

Emily Griffith (@)

NSF Fellow & Galactic Archaeologist

University of Colorado Boulder
Astrophysical & Planetary Sciences
Center for Astrophysics & Space Astronomy

www.emilyjgriffith.com

Emily.Griffith-1@colorado.edu

Positions

2022-Present **NSF Astronomy and Astrophysics Postdoctoral Fellow**
Host Institution: University of Colorado Boulder
Host: Jeremy Darling

Education

2017-2022 **The Ohio State University**, Columbus Ohio
Ph.D., Astronomy, June 2022
M.S., Astronomy, August 2019
Advisors: Jennifer Johnson and David Weinberg

2013-2017 **Grinnell College**, Grinnell Iowa
B.A. with Honors, Physics & Theatre, May 2017
Advisors: Eliza Kempton and Justin Thomas

Honors and Awards

2022 NSF Astronomy and Astrophysics Postdoctoral Fellowship, NSF
(Three-year, \$320,000)

2022 Graduate Associate Teaching Award, Ohio State University

2021 Physics Department Award for Exceptional Mentoring (Polaris),
Ohio State University

2021 Presidential Fellowship, Ohio State University (One-year, \$32,000)

2021 Graduate Associate Leadership Award, Ohio State University

2020 Ann S. Tuttle Citizenship Award, Ohio State University

2017 University Fellowship, Ohio State University

Publications

Summary: 14 total; 588 citations; 7 first author; 121 first-author citations; h-index: 10

14. Weinberg, David H.; **Griffith, Emily J.**; Johnson, James W.; Thompson, Todd A. "The Scale of Stellar Yields: Implications of the Measured Mean Iron Yield of Core Collapse Supernovae" 2023, Submitted ApJ, [arXiv2309.05719](https://arxiv.org/abs/2309.05719)
13. **Griffith, Emily J.**; Hogg, David W.; Dalcanton, Julianne J.; Hasselquist, Sten; Ratcliffe, Bridget; Ness, Melissa; Weinberg, David H. "KPM: A Flexible and Data-Driven K-Process Model for Nucleosynthesis" 2023, Submitted ApJ, [arXiv2307.05691](https://arxiv.org/abs/2307.05691)
12. Johnson, James W.; Weinberg, David H.; Vincenzo, Fiorenzo; Bird, Johnathan C.; **Griffith, Emily J.** "Empirical Constraints on Nucleosynthesis of Nitrogen" 2023, *MNRAS*, 520 782.

11. **Griffith, Emily J.**; Johnson, Jennifer A.; Weinberg, David H.; Ilyin, Ilya; Johnson, James W.; Rodriguez-Martinez, Romy; Strassmeier, Klaus G.; “Untangling the Sources of Abundance Dispersion in Low-Metallicity Stars” 2023, *ApJ*, **944**, 47.
10. Weinberg, David H.; Holtzman, Jon A.; Johnson, Jennifer A.; and 33 co-authors including **Griffith, Emily J.** “Chemical Cartography with APOGEE: Mapping Disk Populations with a Two-Process Model and Residual Abundances” 2022, *ApJ*, **260**, 32.
9. **Griffith, Emily J.**; Weinberg, David H.; Buder, Sven; Johnson, Jennifer A.; Johnson, James W.; Vincenzo, Fiorenzo; “*Residual Abundances in GALAH DR3: Implications for Nucleosynthesis and Identification of Unique Stellar Populations*” 2022, *ApJ*, **931**, 23.
8. Abdurro'uf, Accetta, K., Aerts, C., and 336 coauthors including **Griffith, Emily J.** “The Seventeenth Data Release of the Sloan Digital Sky Surveys: Complete Release of MaNGA, MaStar and APOGEE-2 Data” 2022, *ApJ*, **259**, 35.
7. Johnson, James W.; Weinberg, David H.; Vincenzo, Fiorenzo; Bird, Johnathan C.; Loebman, Sarah R.; Brooks, Alyson M.; Quinn, Thomas R.; Christensen, Charlotte R.; **Griffith, Emily J.** “Stellar Migration and Chemical Enrichment in the Milky Way Disc: A Hybrid Model” 2021, *MNRAS*, **508**, 4484.
6. Vincenzo, Fiorenzo; Thomson, Todd; Weinberg, David H.; **Griffith, Emily J.**; Johnson, James W.; Johnson, Jennifer A. “Nucleosynthesis Signatures of Neutrino-Driven Winds from Proto-Neutron Stars: A Perspective from Chemical Evolution Models” 2021, *MNRAS*, **508**, 3499.
5. **Griffith, Emily J.**; Sukhbold, Tuguldur; Weinberg, David H.; Johnson, Jennifer A.; Johnson, James W.; Vincenzo, Fiorenzo; “*The Impact of Black Hole Formation on Population Averaged Supernova Yields*” 2021, *ApJ*, **921**, 73.
4. Vincenzo, Fiorenzo; Weinberg, David H.; Monalbán, Josefina; Miglio, Andrea; Khan, Saniya; **Griffith, Emily J.**; Hasselquist, Sten; Johnson, James W.; Johnson, Jennifer A.; Nitschelm, Christian; Pinsonneault, Marc H. “CNO dredge-up in a sample of APOGEE/Kepler red giants: Tests of stellar models and Galactic evolutionary trends of N/O and C/N” 2021, [arXiv:2106.03912](https://arxiv.org/abs/2106.03912).
3. **Griffith, Emily**; Weinberg, David H.; Johnson, Jennifer A.; Hasselquist, Sten; Jönsson, Henrik; Nataf, David; Zasowski, Gail; “*The Nucleosynthetic Homogeneity between the Milky Way Disk and Bulge*” 2021, *ApJ*, **909**, 77.
2. **Griffith, Emily**; Johnson, Jennifer A.; Weinberg, David H.; “*Abundance Ratios in GALAH DR2 and their Implications for Nucleosynthesis*” 2019, *ApJ*, **886**, 84.
1. **Griffith, Emily**; Martini, Paul; and Conroy, Charlie.; “*A Comparison of Stellar and Gas-Phase Chemical Abundances in Dusty Early-Type Galaxies*” 2019, *MNRAS*, **484**, 562.

