

Eileen C. Gonzales

51 Pegasi b Postdoctoral Fellow | Cornell University, 404 Space Sciences Building, Ithaca, NY 14853
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Education

08/2015–08/2020	PhD in Physics, CUNY Graduate Center, NY, Advisor: Dr. Jackie Faherty <i>Understanding Atmospheres Across the Stellar-Substellar Boundary</i> (M.A. 2019- Hunter College, MPhil 2019- Graduate Center)
08/2011–12/2014	M.S. Physics concentration in Astronomy, San Francisco State University, CA Advisor: Dr. Adrienne Cool, Thesis: <i>Commissioning the refurbished 30-inch Leuschner telescope and its capabilities to detect transiting exoplanets</i>
08/2006–05/2010	B.S. Astrophysics (Dual Major in German), Michigan State University, MI Advisor: Horace Smith, Senior Thesis: <i>RR Lyrae and the Blazhko Effect</i>

Related Work Experience

2020–present	51 Pegasi b Postdoctoral Fellow , Cornell University, Ithaca, NY
2019–2020	Non-Teaching Adjunct , Macaulay Honors College, New York, NY
2018–2019	Non-Teaching Adjunct , College of Staten Island, Staten Island, NY
2017–2019	Research Mentor , American Museum of Natural History, New York, NY
Fall 2017	Adjunct Lecturer , Hunter College, New York, NY
Spring 2016	Physics Tutor , Self Employed
Spring 2015	Lecturer , San Francisco State University, San Francisco, CA
2011–2014	Graduate Teaching Associate , San Francisco State University, San Francisco, CA
2013–2014	Telescope Workshop Instructor , San Francisco State University, San Francisco, CA
Sum. 2008	Intern , Institute for Experimental and Applied Physics, University of Kiel, Kiel, Germany

Honors and Awards

2021	ExoExplorer , NASA ExoExplorers Program
2020	51 Pegasi b Fellowship in Planetary Astronomy , Heising-Simons Foundation (Three-year, \$375,000 grant)
2019	Mina Rees Dissertation Fellowship in the Sciences , City University New York Graduate Center (Dissertation Year support, \$25,000)
2019	Ford Dissertation Fellowship Honorable Mention , Ford Foundation
2018	Beth Brown Memorial Award , National Society of Black Physicists 2018 Conference (Best oral presentation in astronomy: <i>Is TRAPPIST-1 a Unique M-dwarf Host Star</i>)
2018	Third Place Prize Graduate Student Poster Competition , Cool Stars 20
2018	Graduate Student Prize , Astronomical Society of New York
2018	Chambliss Honorable Mention , AAS 231 st Meeting (Poster: <i>Examining Cloud, Metallicity, and Gravity signatures in Brown Dwarfs</i>)
2017	NSF AGEP , National Science Foundation Supplemental Award (\$36,000/year salary support, renewed for a total of 3 years)
2017	LSSTC Data Science Fellow , Large Synoptic Survey Telescope Corporation Two-year program of 6 week-long intensive data science workshops
2016	NIGMS RISE Fellowship , National Institute of Health (\$30,000/year salary, \$1,500/year travel funds, \$1,500/year research allowance, full tuition)
2015	CUNY Science Scholar , City University of New York Graduate Center (AY 2015-2016: \$25,000 stipend and tuition, AY16-17, AY 17-18, AY 18-19, AY19-20: tuition)

2014 **Honorable Mention**, College of Science and Engineering Showcase San Francisco State Uni.
(Poster: *Calibration and first images from the refurbished Leuschner 30-inch Telescope*)

