

HUAZHI GE

Mobile: (831)-201-9351 ◇ E-mail: huazhige@ucsc.edu

[ORCID:0000-0001-6719-0759](#) ◇ [Personal Website](#)

EDUCATION

University of California Santa Cruz, Santa Cruz, CA

Sep. 2017 - Present

Ph.D. Candidate in Planetary Sciences

Department of Earth and Planetary Science

Research Topic: Large-Scale and Cloud-Resolving Simulation in Planetary Atmospheres, Numerical Scheme of Computational Fluid Dynamics, Exoplanet and Brown Dwarfs Atmospheres

Advisor: Prof. Xi Zhang

University of Science and Technology of China, Hefei, Anhui

Aug. 2013 - Jul. 2017

Bachelor of Science

School of Gifted Young

Advisor: Prof. Tao Li

HONORS AND AWARDS

7. 51 Pegasi b Fellowship (3 years, \$415,000), Caltech *Aug. 2023 - Aug. 2026*

6. Dissertation Quarter Fellowship (1 Quarter, \$8000), UCSC *2022-2023*

5. Aaron and Elizabeth Waters Award (\$5000), Department of EPS, UCSC *Jun. 2020*

4. NASA Earth and Space Science Fellowship (3 years, \$135,000), NSSF *2019 - 2021*

Tropospheric Dynamics of Jupiter: Insights from Tracer Distributions from Juno and Ground-based Observations

3. Outstanding Undergraduate Thesis Prize, USTC *Jul. 2017*

2. Outstanding Undergraduate Research Prize, USTC *Sep. 2016*

1. Outstanding Student Prize, USTC *2016*

PUBLICATIONS

4. **Ge. H.**, Li. C., Zhang. X. Cloud and Temperature Structure of Ice Giants Revealed by the Cloud-Resolving Simulations *to be submitted*

3. **Ge. H.**, Li. C., Zhang. X. A stable and superadiabatic weather layer in Jupiter induced by moist convection *Nature Astronomy, in review*

2. **Ge. H.**, Li. C., Zhang. X. and Lee. D., 2020. A Global Non-Hydrostatic Atmospheric Model with a Mass and Energy Conserving Vertically-Implicit-Correction (VIC) Scheme. *The Astrophysical Journal* 898.2 (2020): 130.

DOI: doi.org/10.3847/1538-4357/ab9ec7

1. **Ge. H.**, Zhang, X., Fletcher, L.N., Orton, G.S., Sinclair, J., Fernandes, J., Momary, T., Kasaba, Y., Sato, T.M. and Fujiyoshi, T., 2019. Rotational Light Curves of Jupiter from Ultraviolet to Mid-infrared and Implications for Brown Dwarfs and Exoplanets. *The Astronomical Journal*, 157(2), p.89.

DOI: doi.org/10.3847/1538-3881/aafba7

PROFESSIONAL AND RESEARCH EXPERIENCE

University of California, Santa Cruz, Santa Cruz, California, USA

Visiting Scholar, Rotational Light Curves of Jupiter

Jun. 2016 - Sep. 2016

Research Assistant in Planetary Atmosphere

Aug. 2017 - present

Teaching Assistant of EART 124-01, Modelling Earth Climate

Spring 2018, 2020

Teaching Assistant of EART 119A, Intro to Scientific Computation

Spring 2019

Teaching Assistant of EART 121, The Atmosphere

Fall 2020

Teaching Assistant of EART 12, Intro to Weather and Climate

Winter 2022

University of Nevada, Las Vegas (UNLV), Las Vegas, Nevada, USA

Sep. 2019

Visiting Researcher for Zhaohuan Zhu

University of Science and Technology of China, Hefei, Anhui, China

Research Assistant in CAS Key Laboratory of Geospace Environment

Sep 2016 - Jun. 2017

Teaching Assistant of Analytical Mechanics

Sep. 2016 - Jan. 2017

RESEARCH MENTORING

Undergraduate Student

Nina Robbins Branch (now graduate student in University of Hamburg, Germany)

Jun. 2019 - Feb. 2021

Henry Olling

Sep. 2022 - present

INVITED TALKS

7. DIX Planetary Seminar, Caltech

Nov. 2022

Jupiter as an air conditioner: how giant planets' weather tells a story from the outside in

6. Planetary Lunch Seminar, MIT

Oct. 2022

Jupiter as an air conditioner: how giant planets' weather tells a story from the outside in

5. Special CIPS talk, UCB

Aug. 2022

Water controls heat transport in Jupiter's weather layer: Implication to the evolution and interior of gas giants

4. Bay Area Planetary Science Conference

May. 2022

How is the Planetary Heat Flux Carried Through Jupiter's Atmosphere?