Mentorship

Undergraduate Research Mentorship

- 2023-present Polly Fraiser | New York University
- Research identifying mass transfer candidates
 - Co-advised by David Hogg

AMP-UP Mentorship Program

- 2023-present Alison Crisp | Louisiana State University
- Mentorship in applying to post-doctoral fellowship
- 2023-present Pinchen Fang | Penn State
- Mentorship in applying to graduate student fellowships

Polaris Undergraduate Near-Peer Mentorship Program

- 2019-2020 Madison Englerth | The Ohio State University
- Project on $[a/Fe]$ bimodality in the Milky Way disk
- 2018-2019 Spenser Shore | The Ohio State University

Teaching Experience

Instructor, Astronomy & Physics Departments, Ohio State

- 2021 Astronomy Data Analysis (GE & Non-Major)
- 2018-2021 Polaris Mentorship Course (Major)

Teaching Assistant, Astronomy Department, Ohio State

- 2020 Astronomy Data Analysis (GE & Non-Major)
- 2019 Methods of Astronomical Observation & Data Analysis (Major)
Planetarium TA
- 2018 From Planets to the Cosmos Lab (GE & Non-Major)
Cosmology: The History of the Universe (GE & Non-Major)

Teaching Assistant/Tutor, Physics Department, Grinnell College

- 2016 Mechanics Lab TA (Major)
Physics II TA (Major & Non-Major)
- 2015 Physics I TA (Major & Non-Major)
- 2014-2016 Physics I and II Tutor (Major & Non-Major)

Observing Programs

- 2021 **PI:** "Probing the Intrinsic Abundance Dispersion of Low Metallicity Stars in the Milky Way"
Large Binocular Telescope/PEPSI, 21 hours
- 2020 **PI:** "Probing the Intrinsic Abundance Dispersion of Low Metallicity Stars in the Milky Way - Pilot Study"
Large Binocular Telescope/PEPSI, 4.25 hours

Talks and Presentations

Invited Talks

- Oct 2023 University of Alabama Huntsville, Frontiers in Science Class
- April 2023 University of Wyoming, Physics & Astronomy Colloquium
- April 2023 KU Leuven, SDSS/IReNA Science Festival
- Oct. 2022 UC Berkley, Theoretical Astrophysics Center Seminar

Sept. 2022 University of Colorado Boulder, Lunch Seminar
 May 2022 Carnegie Observatories, Lunch Talk
 Nov. 2021 University of Notre Dame, Astronomy Seminar
 July 2021 GALAH Science Meeting
 Nov. 2019 Wooster College, Physics Colloquium

Contributed Talks & Posters

July 2023 SDSS-V Collaboration Meeting
 July 2023 SDSS-V Collaboration Meeting, COINS Plenary
 Jan. 2023 AAS Conference, Seattle Washington
 Jan. 2023 NSF AAPF Symposium
 Nov. 2022 SDSS-V Science Festival, COINS Plenary
 Sept. 2021 Ohio State CCAPP Seminar
 Aug. 2021 SDSS-IV/V Collaboration Meeting
 June 2020 SDSS-IV/V Collaboration Meeting
 Jan. 2017 AAS Conference, Grapevine Texas (Poster)

Service and Outreach

Major Contributions (>100 hours)

2022-present Committee On Inclusion in SDSS co-chair (SDSS-V)
 2018-2022 Polaris Leadership Member, Ohio State (~\$40k of yearly funding)
 2018-2022 Planetarium Presenter, Ohio State

Other Contributions

2023-present Access Network Core Organizer
 2023-present Friday Lunch Seminar Organizing Committee (CU Boulder)
 2023-present AMP UP Graduate Student Mentor
 2022-present COINS Member (SDSS-V)
 2022-present CU Prime Volunteer
 2022-2023 Eastwood Schools Astronomy Presenter
 2021-2022 Graduate Student Representative
 2021-2022 Ohio State Graduate Student Peer Mentor
 2019-2022 OSU Astronomy Graduate Admissions Visit Organizer
 2021 Guest on "Guess Who" for the Ohio State STEM Impact Collaborative
 2021 URSA Summer Program Volunteer
 2018-2020 Polaris Mentor
 2018-2019 Upper Arlington Library Summer Series Volunteer
 2018-2019 OSU Star Party Volunteer
 2017-2019 Friends of Astronomy and Astrophysics Lunch Volunteer
 2017-2019 Breakfast of Science Champions Volunteer/Organizer
 2019 APIRE Summer Camp Activity Leader
 2019 Wood County Library Summer Program Presenter
 2019 COSI City-Wide Star Party Volunteer
 2018 Young Scholars Program Physics Volunteer
 2018 Clippers Baseball Astronomy Night Volunteer

Observing Experience

March 2022 Large Binocular Telescope — 2 nights
June 2018 Large Binocular Telescope — 4 nights
Optical Photometry and Spectroscopy
April 2017 Grant Gale Observatory — 5 nights
Optical Photometry
July 2016 Wyoming Infrared Observatory (WIRO) — 19 nights
Optical and NIR Photometry

Other

2023 Completed Intent to Impact Course from Movement Consulting
2021 Contributing author to the Versatile Integrator for Chemical
Evolution (VICE)
2020 Dark Matter Planetarium Training
2020 Completed Erdős Institute Data Science Boot Camp (1st place)