Refereed Publications

1. Burningham, B., Faherty, J. K., **Gonzales, E. C.**, Marley, M., Visscher, C., Lupu, R., Gaarn, J., Bieger, M.F., Freedman, R., & Saumon, D. *Cloud Busting: enstatite and quartz clouds in the atmosphere of 2M2224-0158*, submitted to MNRAS
2. Cubillos, P. E.; Keating, D.; Cowan, N. B.; Vos, J. M.; Burningham, B.; Ygouf, M.; Karalidi, T.; Zhou, Y.; **Gonzales, E. C.** *Longitudinally Resolved Spectral Retrieval (ReSpec) of WASP43b*, submitted to ApJ.
3. Kirkpatrick, J.D., Gelino, C.R., Faherty, J.K., (several authors), **Gonzales, E.C.** et al., *The Field Substellar Mass Function Based on the Full-sky 20 pc Census of 525 L, T, and Y Dwarfs*, ApJS, 2021, 253, 7
4. **Gonzales, E.C.**, Burningham, B., Faherty, J. K., Cleary, C., Visscher, C., Marley, M., Lupu, R., & Freedman, R. *Retrieval of the d/sdL7+T7.5p binary SDSS J14162408+1348263AB*, ApJ, 2020, 905, 46. [arXiv:2010.01224](https://arxiv.org/abs/2010.01224)
5. Faherty, J.K., Goodman, S., Caselden, D., Colin, G., Kuchner, M. J., Meisner, A. M., Gagné, J., Schneider, A. C., **Gonzales, E. C.**, Bardalez Gagliuffi, D., Logsdon, S. E., Allers, K., Burgasser, A.J., & The Backyard Worlds: Planet 9 Collaboration, *WISE2150-7250AB: A very low mass, wide co-moving brown dwarf system discovered through the citizen science project Backyard Worlds: Planet 9*. ApJ, 2020, 889, 176. [arXiv:1911.04600](https://arxiv.org/abs/1911.04600)
6. **Gonzales, E.C.**, Faherty, J. K., Gagné, J., Teske, J., McWilliam, A., & Cruz, K. L. *A Reanalysis of the Fundamental Parameters and Age of TRAPPIST-1*. ApJ, 2019, 886, 131. [arXiv:1909.13859](https://arxiv.org/abs/1909.13859)
7. **Gonzales, E.C.**, Faherty, J. K., Gagné, J., Artigau, É., & Bardalez Gagliuffi, D. *Understanding Fundamental Properties and Atmospheric features of subdwarfs via a case study of SDSS J125637.13-022452.4*. ApJ, 2018, 864, 100. [arXiv:1807.04794](https://arxiv.org/abs/1807.04794)
8. Faherty, J.K., Gagné, J., Burgasser, A.J., Mamajek, E.E., **Gonzales, E.C.**, Bardalez Gagliuffi, D. C., & Marocco, F. *A Late-type L Dwarf at 11 pc Hiding in the Galactic Plane Characterized Using Gaia DR2*. ApJ, 2018, 868, 44. [arXiv:1805.01573](https://arxiv.org/abs/1805.01573)

Non-refereed Publications

9. **Gonzales, E.C.**, Burningham, B., Faherty, J. K., Visscher, C., Marley, M., Lupu, R., & Freedman, R. *The first retrieval of a substellar subdwarf: A cloud-free SDSS J1256-0224*, In prep.
10. Gagné, J., **Gonzales, E.C.**, & Faherty, J.K. *A Gaia DR2 Confirmation that 2MASS J12074836-3900043 is a Member of the TW HYA Association*. RN AAS, 2018, 2, 2. [arXiv:1804.09625](https://arxiv.org/abs/1804.09625)

Invited Talks, Seminars, and Panels

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| Apr. 2021 | <i>A Deep Dive into Exploring Substellar Atmospheres</i> , University of Washington, Astronomy Colloquium, Virtual. |
| Apr. 2021 | Speaker on Coll-G 133-STEM Careers Panel, Group Scholars Program, Indianan University Bloomington, Virtual |
| Mar. 2021 | <i>Understanding Atmospheres Across the Stellar-Substellar Boundary</i> , Howard University, Beth Brown Award Physics Colloquium, Virtual |
| Mar. 2021 | <i>Understanding Atmospheres Across the Stellar-Substellar Boundary</i> , Rochester Institute of Technology, Astronomy Colloquium, Virtual |
| Feb. 2021 | <i>Understanding Atmospheres Across the Stellar-Substellar Boundary</i> , University of Delaware Department of Physics and Astronomy Seminar, Virtual |

