Tsung-Chi Chen

Nationality: Taiwanese **Date of birth:** 3 Dec 1999 **Phone number:** (+886) 933503571

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EDUCATION AND TRAINING

M.S. in Astrophysics

National Taiwan University, Taiwan [Sep 2022 – Current]

City: Taipei City

Country: Taiwan

Thesis: A systematic search of distant supercluster in HSC wide layer

B.S. in Physics

National Taiwan University, Taiwan [Sep 2018 – Jun 2022]

City: Taipei City

Country: Taiwan

Overall GPA: 3.73/4.30

WORK EXPERIENCE

Research Assistant

Institute of Astronomy and Astrophysics, Academia Sinica (ASIAA) [Sep 2021 – Current]

City: Taipei City

Country: Taiwan

- Develop supercluster finding algorithm and study the effect of high-dense environment on galaxies and galaxy clusters properties
- Study the uniqueness of brightest cluster galaxies (BCGs) by Tremaine-Richstone statistics and BCG stellar mass - cluster stellar mass correlation using HST, Spitzer data and IllustrisTNG series data
- Reduce CFHT WIRcam J-band images, measure the 5 sigma point source depth of final mosaics and design the pointings and exposure time for CFHT 23A and CFHT 23B programs

Student Researcher

European Southern Observatory (ESO) [Jul 2023 – Aug 2023]

City: Garching

Country: Germany

Project: Revealing the footprint of a variable IMF in galaxy-integrated spectra

- Conduct the first attempt study to explain the sodium deficient feature at 589.5nm by variable integrated galactic-wide IMF (IGIMF)
- Fit stacked SDSS dwarf galaxy spectrum with simple stellar population templates generated by IGIMF and E-MILES

Student Researcher

Theoretical and Computational Astrophysics Thematic Group, (NCTS-TCS) [Jul 2022 – Aug 2022]

City: Taipei City

Country: Taiwan

Project: Effects of magnetic field and viscosity on jellyfish galaxies

- Investigated the effect of magnetic field and viscosity on jellyfish galaxies under four different scenarios via magnetohydrodynamics (MHD) simulations

- Estimated the computation resources required, calculated time scale of Kelvin-Helmholtz instability and analyzed physical quantities by generating animations
- Revealed that morphology of ram-pressure stripping tails under isotropic viscosity scenario is strikingly different from others because of magnetic field direction and low ambient plasma beta
- Presented results to around 30 other researchers and won the **best presentation award**

Student Researcher

Institute of Astronomy and Astrophysics, Academia Sinica (ASIAA) [Jul 2021 – Aug 2021]

City: Taipei

Country: Taiwan

Project: Searching for super-clusters using the Hyper Suprime-Cam Survey data

- Conducted the first systematic search of supercluster at high redshift by applying friends-of-friends (FoF) algorithm on CAMIRA cluster catalog from Hyper Suprime-Cam (HSC) survey
- Calibrated the critical parameters of FoF algorithm by evolving N-body simulations up to far future
- Identified more than 800 supercluster candidates at redshift 1.0>z>0.5 in sky area over 1100 deg^2

LANGUAGE SKILLS

Mother tongue(s): **Mandarin**

Other language(s): **English**

DIGITAL SKILLS

Programming skills

Python / C++ / Linux / Shell script / IDL / OpenMP / MPI

Software

SAOImageDS9 / SExtractor / ppxf

TEACHING EXPERIENCE

Teaching Assistant, General Astronomy (undergraduate level)

[Feb 2022 – Jun 2022]

- Assisted the lecturer with in-class affairs including answering students' questions and score registration
- Corrected over four hundred assignments with other TAs and compiled detailed solution for two of the homework sets
- Presented a one-hour talk to more than 80 students introducing my research experience

CONFERENCE AND PROFESSIONAL INVOLVEMENT

Oral Presentation, 2023 ASROC Annual Meeting

[May 2023]

National Sum Yat-sen University, Taiwan

Talk, HSC cluster working group telecon, online

[Apr 2023]

2nd NCTS/UCAT/NTHU International Astronomy Winter School

[Feb 2023]

Magnetism in Star-Forming and Galactic Environments, NCTS, Taiwan

Poster Presentation, 2022 ASROC Annual Meeting

[Oct 2022]

National Chung Cheng University, Taiwan

Member of ASIAA Journal Club, Galread

[Sep 2022 – Current]

- Participates in paper discussion weekly
- Presented one Galread talk and led through discussions

Last updated Sep 2023