Gregory J. Gilbert

Postdoctoral Scholar
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Curriculum Vitae last updated: 28 June 2024

Research Interests

exoplanets | planet formation | orbital dynamics | computational methods | science pedagogy

Education

PhD in Astronomy & Astrophysics, University of Chicago 2014-2021
Advisor: Prof. Daniel C. Fabrycky
BA in Physics, Washington University in St. Louis 2004-2008

Teaching

Teaching Assistant, University of Chicago (Chicago, IL)
ASTR: The Big Bang (2020) — ASTR: Galaxies (2017) — ASTR: Stars (2016)
PHYS: Introduction to Astronomy (2015) — CHEM: Chemistry of Earth's Atmosphere (2014)

Head of Science Curriculum, Academic Approach (Chicago, IL) 2011-2014

Led a team of six teachers and writers to produce lesson plans and exams for use by over 100,000 high school students in Chicago Public Schools. Recruited, vetted, and trained new team members. Oversaw quality and scientific accuracy of all published materials covering physics, chemistry, biology, and earth sciences.

Science/Math Instructor, Academic Approach (Chicago, IL) 2008-2014

Instructed grade 9-12 students at all levels of math and science, including algebra, geometry, calculus, statistics, physics, and chemistry. Guided students on college applications.

Peer Mentor, Washington University in St. Louis (St. Louis, MO) 2005-2008

Tutored undergraduates in General Physics I & II. Facilitated weekly small group study sessions. Assisted faculty advisor in developing problem sets and training new peer mentors.

Advising

Paige Entrican, UCLA undergrad 2023-present
Judah Van Zandt, UCLA PhD 2021-present
Mason MacDougall, UCLA PhD 2021-2023
Devin Hoover, UChicago undergrad 2020

Observing

Keck/KPF, 16 nights 2023-present
Keck/HIRES, 3 nights 2022
Magellan/LDSS3-C, 2 nights 2015

Service & Outreach

Journal Referee, Astronomical Journal | Astronomy & Astrophysics
Manuscripts refereed 1:1 commensurate with manuscripts published

Keck Planet Finder, Pasadena CA
Contributor to data reduction pipeline development 2023-present

Time Allocation Committees
Hubble Space Telescope, External Panel, Cycle 32 2024
Hubble Space Telescope, External Panel, Cycle 31 2023

Encyclopedia Comedia, Los Angeles CA 2024
Expert guest panelist for live comedy show series, episode “E is for Exoplanets"

Skype-a-Scientist (x3)
Virtual Q&A with middle school science classroom 2021

Departmental Committees, University of Chicago
Diversity, Equity, and Inclusion | Advising/Mentorship subgroup 2020
Education and Outreach 2019
Teaching | Physical Science Division 2017
Undergraduate Curriculum 2017

Awards

Future Investigators in NASA Earth, Space Sciences, and Technology Fellowship 2020-2021
Pierazzo International Student Travel Award 2017
University of Chicago Physical Science Teaching Prize (nominee x2) 2015, 2017

Talks

★ = invited ★ ★ = colloquium

*__Princeton/IAS__ Princeton, NJ | 2024
**__NASA Jet Propulsion Lab__ Pasadena, CA | 2024
__Extreme Solar Systems V__ Christchurch, NZ | 2024
*__University of California, Los Angeles__ Los Angeles, CA | 2024
*__Center for Computational Astrophysics__ New York, NY | 2023
__Columbia University__ New York, NY | 2023
*__The Ohio State University__ Columbus, OH | 2021
__Exomoons Conference, Cool Worlds Lab__ virtual | 2021
*__University of California, Los Angeles__ virtual | 2020
*__Penn State University__ virtual | 2020
__Exoplanets III__ virtual | 2020
__Princeton/IAS__ virtual | 2020
__Lake Michigan Exoplanet Meeting__ Chicago, IL | 2019
*__Depaul University__ Chicago, IL | 2018
__Chicagoland Exoplanet Meeting__ Chicago, IL | 2017

Publications

SAO/NASA Astrophysics Data System list available at gjgilbert.github.io/cv

Planets in the radius gap and planets larger than Neptune have elevated eccentricity *submitted*
Gilbert, GJ · Petigura, EA

The prevalence of resonance among young close-in planets *submitted*
Dai, F · et al. (including Gilbert, GJ)

The benchmark M dwarf eclipsing binary CM Draconis with TESS *2024*
Martin, DV · Sethi, R · Armitage, T · Gilbert, GJ · et al.

Accurate and efficient photoeccentric transit modeling *2023*
MacDougall, MG · Gilbert, GJ · Petigura, EA

The TESS-Keck Survey XV: Precise properties of 108 planets and their host stars *2023*
MacDougall, MG · Gilbert, GJ · Petigura, EA · et al.

TESS-Keck Survey XIV: Two giant exoplanets from the distant giants survey *2023*
Van Zandt, JE · MacDougall, MG · Petigura, EA · Gilbert, GJ · et al.

Implicit biases in transit models using stellar pseudo density 2022
Gilbert, GJ · MacDougall, MG · Petigura, EA

Accurate modeling of grazing transits using umbrella sampling 2021
Gilbert, GJ

Planetary period ratio sculpting near second-order mean motion resonances 2021
Bailey, N · Gilbert, GJ · Fabrycky, DC

An information theoretic framework for classifying exoplanetary system architectures 2020
Gilbert, GJ · Fabrycky, DC

A search for water in the atmosphere of HAT-P-26b using LDSS-3C 2016
Stevenson, KB · Bean, JL · Seifahrt, A · Gilbert, GJ · et al.