Dec. 2020	<i>Understanding Atmospheres Across the Stellar-Substellar Boundary</i> , JILA/ University of Colorado Boulder Astrophysics Seminar, Virtual
Nov. 2020	<i>Understanding Atmospheres Across the Stellar-Substellar Boundary</i> , Cornell Planetary Lunch Seminar, Ithaca, NY
Oct. 2020	Speaker on the <i>How to Organize a Movement</i> Panel, Yale, Virtual panel
Aug 2020	Speaker on the <i>Women+ of Color Project 2019 Reunion: The Path to Graduate School</i> Panel, Virtual panel
Feb. 2020	<i>Understanding Atmospheres Across the Stellar-Substellar Boundary</i> , Center for Space & Habitability (CSH) Symposium, University of Bern, Bern Switzerland
Jan. 2019	<i>A Reanalysis of the Age of TRAPPIST-1</i> , Beth Brown Memorial Prize talk , AAS 233, Seattle, WA
Dec. 2018	<i>Is TRAPPIST-1 A Unique M-dwarf Host Star?</i> , Queensborough Community College Physics department Seminar, New York, NY
Nov. 2018	Speaker on Women and Gender Minorities Panel Session at National Society of Black Physicists 2018 Conference, Columbus, OH
July 2018	<i>Understanding Atmospheres of Subdwarfs via SDSS J1256-0224</i> , Graduate Student Prize Talk , Astronomical Society of New York 50th Meeting, New York, NY
Feb. 2017	<i>Understanding Atmospheres of Subdwarfs via a case study of SDSS J1256-0224</i> , Harvard CfA Planets and Stars Seminar, Cambridge, MA
Nov. 2017	<i>Understanding Atmospheres of Low-mass Stars, Brown Dwarfs, and Giant Exoplanets</i> , SACNAS, Salt Lake City, UT

Contributed Talks and Posters

Jan. 2021	Talk: <i>Insights Discovered From Comparative Retrievals of Substellar Objects</i> , AAS 237, id. 314.04, Virtual
Jan. 2021	Poster: <i>The Atmospheric Retrieval of the Brown Dwarf Gl229B</i> , co-author, AAS 237, id. 339.10, Virtual
Aug. 2020	Talk: <i>Brewster Retrievals: From Brown Dwarfs and Directly-Imaged Exoplanets</i> , 51 Pegasi b Virtual Summit 2020
Jan. 2020	Talk: <i>Understanding Atmospheres Across the Stellar-Substellar Boundary</i> , Dissertation Talk, AAS 235, Honolulu, HI
Nov. 2019	Talk: <i>Spectral Retrieval of the binary 2MASS J1416+1348AB</i> , National Society of Black Physicists 2019, Providence, RI
Oct. 2019	Talk: <i>Atmospheric Retrieval of the d/sdL7+T7.5p binary 2MASS J1416+1348AB</i> , BDEXOCON III, Newark, DE
Sept. 2019	Talk: <i>Atmospheric Retrieval of the d/sdL7+T7.5p binary 2MASS J1416+1348AB</i> , Center for Computational Astrophysics GothamFest, New York, NY
June 2019	Talk: <i>A Reanalysis of the Age of TRAPPIST-1</i> , TRAPPIST-1 Toward the comparative study of temperate terrestrial worlds- Liège, Belgium
Jan. 2019	Poster: <i>Is TRAPPIST-1 a Unique M-dwarf Host Star?</i> , AAS 233, id#259.01, Seattle, WA
Nov. 2018	Talk: <i>Is TRAPPIST-1 a Unique M-dwarf Host Star?</i> , National Society of Black Physicists 2018, Columbus, OH
July 2018	Poster: <i>Is TRAPPIST-1 a Unique M-dwarf Host Star?</i> , Cool Stars 20, Poster #111, Cambridge, MA, DOI: 10.5281/zenodo.1420451
July 2018	Poster: <i>The BDNYS Database of low-mass stars, brown dwarfs, and planetary mass companions</i> , co-author, Cool Stars 20, Cambridge, MA, DOI: 10.5281/zenodo.1478145

