Gregory J. Gilbert

Postdoctoral Scholar
University of California, Los Angeles
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Curriculum Vitae last updated: 30 January 2025

Research Interests

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

Education

PhD in Astronomy & Astrophysics, University of Chicago 2014-2021
BA in Physics, Washington University in St. Louis 2004-2008

Teaching

Teaching Assistant, University of Chicago 2014-2020

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 covering physics, chemistry, biology, and earth sciences for use by over 100,000 Chicago Public Schools high school students. Recruited, vetted, and trained new team members.

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.

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

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

Service & Outreach

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

Time Allocation Committees
Various committees, ongoing as requested

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

Nerd Nite LA, Los Angeles CA
Public lecture series, guest speaker 2024

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

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

Talks

★ = invited ★ ★ = colloquium

Know Thy Star 2 Conference Pasadena, CA | 2025
*__University of Hawai‘i/IfA__ Mānoa, HI | 2024
**__Lowell Observatory__ Flagstaff, AZ | 2024
*__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

Major Contributions

Planets larger than Neptune have elevated eccentricities
Gilbert, GJ · Petigura, EA · Entrican, PM — *accepted for publication in PNAS*

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

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

Accurate modeling of grazing transits using umbrella sampling
Gilbert, GJ — 2022

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

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

Minor Contributions

Characterization of Earth-sized planet TOI-6324b with Keck Planet Finder
Lee, RA · et al. (including Gilbert, GJ) — *submitted*

The composition of rocky planets on close-in orbits tend to be Earth-like
Brinkman, CL · et al. (including Gilbert, GJ) — *submitted*

The TESS-Keck Survey XXIV: Outer giants may be more prevalent in the presence of inner small planets
Van Zandt, JE · et al. (including Gilbert, GJ) — *2025*

The prevalence of resonance among young, close-in planets
Dai, F · et al. (including Gilbert, GJ) — *2024*

An Earth-sized planet on the verge of tidal disruption
Dai, F · et al. (including Gilbert, GJ) — *2024*

The benchmark M dwarf eclipsing binary CM Draconis with TESS: spots, flares, and ultra-precise parameters
Martin, DV · Sethi, R · Armitage, T · Gilbert, GJ · et al. — *2024*

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

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

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