO*
2016	**High Pass**, for defense of publication-ready research on CU APS Comprehensive Exam II	*CU Boulder*
2016	**Carl Hansen Graduate Fellowship**, awarded to a graduate student studying stellar interiors	*CU Boulder*
2014	**President's Award for Outstanding Academic Achievement**, for graduating with a 4.0 GPA	*Whitworth U.*
2013	**Johnston-Hansen Foundation Scholarship**, awarded to a Physics student	*Whitworth U.*
2012	**Carl Hansen Pre-Engineering Scholarship**, awarded to an Engineering student	*Whitworth U.*
2012	**Math / Comp. Sci. Departmental Scholarship**, awarded to a student in the Math / Comp. Sci. department	*Whitworth U.*
2011	**Carl Hansen Pre-Engneering Scholarship**, awarded to an Engineering student	*Whitworth U.*
2010	**Mind & Heart Scholarship**, awarded to an entering undergraduate to assist with four years of tuition	*Whitworth U.*

Departmental Service

2018-19	**Member**, Graduate admissions committee	*CU Boulder*
2018	**Graduate Student Member**, Exam committee for CU APS Comprehensive Exam 1	*CU Boulder*
2017-18	**Member**, Graduate admissions committee	*CU Boulder*
2016-17	**Member**, Hiring committee for director of Fiske Planetarium	*CU Boulder*
2016	**Graduate Student Member**, Exam committee for CU APS Comprehensive Exam 1	*CU Boulder*
2016	**Chair**, Graduate student committee for NSO/CU faculty appointment	*CU Boulder*
2015	**Member**, Graduate student committee for three-year NSO/CU appointment	*CU Boulder*

Teaching Experience

CU Boulder — *Boulder, CO*

Graduate Part-Time Instructor for ASTR 2600 — *Summer 2017*

- Co-instructor of record for an introductory course in Python programming
- Developed curriculum including lectures, tutorials, homework, and the final exam.

Graduate Teaching Assistant for ASTR 1010 — *August 2014 - December 2015, Fall 2017*

- Delivered mini-lectures to familiarize students with lab material.
- Held office hours and helped staff the Astronomy Help Room (AHR).

Lead Graduate Teacher — *August 2016-May 2017*

- Led video consultations with Graduate Teaching Assistants
- Coordinated and ran orientation for new Teaching Assistants in the department.

Whitworth University — *Spokane, WA*

Computational Physics Teaching Assistant — *January 2014*

- Guided students in designing computational models of physical phenomena.
- Assisted students in translating mathematical operations into numerical algorithms.

Physics Tutor — *Fall 2012 - May 2014*

- Reviewed basic concepts with students to help improve problem-solving skills.
- Provided supplemental instruction to clarify course material for students.

Physics Lab Teaching Assistant — *August 2011 - May 2012*

- Instructed students through the completion of laboratory activites.

Outreach

(CU STARs) CU Boulder Science, Technology, and Astronomy RecruitS — *Boulder, CO*

Graduate Coordinator — *August 2016-May 2019*

- Guided undergraduate students in designing hands-on high school-level lessons to teach basic concepts in astronomy and astrophysics.
- Ensured middle/high school visits across Colorado ran smoothly.