Jan. 2018	Poster: <i>Examining Cloud, Metallicity, and Gravity signatures in Brown Dwarfs</i> , AAS 231 id.#347.37, National Harbor, MD
Jan. 2018	Poster: <i>The BDNYC Database of low-mass stars, brown dwarfs, and planetary mass companions</i> , co-author, AAS 231, id.#349.33, National Harbor, MD
Nov. 2017 Oct. 2017	Talk: <i>Understanding Atmospheres of Low-mass Stars, Brown Dwarfs, and Giant Exoplanets</i> , National Society of Black Physicists 2017, Moorehouse College, Atlanta, GA (Nov) and BDEXOCON II, University of Delaware, Newark, DE (Oct)
Sept. 2017	Talk: <i>Understanding Atmospheres of Low-mass Stars, Brown Dwarfs, and Giant Exoplanets</i> , Astrofest, Columbia University, New York, NY
June 2017	Poster: <i>Examining Cloud, Metallicity, and Gravity signatures in Brown Dwarfs</i> , Women in Astronomy IV, Austin TX and ERES III, Yale University, New Haven, CT
Oct. 2016	Poster: <i>Examining gravity, clouds and metallicity signatures in young and old brown dwarfs</i> , National Society of Black Physicists Fall Workshop, Femi Lab
Feb. 2015 Jan. 2015	Poster: <i>Testing the refurbished Leuschner 30-inch Telescope and its capabilities to detect transiting exoplanets</i> , AAS 225, id.#258.04, Seattle, WA (Jan) and National Society of Black Physicists 2015, Baltimore, MD (Feb)
May 2014 Apr. 2014	Poster: <i>Testing the refurbished Leuschner 30-inch Telescope and its ability to detect planets around other stars</i> , San Francisco State University College of Science and Engineering (COSE) Project Showcase (May) and San Francisco State University Graduate Research and Creative Works Showcase (April), San Francisco, CA
May 2014	Poster: <i>Calibration and first images from the refurbished Leuschner 30-inch Telescope</i> , co-author, COSE Showcase, San Francisco State University, San Francisco, CA
Dec. 2008	Poster: <i>TNS - A compact, light-weight sensor for thermal neutrons</i> , co-author, AGU Fall 2008 Meeting, id.#P53C-1458

Grants and Telescope Proposals

2021	JWST Cycle 1- Direct Imaging Spectroscopy of two Jovian Exoplanets: <i>Characterization of the TYC 8998-760-1 Multi-Planetary System</i> , 5.2 Hours, Co-I
2021	JWST Cycle 1- Explaining the Diversity of Cold Worlds , 24.6 Hours, Co-I
2020	51 Pegasi b Fellowship- Heising-Simons Foundation three-year, \$375,000 grant
2019	Amie James Science Travel Award- \$1000 to support presentation at Cloud Academy II
2019	Physics Tithe Fellowship- \$509 AY 2019–2020 support at CUNY Graduate Center
2019	Mina Rees Dissertation Fellowship in the Sciences- Dissertation Year support, \$25,000
2019	Cool Stars Travel Grant- Covered registration (\$500) for Cool stars 20 conference
2019	Doctoral Student Research Grant Round 13- \$900 to attend Cool Stars 20 Conference
2017–2019	NSF AGEP- \$36,000/year salary support, supplemental award to PI:Emily Rice’s NSF
2018	Physics Tithe Fellowship- \$374 AY 2018–2019 support at CUNY Graduate Center
2018	Sigma Xi Grant-In-Aid of Research- \$3178 travel funds for observing run
2018	AAS FAMOUS Travel Grant - \$500 toward the attendance of the 231 st AAS Meeting
2018A–2019	NOAO Observing Proposal- <i>Weather and aurorae on one of the Sun’s nearest neighbours</i> , (PI: J. Faherty), Co-I, 1 Night on SOAR Spartan
2017	PSC-CUNY Research Award 2017- (PI: Emily Rice), \$6,000 for observing trips
2016	NIGMS RISE Fellowship- \$30,000/year salary, \$1,500/year travel funds, \$1,500/year research allowance, full tuition

