

Evan H. Anders

NASA EARTH AND SPACE SCIENCE GRADUATE RESEARCH FELLOW

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| 🌐 evanhanders | 🎓 Evan H. Anders

Education

University of Colorado – Boulder (CU Boulder)

Boulder, CO

PH.D IN ASTROPHYSICAL AND PLANETARY SCIENCES · EXPECTED MAY 2020

Aug. 2014 - Present

M.S. IN ASTROPHYSICAL AND PLANETARY SCIENCES · DECEMBER 2016

Whitworth University

Spokane, WA

B.S. IN PHYSICS; MINORS IN COMPUTER SCIENCE & MATH

Aug. 2010 - May 2014

Cumulative gpa 4.0/4.0

Research Experience

CU Boulder & Laboratory for Atmospheric and Space Physics (LASP)

Boulder, CO

GRADUATE RESEARCH FELLOW / ASSISTANT

May 2015 - Present

- Published four first-author papers in the Astrophysical Journal and Physical Review Fluids
- Became proficient in creating and analyzing simulations using the Dedalus pseudospectral framework.

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

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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.

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 stratified atmospheres...". 2017. Phys. Rev. Fluids 2, 083501.

<The other paper>

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-Engineering 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.

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

Departmental Service

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

Professional Development and Teaching Experience

UCSC ISEE Professional Development Program

Monterey, CA

DESIGN TEAM LEADER & PARTICIPANT

2017 & 2019

- Developed two day-long inquiry activities which taught incoming college freshmen about exoplanet transits (2017) and buoyancy (2019).
- Approached course design in a backwards-design framework with special attention to equity & inclusion and meaningful assessments.
- Led a team of three fellow graduate students through a roughly 100-hour, 4-month design process.

CU Boulder

Boulder, CO

GRADUATE PART-TIME INSTRUCTOR FOR ASTR 2600

Summer 2017

- Instructor of record (co-instructed with Jhett Bordwell) for an introductory course on Python programming in astrophysics.
- Developed half of a new course 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

PHYSICS TUTOR

Fall 2012 - May 2014

PHYSICS LAB TEACHING ASSISTANT

August 2011 - May 2012

Public 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 lessons to teach high schoolers basic concepts in astronomy and astrophysics.
- Assisted in coordination and execution of outreach trips to underserved middle and high schools across Colorado.

CU Boulder Department of Astrophysical and Planetary Sciences

Boulder, CO

SOMMERS-BAUSCH OBSERVATORY OPEN HOUSE HOST

Fall 2014 - Spring 2017

- Operated telescopes and interfaced with the public during free observing nights once or twice per semester.