

Hiu Ching Jupiter Cheng, Ph.D. candidate

Department of Geology, University of Georgia
Geography-Geology Building, Room 310, 210 Field Street; Athens, GA 30602-2501
Email: jupiterchc@uga.edu

Education

Doctor of Philosophy (Ph.D.) | The University of Georgia (UGA) *Current Overall GPA: 4.00*

Aug 2019 – Present (expected May 2023)

- Geology Department: Center for planetary tectonics

Master of Philosophy (MPhil) | The University of Hong Kong (HKU)

Sep 2017 – Aug 2019

- Earth Science Department: Tectonics and planetary science

Bachelor of Science (BSc) | The University of Hong Kong (HKU)

Sep 2013 – Aug 2017

- Major in Geology and Minor in Geography
- Under the Pathway Accredited by the Geological Society of London
- Capstone summer field school: Judson Mead Geologic Field Station, Cardwell, Montana, USA

Research Experience

Doctoral Research | The University of Georgia (UGA)

Aug 2019 – Present (expected 2023)

- **Thesis committee:** Dr. Christian Klimczak (Major professor), Dr. Rob Hawman (Internal), Dr. Steven Holland (Internal), Dr. Caleb Fassett (External)
- **Research Topic:** The tectonics of 4 Vesta
- Detailed structural mapping and lithospheric strength calculations to examine the origin of large-scale troughs on Asteroid 4 Vesta
- Crater counting to explore the age relationships of large-scale troughs and impact basins on Asteroid 4 Vesta

Master Research | The University of Hong Kong (HKU)

Sep 2017 – Aug 2019

- **Supervisors:** Dr. A. Alexander G. Webb (primary) and Dr. Joseph Michalski
- **Thesis Title:** Geological and structural mapping of Ishtar terra margins on Venus: Implications for crustal plateau evolution.
- Geological mapping on units and deformational structures along Venus tessera highland margins to test various crustal plateau formation models

Visiting Student | Hampton University (HU)

Nov 2018

- **Research mentor:** Dr. William B. Moore
- Numerical modeling on the internal structures and temperature profiles of Venus using parameterization model for heat pipe planets

Undergraduate Thesis | The University of Hong Kong (HKU)

Sep 2016 – Apr 2017

- **Supervisors:** Dr. A. Alexander G. Webb (primary) and Dr. Joseph Michalski
- **Thesis Title:** Geological mapping on Venus highland margins to test the heat pipe hypothesis

Industry Experience

Summer Intern | Tysan Foundation Geotechnical Limited (Hong Kong)

Jul – Aug 2016

Teaching Experience

GEOL 3000 Alien Worlds UGA – Teaching Assistant	Fall 2021
GEOL 4360 Introduction to Rock Mechanics UGA – Teaching Assistant	Fall 2021
GEOL 4060L Structural Geology UGA – Teaching Assistant	Spring 2021
GEOL 1121L Earth Processes and Environments Lab UGA – Instructor	Fall 2019 and Spring 2020

- Course Evaluations:

Course	Semester	Enrollment	Evaluations	Overall Rating Instructor
GEOL 1121L	Fall 2019	12	9	4.4/5
GEOL 1121L	Fall 2019	14	8	4.4/5
GEOL 1121L	Spring 2020	17	4	4.3/5

GEOL 1121 Earth Processes and Environments UGA – Teaching Assistant	Spring and Fall 2020
EASC3405 Environmental Remote Sensing HKU – Teaching Assistant	Spring 2018 and 2019
Undergraduate Taiwan Field Trip HKU – Teaching Assistant	Jan 2019
EASC4407 Regional Geology HKU – Teaching Assistant	Fall 2017 and 2018

Undergraduate and Graduate Research Mentoring

- Leung Chit Yan (Eunice), B.S. 2019 (HKU) Testing Corona formation models on Venus via structural mapping

Languages

English (proficiency)	Cantonese (mother tongue)	Mandarin (proficiency)
------------------------------	----------------------------------	-------------------------------

Computer Skills

Microsoft Office ArcGIS	Adobe Illustrator / Inkscape ENVI	R MATLAB / Octave
--	--	------------------------------------

Peer-reviewed Publications

Cheng, H. C. J., Klimczak, C., & Fassett, C. I. (2021). Age relationships of large-scale troughs and impact basins on Vesta. *Icarus*, 366, 114512.