- 2015 **CUNY Science Scholar-** AY 2015–2016: \$25,000 stipend and full tuition
AY 2016–2017, AY 2017–2018, AY 2018–2019, and AY 2019–2020: full tuition
- 2015 **AAS FAMOUS Travel Grant-** \$1000 toward the attendance of the 225th AAS Meeting

Observing Experience

2019	IRTF/SpeX	1/2 night
2016–2018	Magellan/FIRE	9 nights
2016–2018	Magellan/ FOURSTAR	9 nights
2017	DuPont/CAPScam	1 night

Teaching Experience

Fall 2017	Adjunct Lecturer , Astro 102 (Laboratory Experiments in Astronomy), Hunter College Taught one section of introductory astronomy lab for non-science majors, 20 students.
Spring 2015	Lecturer , ASTR 116 (Astronomy Laboratory), San Francisco State University Taught one section of Introductory Astronomy Lab for non-science majors, ~30 students Prepared short lectures and activities to be done in the SFSU planetarium. Developed and graded quizzes, homework, and exams.
Spring 2015	Lecturer , PHYS 112 (General Physics I Laboratory), San Francisco State University Taught one section of Introductory Physics Lab for science majors, ~30 students. Developed and graded quizzes and homework.
2013–2014	Leuschner Telescope Workshop Instructor , San Francisco State University San Francisco, CA. Taught students how to operate the Leuschner 30-inch Telescope
Fall 2011– Fall 2014	Graduate Teaching Associate , ASTR 116 (Astronomy Laboratory), San Francisco State University. Taught two sections per semester of Introductory Astronomy Lab for non-science majors, ~30 students. Prepared short lectures and activities to be done in the SFSU planetarium. Developed and graded quizzes, homework, and exams. Part of group rewriting labs to be inquiry based.

Mentoring Experience

2020-present	Mentor to a small cohort of students in Cornell Multicultural Academic Council (MAC) Mentoring Program
2019–present	Mentored Emily Calimari (CUNY GC graduate student) on atmospheric retrievals of brown dwarfs
2018–2019	Co-Advisor of AMNH Helen Fellow (postbac) Colleen Cleary on subdwarf retrievals
2018–2019	Advisor of Makenzi Fischbach (HS Senior), Science Mentoring Research Program
2018–2019	Advisor of Dillion Murugesan (HS Junior), Science Mentoring Research Program
2018–2019	Advisor of Summer Williams (HS Junior), Science Mentoring Research Program
2017–2018	Advisor of Tony Zhu (HS Senior), Science Mentoring Research Program
2017–2018	Advisor of Nina Christenson (HS Junior), Science Mentoring Research Program
2017–2018	Advisor of Zephan D’Cruz (HS Junior), Science Mentoring Research Program
2017	Mentored Danya Abdelhameid (undergraduate), GradSpark Accelerator Program

K-12 Teaching and Mentoring Experience

2017–2019	Research Mentor , Science Research Mentoring Program, American Museum of Natural History New York, NY. Advised high school students during a year-long research project.
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2018	Instructor , American Museum of Natural History, New York, NY. Co-taught Wonderful Universe, an after school introductory astronomy class for sophomore, junior, and senior high school students.
2014–2015	Lego Engineer Instructor , Play-Well TEKnologies, San Francisco/ San Mateo Area, CA Taught K-5 th graders engineering through play with Legos as an after school program or birthday party. Created lesson plans to cover engineering concepts and building skills.
Summers 2012–2014	Lead Science Instructor , Camp Galileo, Woodside, CA Taught 3 rd -5 th graders science projects related to weekly camp themes. Helped campers to develop inquiry based learning skills using Galileo Innovation Approach.
2010–2011	Guest Experience Team Member , Impression 5 Science Center Lansing, MI Taught science workshops for general public, school groups and birthday parties. Engaged with visitors on the floor by answering questions about exhibits and running small activities.
2008–2010	America Reads Tutor , Woodcreek Elementary, Lansing, MI Worked with Kindergarten, 1 st , 3 rd and 4 th graders to improve their reading and math skills. Read aloud in small groups and worked on math worksheets.

