

(Betty) Pei-Chun Tsaitsai@mps.mpg.de | +49 551 384 979 - 129**EDUCATION**

Max Planck Institute for Solar System Research (MPS), Göttingen, Germany	PhD student
International Max Planck Research School at TU Braunschweig	Sep. 2024 – present
National Central University (NCU), Taoyuan, Taiwan	
M.S. in Astronomy, with <i>Phi Tau Phi</i> Award, Overall Score: 4.3/4.3	Sep. 2022 – Jul. 2024
B.S. in Earth Sciences, Overall Score: 3.51/4.3	Sep. 2018 – Jun. 2022

RESEARCH EXPERIENCE

PhD Thesis: Planetary Plasma Environment Group, MPS	Sep. 2024 – present
Topic: <i>Ganymede's Magnetic Field Model and Surface Charging</i>	
Advisor: Dr. Norbert Krupp, Dr. Elias Roussos, Prof. Yasuhito Narita	
<ul style="list-style-type: none"> Developing a global magnetic field model of Ganymede and investigating surface charging processes and plasma interactions. 	
Master Thesis & Bachelor: Solar System Group, NCU	Mar. 2020 – Jul. 2024
Topic: <i>Satellite-Magnetosphere Interactions at Outer Planets</i>	
Advisor: Prof. Wing-Huen Ip, NCU	
<ul style="list-style-type: none"> Conducted research on the interaction between satellites and the magnetospheres of outer planets, focusing on the interplay between charged particles and moons such as Jupiter's Europa, Saturn's Mimas, and Uranus's Miranda. 	
Bachelor: 1) 2021 Academia Sinica (ASIAA) Summer Student Program	Jul. 2021 – Aug. 2021
Topic: <i>Occlusions of Stars by Debris Discs</i>	
Advisors: Dr. Zeegers S., Dr. Marshall J. and Dr. Otten G.	
<ul style="list-style-type: none"> Modeled interactions between debris discs and background stars to predict future occultations 	
2) Tectonics of Mountain Group, NCU	Sep. 2020 – Jun. 2021
Advisor: Prof. Chih-Tung Chen, NCU	
<ul style="list-style-type: none"> Analyzed meteorite samples using a Raman spectroscopy to determine their composition. 	
3) University Consortium of ALMA-Taiwan (UCAT) Summer Student	Jul. 2020 – Aug. 2020
Advisor: Prof. Wei-Ling Tseng, National Taiwan Normal University	
<ul style="list-style-type: none"> Applied numerical analysis to model the trajectory of outgassing events of (1) Ceres. 	

SKILLS

- Python (very confident): numpy, matplotlib, astropy, astroquery, pandas, sklearn, obspy
- C++ (intermediate level), MATLAB (basic level), Linux, LaTeX

SCHOLARSHIPS & AWARDS

2023 Honorary Phi Tau Phi Membership, NCU (Awarded to the top 3% of students in the institute)

2023 Scholarship for Excellent Students, NCU

2023 Best Presentation Poster Awards with Scholarships, ASROC Annual Meetings

2022 Fall, 2023 Spring Semester Academic Excellence Awards with Scholarships, NCU

2020 Excellent Awards, 1st International Space Station Experiment Design Contest

Oral Talks

- Astronomical Society (ASROC) 2024 Annual Meeting** Changhua, Taiwan, Jun. 2024
Constraints on the Timescale of Magnetic Reversal of Saturn
- NCTS Astrophysics Student Lunch Seminar** Taipei, Taiwan, Mar. 2024
Invited Talk: *Satellite Magnetosphere Interactions at Outer Planets*
- Mini-Workshop on Kronian Moons and Rings** Taipei, Taiwan, Dec. 2023
Invited Talk: *The Radiolysis of Mimas and other icy moons*
- ASROC 2023 Annual Meeting** Kaohsiung, Taiwan, May 2023
Oral (Invited) & Poster (Best Poster Awards): *Radiolysis Effects On The Saturnian Inner Icy Satellite Mimas*
- 2021 ASIAA Summer Student Program** Taipei, Taiwan, Aug. 2021
Occultations of Stars by Debris Discs
- 2020 UCAT Summer Student Program** Hsinchu, Taiwan, Aug. 2020
Comparative planetology: the journey of the small icy bodies in our solar system
- 2018 Shizuoka Kita Youth Science Engineering Forum** Shizuoka, Japan, Aug. 2018
Oral & Poster: *The Moon and Mercury: Rugged worlds*

Posters Presentations

- 2024 Conference on Magnetospheres of the Outer Planets** Minnesota, USA, Jul. 2024
Exploring Satellite-Magnetosphere Interactions at Uranus and Neptune
- 2024 Annual Meeting of the Physical Society of Taiwan (TPS)** Taoyuan, Taiwan, Jan. 2024
Satellite-Magnetosphere Interaction Effects at Miranda and Uranus
- 55th DPS Meeting Joint with EPSC** Texas, USA, Oct. 2023
Satellite-Magnetosphere Interaction Effects at Uranus and Neptune
- 2023 Annual Meeting of the TPS** Tainan, Taiwan, Jan. 2023
The Patterns of Energetic Charged Particles Sputtering on Europa's Surface
- ASROC 2022 Annual Meeting** Chiayi, Taiwan, Oct. 2022
Revisit Europa's Surface: the Patterns of Energetic Charged Particle Sputtering
- 2022 Annual Meeting of the TPS** Taipei, Taiwan, Jan. 2022
The Collisional Dynamics of the third largest asteroid (2) Pallas

TEACHING EXPERIENCE

Teaching Assistant: 2023

[CC0203 *Introductory Astronomy*] Department of Physics, NCU

- Assisted the course professor with the preparation and execution of coursework for a class of over 100 undergraduate students and organized classroom activities like observatory visits.
- Taught general education topics in astronomy, striving to clarify complex concepts and enhance student understanding.

OUTREACH

Assistance, Taiwan Space Union (TSU), NCU Sep. 2022 – Jul. 2024

- Managed the coordination of meetings, e.g. Mini-Moon Seminar, Taiwan International Assembly of Space Science, Technology, and Industry joint with TSU-Satellite Science Workshop ...