

Catherine Elena Fielder



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POSITIONS

AUG. 2022 – PRESENT **Postdoctoral Research Associate, Steward Observatory**
University of Arizona, Tucson, AZ, USA

EDUCATION

2014 – 2022 **Doctor of Philosophy in Physics**
Department of Physics and Astronomy
University of Pittsburgh

2014 – 2016 **Master of Science in Physics**
Department of Physics and Astronomy
University of Pittsburgh

2010 – 2014 **Bachelor of Science in Physics**
MAGNA CUM LAUDE, PHI BETA KAPPA, SIGMA PI SIGMA, DEANS LIST
Department of Physics
Texas Tech University

RESEARCH EXPERIENCE

Graduate Research Assistant; Adviser: Dr. Jeff Newman, Co-Adviser: Dr. Andrew Zentner 2015-2022
University of Pittsburgh, Dept. of Physics and Astronomy *Pittsburgh, PA*
Constructing and analyzing the first long-baseline SED of the Milky Way
Multi-wavelength Milky Way Analogues
Empirically driven K -correction techniques
Analyses of dark matter halo property correlations and halo density profiles

Post Baccalaureate Researcher; Adviser: Dr. Wesley Even Summer 2014
Los Alamos National Laboratory *Los Alamos, NM*
Modeling of unusual Type Ib and Ic Supernovae

Undergraduate Researcher; Adviser: Dr. Tom Maccarone 2012-2014
Texas Tech University *Lubbock, TX*
Searching for Low Mass X-ray binaries near the center of the Milky Way

SKILLS

CODING LANGUAGES	Python, IDL, L ^A T _E X, Mathematica
MACHINE LEARNING PACKAGES	scikit-learn, GPyTorch, PyTorch, GPflow, TensorFlow
SPOKEN LANGUAGES	English, Japanese (competent)
OBSERVING	Magellan Clay MegaCam, Las Campanas Observatory Magellan Clay IFUM, Las Campanas Observatory Kuiper 61", Steward Observatory Green Bank Telescope Observer Training Workshop, Fall 2017 WIYN 3.5m telescope, Kitt Peak National Observatory Observational Techniques course at TTU with 12" and 20" telescopes at the Preston Gott Observatory

AWARDS

- 2014 **Outstanding Research Talk**
Los Alamos National Lab
- 2014 **Mary E. Warga Predoctoral Fellowship**
University of Pittsburgh

TEACHING AND MENTORING EXPERIENCE

PROJECT MENTOR, PHD STUDENT	Lorena Mezini, Exploring subhalo effects on host halo properties
TEACHING ASSISTANT	Astro 087: Basics of Space Flight (University of Pittsburgh, fall 2014, spring 2015) Astro 088: Stonehenge to Hubble (University of Pittsburgh, spring 2018) Phys 0111: Introduction to Physics 2 (University of Pittsburgh, spring 2015)
TEACHING FELLOW	Astro 087 and Astro 088 (University of Pittsburgh, fall 2018)
GUEST LECTURE	AstroPGH Research Seminar “A Beginner’s Guide to Λ CDM” (University of Pittsburgh, July 1, 2020)

OUTREACH

- Speaker for Astronomy on Tap** (Fall 2018)
National project for bringing astronomy to the general public.
- High School Visit Lecture** (Oct. 2019)
Guest lecture on astrophysics research for the Avonworth High School visit to the Pitt Physics and Astronomy department.
- High School Class Lecture** (March 2020, March 2023)
Guest lecture on dark matter at Shadyside Academy.
- Society of Physics Students Research Lecture** (Sept. 2020)
Guest lecture on astrophysics research for the Pitt Society of Physics students.
- Society of Physics Students Student Mentor** (Fall 2020)
Through the Women and Minorities in Physics group I mentor undergraduate students with a research interest in astronomy.
- ACCElerate Festival** (April 8-10 2022)
At this outreach festival at the Smithsonian we presented a booth on making the largest map of the Universe with DESI.
- Steward Observatory Public Lecture Series** (Jan. 30 2023)
- Senior Citizen Public Lecture at St. Luke’s Home** (April 21 2023)

SERVICE

- AAS Chambliss Poster Judge** (AAS 243 Jan. 2024)