Professional Service

2020–present	NSBP ASTRO Committee Member, NSBP 2020 Conference session organization.
2018–present	Women and Gender Minorities Committee Member, National Society of Black Physicists
Oct. 2020	#BlackInPhysics Co-founder. Lead organizer of the #BlackInPhysics week event Oct. 25-31 with professional panels, social events, articles, and community engagement via Twitter @BlackInPhysics and blackinphysics.org .
July 2019	Executive Secretary, NASA XRP Panel
2017–2019	AMNH Astrophysics Department Seminar Committee, New York, NY
Jan. 2019	Recruitment for CUNY Graduate Center Physics Program at Undergraduate Women in Physics Conference, Amherst College, Amherst, MA.
Nov. 2017	Recruitment for CUNY Graduate Center Physics Program at National Society of Black Physicists 2017 Conference, Atlanta, GA.
Apr. 2017	Bench Sciences Recruitment Video (Physics), CUNY Graduate Center. New York, NY
2013–2015	ASTR 116 Curriculum Revamp Committee, San Francisco State University, San Francisco CA. Rewrote astronomy lab curriculum to have an inquiry based focus.

Professional Development and Trainings

2021	Building Mentorship Skills for Academic Careers Training series. Develop essential research mentoring skills, learn best practices for mentoring undergraduate, graduate, and postdoctoral researchers, and develop advising and communication skills needed to lead a research team.
2020	NextGen Professor Program. 2020-2021 Cohort. Engaged in monthly meetings on topics related to professional and career development.

Outreach

Feb. 2021	Black In Physics Wikithon
Sept. 2020	Field Trip: Constellations. American Museum of Natural History's Youtube chat responder.
Aug. 2020	AAS Journal Author Series Chat on <i>Reanalysis of the Fundamental Parameters and Age of TRAPPIST-1</i> . Youtube presentation.

Aug. 2020	Morrison Planetarium “Cosmic Conversation”, California Academy of Sciences. Virtual presentation on Morrison Planetarium’s Facebook page.
Sept. 2019	Career Panel for Science Research Mentoring Program at the American Museum of Natural History. New York, NY
May 2019	Panel Presentation to Kingsbridge High School astronomy class. New York, NY
Jan. 2019	Astronaut Training, an adult comedy outreach game show at The Caveat. New York, NY
July 2018	Built solar powered cars with children and solar telescope observing at Bloomberg Summer Picnic. New York, NY
June 2018	Answered astronomy questions and Open Space planetarium software demonstrations at American Museum of Natural History ID Day. New York, NY
July 2017	Career Panel with American Museum of Natural History MEEP (college) and Saltz (high school) interns. New York, NY
June 2017	NRAO Facebook Live poster presentation at Women in Astronomy IV
Oct. 2014	Partial Solar Eclipse Event. Solar telescope observing and comet making with the general public. San Francisco State University, CA.
Fall 2012	Observatory Docent, San Francisco State University San Francisco, CA
Fall 2010	Volunteer, Impression 5 Science Center Lansing, MI
Fall 2009	Science Theatre Presenter, Michigan State University, East Lansing MI.

In the Media

Jan. 2021	Nature Physics: <u>Shining a Light on the Excellence and Power of the Black Physics Community</u>
Nov. 2020	Astrobites: <u>#BlackInPhysics week — meet the organizers</u>
Oct. 2020	Physics Today: <u>Meet the Organizers of #BlackInPhysics Week</u>
Oct. 2020	Physics World: <u>#BlackInPhysics Week set to celebrate Black Physicists</u>
Oct. 2020	Symmetry Magazine: <u>#BlackInPhysics week to build community, increase visibility</u>