Evan H. Anders

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Research Interests

Applications of computational fluid dynamics to dynamics in stellar interiors. Convection and its behavior in highly stratified domains, particularly in the presence of rotation or magnetism.

Education

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

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/

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 University.
Awarded to students graduating with 4.0 GPAs

Publications

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

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.

Invited Talks

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

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

Conferences

2019 **Compressible Convection Conference**, *Talk*, Newcastle Upon Tyne, UK.
Entropy Rain: Dilution and Compression of Turbulent Thermals in Stratified Domains

APS Division of Fluid Dynamics, *Talk*, Seattle, WA.
Dilution and Compression of 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

2018 **APS Division of Fluid Dynamics**, *Talk*, Atlanta, GA.
Predicting the Rossby number in stratified, compressible convection

2017 **APS Division of Fluid Dynamics**, *Talk*, Denver, CO.
The effects of Mach number and rotation on heat transport in stratified convection

Compressible Convection Conference, *Talk*, Lyon, Fr.
Convective heat transport in stratified atmospheres at low and high Mach number

2016 **APS Division of Fluid Dynamics**, *Talk*, Portland, OR.
Sustained shear flows in stratified convection

AAS Solar Physics Division, *Poster*, Boulder, CO.
Boundary Layer Structure in Stratified Convection

Departmental Service

2018-2019 Voting member of graduate admissions committee

Graduate student member of exams committee

2017-2018 Voting member of graduate admissions committee

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

Graduate student member of search committee for tenure-track NSO/CU faculty appointment

2015-2016 Graduate student member of search committee for three-year NSO/CU faculty appointment

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.

2017 **UCSC ISEE Professional Development Program**, *Participant*.
Designed and taught a day-long inquiry activity on exoplanet transits.

2016-2017 **Lead Graduate Teacher**, *Astrophysical & Planetary Sciences Department*, University of Colorado – Boulder, Boulder, CO.
Led video consultations with graduate teaching assistants and acted as bridge between my department and the university-level Graduate Teacher Program.

2014-2017 **Graduate Teaching Assistant for ASTR 1010**, *Four semesters*, University of Colorado – Boulder, Boulder, CO.
Fulfilled laboratory and lecture TA roles

Outreach

2016-2019 **CU STARs**, *Graduate Student Coordinator*, University of Colorado – Boulder, Boulder, CO.

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.

2014-2017 **Sommers-Bausch Observatory Open House Host**, University of Colorado – Boulder, Boulder, CO.

Operated telescopes and answered questions from the public during free observing nights once or twice per semester.