Abstracts and Conference Presentations

Cheng, H. C. J. and Klimczak, C. “The large-scale troughs on Asteroid 4 Vesta are opening-mode fractures.” *European Geosciences Union General Assembly 2021*. PS3.1 – Small Bodies and Dust — Open Session

Cheng, H. C. J., Klimczak, C. and Fassett, C. I. “Age Relationships of Large-Scale Troughs and Impact Basins on Vesta.” *Lunar and Planetary Science Conference*. Vol. 52. 2021. Abstract [#1014](#) Oral presentation.

Cheng, H. C. J. and Klimczak, C. “Systematic Fracture Pattern on Vesta Revealed by Polygonal Impact Craters.” *Lunar and Planetary Science Conference*. Vol. 52. 2021. Abstract [#1015](#). Poster presentation.

Hirabayashi, M., Fassett, C. I., Montalvo, P., **Cheng, H. C. J.** and Klimczak, C. “Efficient Topographic Degradation on Ceres as Revealed by the Equilibrium Population of Small Craters.” *Lunar and Planetary Science Conference*. Vol. 52. 2021. Abstract [#1585](#)

Cheng, H. C. J. and Klimczak, C. “Opening-mode fractures are an alternative explanation for large-scale troughs on Asteroid 4 Vesta.” *Lunar and Planetary Science Conference*. Vol. 51. 2020. Abstract [#1002](#)

Cheng, H.C.J., Webb, A.A.G., Michalski, J.R. and Moore, W.B. "Testing crustal plateau formation models for Venus using geological mapping of Ishtar Terra marginal areas." *Lunar and Planetary Science Conference*. Vol. 50. 2019. Abstract [#1332](#). Poster presentation. The Woodlands, TX, USA

Other Publications

Klimczak, C., Beddingfield, C. B., Byrne, P. K., **Cheng, H. C. J.**, Crane, K. T. and Annex. A. +28 signatories “Opportunities and Challenges for Structural Geology and Tectonics in the Planetary Sciences.” 2020. White paper submitted to the *Planetary Science and Astrobiology Decadal Survey 2023-2032*

Research Awards & Grants

Frank E. Kottowski Memorial Grant AAPG Foundation Grants-in-Aid Award 2021	\$3000
The Eugene M. Shoemaker Impact Cratering Award GSA Planetary Geology Division 2020	\$3000

Travel Grants

Early-career Travel Award NASA Small Bodies Assessment Group 2020	*Virtual due to COVID-19	
Watts Wheeler Travel Award Department of Geology University of Georgia 2020		\$800
Travel Support for Research Postgraduate Students The University of Hong Kong 2018		\$1300

Other Scientific Community Contributions & Experiences

Executive Secretary, Lunar Data Analysis Program Review Panel
Student Advisory Members, GSA Planetary Geology Division, *starting from October 2021*
Session Chairperson and Co-convener, GD1.1 – Causes of dynamic, tectonic, and compositional transitions in the Earth and rocky planets, *European Geosciences Union General Assembly 2021*.
DART Boarder, Double Asteroid Redirection Test (DART) Mission Boarder Program, *14-18 June 2021*
InSightSeers, InSightSeers Program, Mentor: Dr. Paul Morgan, *28 June – 2 July 2021*

Academic Service Experiences

UGA Geology Faculty Learning Community Member | **Spring 2021 – Present**

- Project topic: Best Practices of Online Teaching and the development of Hybrid and F2F High Impact Practices (HIPS): Assessment and Development of Geology HIPS

UGA Graduate Student Association – Graduate Council Representative | **Fall 2020 – Spring 2021**

- Professional Development and Campus Student Support Committee

UGA Geology Graduate Student Representative | **Fall 2020 – Spring 2021**

- Attend monthly departmental faculty meetings to represent matters the graduate student body

UGA Academic Honesty Student Panelist | **Fall 2019 – Present**

- Review materials related to the allegation, hear from the instructor and student, and then decide whether or not a violation of the policy has occurred