XINZE GUO

sunnyguo@berkeley.edu (510)-735-4152
2700 Hearst Ave, Stern, Berkeley, CA 94720

AREA OF INTEREST

I'm most passionate about exoplanets and habitable zone. I'm interested in Transit method, Simulation, and Data Analysis.

EDUCATION

Beijing National Day School, Beijing, China *July 2021*
High School Diploma

University of California, Berkeley, CA *Expected Spring 2025*
Bachelor of Arts in Astrophysics and Computer Science

TECHNICAL SKILLS

Professional:	Knowing methods to detect exoplanets and filter out potential exoplanet candidates from data.
Programming:	Python
Technologies:	Latex, Microsoft Suite, Adobe Photoshop, Autodesk 123D Design
Libaries:	Numpy, Matplotlib, Astropy
Language:	English (fluent), Chinese (native Speaker)

RESEARCH EXPERIENCE

Beijing University of Aeronautics and Astronautics *Jan 2018 - Dec 2019*
Researcher of TAFA Project
- Proposed the idea of Twin-body Asymmetric Flying-Wing Aircraft (TAFA) to carry out the air-monitoring task.
- Designed, modeled, and simulated it using the vortex lattice method and Computational Fluid Dynamics (CFD).
- Fabricated the TAFA plane model and did a successful flight test.
- Won S. -T. Yau High School Science Award (Physics) Division final first prize.
- Attended the 4th International Conference on Modeling, Simulation, and Applied Mathematics.
- Publication: GUO, Xin-ze, Bo-zhao FAN, Jun HUANG, and Jing-feng XIE. "CFD and VLM Simulation of the Novel Twin-Body Asymmetric Flying-Wing Aircraft." DEStech Transactions on Computer Science and Engineering, no. msam (2020). https://doi.org/10.12783/dtcse/msam2020/34237.

ULAB *Sep 2021 - Present*
Mentee of the Exoplanets Project
- Research question: Can we discover and confirm an unknown exoplanet by looking and filtering data from TESS and taking pictures of potential candidates?
- A potential candidates of exoplanet needs three transit to confirm. We tried to find a potential candidates with transit period between 14-30 days since TESS only observe the same patch of sky for 27 days.
- We will look through the light curves, periods, secondary eclipse, Even Odd Test, SNR and other data to filter out potential candidates.
- We will then use telescope to take pictures of the potential candidates and observe three transits to confirm it.

Python Decal Final Project *Sep 2021 - Present*
Project Member
- Utilize data from Berkeley SETI's Automated Planet Finder to plot a 2D spectrum of Tabby's Star.
- Use the basic knowledge of numPy, Matplotlib, and AstroPy to abstract and plot the spectrum.

ACTIVITY

Summer Session at Stanford University *June 2020 - Aug 2020*
Student
- Learned about the life cycle of stars, various types of planets, techniques used to detect extrasolar planets and their

detection biases, and habitability.
- Did a project about the collision between the Milky Way and Andromeda Galaxy.

Berkeley Physics Directed Reading Program (PDRP) *Sep 2021 - Present*
Mentee
- Read papers about simulations methods and using the exoplanets data to derive earlier universe formation.
- Deliver a speech about exoplanets and use of data.

Undergraduate Astronomical Society (UAS) *Sep 2021 - Present*
Member
- Learn to use ground-based telescope to observe Jupiter, Saturn, Moon, M31, and ring nebula.