Evan H. Anders

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Research Interests

Applications of computational fluid dynamics to studies of stellar convection which include stratification, rotation, and magnetism.

Education

May 2020* **Ph.D.**, *University of Colorado – Boulder*, Astrophysical & Planetary Sciences.
*Expected Graduation Date; Thesis title TBD

Dec. 2017 **M.S.**, *University of Colorado – Boulder*, Astrophysical & Planetary Sciences.

May 2014 **B.S.**, *Whitworth University*, Physics.

Research Experience

2015-present **Graduate Research Fellow/Assistant**, *University of Colorado – Boulder & Laboratory for Atmospheric and Space Physics*, Boulder, CO.

2013 **NSF Summer Undergraduate Research Fellow**, *LIGO*, Hanford, WA.

2012 **DOE Summer Undergraduate Laboratory Intern**, *PNNL*, Richland, WA.

Grants & Fellowships Awarded

2018-2020 **NASA Earth and Space Science Fellowship**, *$90,000*, Boulder, CO.
Fundamental Studies Into the Solar Convective Conundrum: Do Giant Cells Exist?
Grant Number 80NSSC18K1199

2015-2018 **NSO George Ellery Hale Graduate Fellowship**, Boulder, CO.
Fellowship covers tuition, fees, and graduate research stipend for three full years.
Fellowship overview available online at https://www.nso.edu/students/hale-fellowships/

Invited Presentations

2019 2. *Title TBD*
Princeton University, Star Formation/ISM Rendezvous (SFIR) Seminar. Dec. 4.

1. *Entropy Rain: Dilution and Compression of Thermals in Stratified Domains*
University of Colorado – Boulder, Applied Math Geophysical and Astrophysical Fluid Dynamics (GAFD) Seminar. Oct. 1.

Recent Conferences

2019 **APS Division of Fluid Dynamics**, *Talk*, Seattle, WA.
Dilution and Compression of Thermals in Stratified Domains

Compressible Convection Conference, *Talk*, Newcastle Upon Tyne, UK.
Entropy Rain: Dilution and Compression of Turbulent Thermals in Stratified Domains

Stellar Hydro Days V, *Poster*, Exeter, UK.
Accelerating the evolution of atmospheric structure in convective simulations

American Astronomical Society's 233rd Meeting, *Poster*, Seattle, WA.
Accelerating the evolution of simulated convective atmospheres

Awards & Honors

2019 **AAS 233 Chambliss Graduate Student Poster Contest**, *Honorable Mention*, American Astronomical Society.

2016 **Comprehensive Exam II High Pass**, University of Colorado – Boulder.
Awarded for the defense of publication-quality research

2016 **Carl Hansen Graduate Fellowship**, *$1,000*, University of Colorado – Boulder.
Awarded to a graduate student studying stellar interiors

2014 **President's Award for Outstanding Academic Achievement**, Whitworth Univ..
Awarded to students graduating with 4.0 GPAs

Select Departmental Service

2019-2020 Member of newly-formed admissions setup committee

2017-2019 Voting member of graduate admissions committee, two years

2016-2017 Voting member of hiring committee for director of Fiske Planetarium

Select Professional Development and Teaching Experience

2019 **UCSC ISEE Professional Development Program**, *Design Team Leader*.
Led a team through a 4-month, 100-hour program that involved the design and teaching of a day-long inquiry activity on buoyancy.

2017 **Co-Instructor of Record**, *ASTR 2600: Introduction to Scientific Programming*, University of Colorado – Boulder, Boulder, CO.
Redesigned course from scratch, including lectures, homeworks, tutorials, and projects.

Select Outreach Experience

2016-2019 **CU STARs**, *Graduate Student Coordinator*, University of Colorado – Boulder.
CU STARs (CU Boulder Science, Technology, and Astronomy RecruitS) visits underserved schools across all of Colorado and gives high school students an opportunity to learn about and engage with space science. Graduate students serve as mentors to undergraduates, help design and improve outreach courses, and ensure outreach visits run smoothly.

Refereed Publications

2019 5. *Entropy Rain: Dilution and Compression of Thermals in Stratified Domains*
Anders, E.H.; Lecoanet, D.; and Brown, B.P., ApJ 884, 65.

4. *Predicting the Rossby Number in Convective experiments*
Anders, E.H.; Manduca, C.M.; Brown, B.P.; Oishi, J.S.; Vasil, G.M., ApJ 872, 2.

2018 3. *Accelerated evolution of convective simulations*
Anders, E.H.; Brown, B.P; and Oishi, J. S., Physical Review Fluids 3, 083502.

2017 2. *Convective heat transport in stratified atmospheres at low and high Mach number*
Anders, E.H. and Brown, B.P., Physical Review Fluids 2, 083501.

2016 1. *The Advanced LIGO photon calibrators*
Karki, S.; Tuyenbayev, D.; Kandhasamy, S.; Abbott, B.P.; Abbott, T.D.; **Anders, E.H.**; Berliner, J.; Betzwieser, J.; Cahillane, C.; Canete, L.; Conley, C.; Daveloza, H.P.; De Lillo, N.; Gleason, J.R.; Goetz, E.; Izumi, K.; Kissel, J.S.; Mendell, G.; Quetschke, V; Rodruck, M.; Sachdev, S.; Sadecki, T.; Schwinberg, P.B.; Sottile, A.; Wade, M.; Weinstein, A.J., West, M.; and Savage, R.L., Review of Scientific Instruments 87, 114503.
Contributions: Implemented Python spectral line monitoring tool used in calibration.