PRESENTATIONS

INVITED TALKS	Lunch Seminar, University of St Andrews - July 25, 2023 Survey Group Meeting, Fermilab - July 12, 2023 STScI/JHU Galaxies & AGN Seminar - April 11, 2023 Astronomy Seminar, The University of Surrey - Oct. 27, 2022 Hot Topics Seminar, The University of Toledo - Feb. 11, 2022 Physics and Astronomy Colloquium, The University of Utah - Jan. 20, 2022 Galaxies/ISM Group Talk, The Ohio State University - Oct. 6, 2020
CONTRIBUTED TALKS	MWAG X MaNGA SciCon 1 – November 29, 2021 SDSS-IV Collaboration Meeting – August 2021 Linking the Galactic and Extragalactic, University of Sydney – Dec. 2020 Lunch Talk Series, National Radio Astronomy Observatory/University of Virginia - Oct. 27, 2020 Morning Astro Tea, Sydney Institute for Astronomy/The University of Sydney - Oct. 26, 2020 Talk Series, International Centre for Radio Astronomy Research, Australia - Oct. 22, 2020 Galaxy Lunch, Yale University - Oct. 21, 2020 Astronomy Seminar, Vanderbilt University - Oct. 16, 2020

Astronomy Seminar, New Mexico State University - Oct. 5, 2020
SDSS-IV Collaboration Meeting – June 2020
Great Lakes Cosmology Workshop 12, Rochester Institute of Technology, Rochester USA – Aug. 2019
Great Lakes Cosmology Workshop 11, McMaster University, Hamilton, Ontario Canada – 2016

POSTER PRESENTATIONS Small Galaxies Cosmic Questions, Durham, United Kingdom – July 2019
Dark Matter 2018, Kingston, Ontario Canada – 2018

DEPARTMENTAL TALKS Steward Journal Club – Sept. 2022
Pitt Astro Student Seminar – March 2021, Sept. 2020, Dec. 2019, May 2019, Dec. 2018, Dec. 2017

COLLABORATIONS

SDSS-IV Milky Way as a Galaxy and Milky Way Analogs Working Groups
SDSS-IV MaNGA H_I Follow-up Team
DESI - Outreach Committee

PUBLICATIONS (6 FIRST AUTHOR, 7 CONTRIBUTING AUTHOR)

LEAD AUTHOR **Fielder, C. E.**; Jones, M. G.; Sand, D.; et al., 2024. Submitted to *The Astronomical Journal*
All Puffed Up: Tidal Heating as an Ultra Diffuse Galaxy Formation Pathway.

Fielder, C. E.; Jones, M. G.; Sand, D.; et al., 2023. *The Astrophysical Journal Letters*, 954(2), L39
The Disturbed and Globular-cluster-rich Ultradiffuse Galaxy UGC 9050-Dw1.

Fielder, C. E.; Andrews, B. H.; Newman, J. A.; et al., 2023. *Monthly Notices of the Royal Astronomical Society*, 525(1), 1023-1038
Empirically-driven multiwavelength K-corrections at low redshift.

Fielder, C. E.; Newman, J. A.; Andrews, B. H.; et al., 2021. *Monthly Notices of the Royal Astronomical Society* 508(3), 4459-4483.
Constraining the Milky Way's ultraviolet to infrared SED with Gaussian process regression.

Fielder, C. E.; Mao, Y.; Zentner, A. R.; Newman, J. A.; et al., 2020. *Monthly Notices of the Royal Astronomical Society*, 499(2), 2426-2444.
Illuminating dark matter halo density profiles without subhaloes.

Fielder, C. E.; Mao, Y.; Newman, J. A.; Zentner, A. R.; et al., 2019. *Monthly Notices of the Royal Astronomical Society*, 486(4), 4545-4568.
Predictably missing satellites: subhalo abundances in Milky Way-like haloes.

REFERENCES

Dr. David Sand	Dr. Gail Zasowski
POSITION Associate Professor	POSITION Assistant Professor
EMPLOYER Department of Astronomy & Steward Observatory University of Arizona	EMPLOYER Department of Physics and Astronomy University of Utah
EMAIL dsand@arizona.edu	EMAIL gail.zasowski@gmail.com
Dr. Jeffrey Newman	Dr. Yao-Yuan Mao
POSITION Professor	POSITION Assistant Professor
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EMAIL janewman@pitt.edu	EMAIL yymao.astro@gmail.com
Dr. Brett Andrews	Dr. Andrew Zentner
POSITION Research Assistant Professor	POSITION Professor
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