HUAZHI GE

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EDUCATION

University of California Santa Cruz, Santa Cruz, CA *Sep. 2017 - Jun. 2023*
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

APPOINTMENT

Postdoc at California Institute of Technology, CA *Aug. 2023 - Aug. 2025 (expected)*
Division of Geological and Planetary Sciences
51 Pegasi b Fellow

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), NESSF *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

6 Peer-Reviewed Publications, 5 First-Author Paper

6. **Ge. H.**, Under Review, "Convective Inhibition of a Subsaturated Weather Layer Induced by Downdrafts in Giant Planet Atmospheres."

5. **Ge. H.**, Li. C., & Zhang. X., Under Review, "A stable and superadiabatic weather layer in Jupiter induced by moist convection."

4. **Ge. H.**, Li. C., Zhang. X., & Moeckel. C., Under Review, "Heat-Flux Limited Cloud Activity and Vertical Mixing in Giant Planet Atmospheres with an Application to Uranus and Neptune."

3. Zhang. X., Li. C., **Ge. H.**, and Le. T., (2023), "The Inhomogeneity Effect III: Weather Impacts on the Heat Flow of Hot Jupiters." The Astrophysical Journal, in press [Arxiv link] (contribution: analyzing data, plot figures)

2. **Ge. H.**, Li. C., Zhang. X., & Lee. D. (2020). "A Global Nonhydrostatic Atmospheric Model with a Mass-and Energy-conserving Vertically Implicit Correction (VIC) Scheme." The Astrophysical Journal, 898(2), 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" 54_{th} 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 andimplications on brown dwarfs." AAS/Division for Planetary Sciences Meeting Abstracts 49. Vol. 49. 2017.

OUTREACH AND PUBLIC SERVICE

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