3. Journal Club, Department of Physics and Astronomy, UNLV

Sep. 2019

Non-Hydrostatic Atmospheric Modeling on Jupiter with Horizontally Explicit and Vertically Implicit (HEVI) Time Integration Scheme

2. GAFD, Applied Mathematics, UCSC

Jun. 2019

Non-Hydrostatic Atmospheric Modeling on Jupiter with Horizontally Explicit and Vertically Implicit (HEVI) Time Integration Scheme

1. Caltech YLY Lunch Seminar

Sep. 2016

Emission Light Curves of Jupiter and Brief Insights on (Cold) Brown Dwarfs

CONFERENCE & WORKSHOP TALKS

9. **H. Ge**, C. Li, X. Zhang "Exploring the role of water in Jupiter's weather layer: Implication to the evolution and interior of gas giants" 54th DPS, 2022.

8. **H. Ge**, C. Li, X. Zhang "Water relays heat transport in Jupiter's weather layer" OWL summer school, 2022.

7. **H. Ge**, C. Li, X. Zhang "Cloud-Resolving Simulation of Moist Convection in Jupiter's Atmosphere" No. EPSC 2021-342. Copernicus Meetings, 2021.

6. **H. Ge**, C. Li, X. Zhang “Implicit SNAP: A New Global Nonhydrostatic Atmospheric Model Designed to Study Planetary Atmospheres” AAS/Division for Planetary Sciences Meeting Abstracts 52. Vol. 52. 2020
5. **H. Ge**, C. Li, X. Zhang, D. Lee “On the road to simulate non-hydrostatic atmospheric dynamics on Jupiter.” OWL Summer School, UC Santa Cruz, 2019.
4. **H. Ge**, C. Li, X. Zhang, D. Lee “A Horizontally Explicit and Vertically Implicit Time (HEVI) Integration Scheme for Athena⁺⁺ to Study Non-Hydrostatic Planetary Tropospheric Dynamics.” Athena⁺⁺ Workshop, UNLV, 2019.
3. **H. Ge**, X. Zhang, L. N. Fletcher, et al. “Using Jupiter’s Light Curves from the UV to the Mid-IR to Study the Light Curves on Brown Dwarfs and Direct-Imaging Planets.” OWL Summer School, UC Santa Cruz, 2019.
2. **H. Ge**, X. Zhang, L. N. Fletcher, et al. “Using Jupiter’s Light Curves from the UV to the Mid-IR to Study the Light Curves on Brown Dwarfs and Direct-Imaging Planets.” AAS/Division for Planetary Sciences Meeting Abstracts 50. Vol. 50. 2018.
1. X. Zhang, **H. Ge**, L. N. Fletcher et al. ”Multi-band Emission Light Curves of Jupiter: Insights on Brown Dwarfs and Directly Imaged Exoplanets.” AAS/Division for Planetary Sciences Meeting Abstracts 48. Vol. 48. 2016.

CONFERENCE POSTERS

4. **H. Ge**, et al. “Convective Inhibition in Jupiter’s Water Cloud Layer and Enriched Water Abundance over Jupiter’s High Latitudes and Polar Atmosphere.” P25D-2178 , AGU 2021
3. **H. Ge**, et al. “3-D Global Cloud-Resolving Model with Horizontally Explicit and Vertically Implicit Time Integration Scheme: Application to Ice Giants.” P13B-3498, AGU 2019
2. **H. Ge**, et al. “Non-Hydrostatic Modeling Jupiter’ s Cloud Formation and Tropospheric Dynamics in the Juno Era.” P33F-3888, AGU 2018
1. **H. Ge**, et al. “Infrared rotational light curves on Jupiter induced by wave activities and cloud patterns and implications on brown dwarfs.” AAS/Division for Planetary Sciences Meeting Abstracts 49. Vol. 49. 2017.

OUTREACH AND PUBLIC SERVICE

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| 4. First Year Orientation and Mentor Mixer in Earth and Planetary Department | Sep 2022 |
| 3. Group meeting organizer | 2022 - 2023 |
| 2. Graduate Student Representative in Earth and Planetary Department | 2022 - 2023 |
| 1. Volunteered Judge of Science Fair in Westlake Elementary School | Feb. 2022 |

LANGUAGE

Human Language: Chinese (mother tongue), English (professional), Japanese, German

Computer Language: C⁺⁺, Python, Fortran