

# Lin Yen-Hsing

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Github: [α Aquilae](#)

**Personal Website** (more detailed information!)



## EDUCATION

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### National Tsing Hua University

Interdisciplinary Program of Science (IPS) double program in Physics and Astrophysics

Hsinchu, Taiwan

2017 – 2021

### National Tsing Hua University

Institute of Astronomy (IoA)

Hsinchu, Taiwan

2021 – Current

## ACADEMIC EXPERIENCE

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### Institute of Astronomy and Astrophysics, Academia Sinica

Undergraduate Student, PI: Dr. Hiroyuki Hirashita

Taipei, Taiwan

2019 – 2021

- Geometry effects on dust attenuation curves with different grain sources at high redshift
- Investigating the effect of geometry and dust grain size distribution on the SED of high redshift galaxies using radiation transfer code SKIRT.

### Institute of Astronomy, NTHU

Undergraduate / Master Student, PI: Prof. Hsiang-Yi Karen Yang

Hsinchu, Taiwan

2020 – Current

- Evolution and feedback of AGN Jets of Different Cosmic-ray (CR) Composition
- Investigating the effect of jet composition with 3D CRMHD simulation of CRp and CRe jet using FLASH.

## SCIENTIFIC PUBLICATIONS

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1. **Yen-Hsing Lin**, Hiroyuki Hirashita, Peter Camps, Maarten Baes, “Geometry effects on dust attenuation curves with different grain sources at high redshift”, MNRAS, Volume 507, Issue 2, October 2021, Pages 2755–2765
2. Yuan-Ming Hsu, Hiroyuki Hirashita, **Lin Yen-Hsing**, Peter Camps, Maarten Baes, “Effects of dust sources on dust attenuation properties in IllustrisTNG galaxies at  $z \sim 7$ ”, Monthly Notices of the Royal Astronomical Society, Volume 519, Issue 2, February 2023, Pages 2475–2485.
3. **Yen-Hsing Lin**, H.-Y. Karen Yang, Ellis R. Owen, “Evolution and feedback of AGN Jets of different Cosmic-ray Composition”, Monthly Notices of the Royal Astronomical Society, Volume 520, Issue 1, March 2023, Pages 963–975.

## AWARDS

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- **2023 NTHU College of Science Elite Student Award**
- **2023 TPS annual meeting poster competition: Merit award**
  - Title: Simulating the effects of cosmic-ray dominated jets in cool-core clusters, 2023.01.18
- **2022 Physical Society in Taiwan: Undergraduates Student Thesis Award**
  - I won the award with my paper “Geometry effects on dust attenuation curves with different grain sources at high redshift”, 2022.12.12
- **2022 NCTS Student Outstanding Paper Award**

- I won the award with my paper “Geometry effects on dust attenuation curves with different grain sources at high redshift”, 2022 Summer
- **2022 TPS Annual Meeting Poster Competition: Honorable Mention**
  - Annual Meeting of the Physical Society of Taiwan, 2022.01.25.
- **2021 NTHU Physics Poster Competition: 1<sup>st</sup> place**
  - NTHU Physics Department. 2021.12.29.

## INVITED TALKS

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1. **NCTS Annual Theory Meeting**
  - Simulating the effects of cosmic-ray dominated jets in galaxy clusters. 2022.12.14
2. **NCTS Outstanding student paper award ceremony**
  - Geometry effect on dust attenuation curves of different grain sources in high redshift, 2022.09.23
3. **NCTS Astrophysics seminar**
  - Evolution of AGN Jets of different Cosmic-ray Composition, 2022.08.26.
4. **NTU Physics department student seminar**
  - Geometry effect on dust attenuation in high redshift / Evolution of AGN Jets of different Cosmic-ray Composition, 2021.05.13

## CONTRIBUTED TALKS

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1. **TPS annual meeting (Poster)**
  - Simulating the effects of cosmic-ray dominated jets in cool-core clusters
2. **TPS annual meeting (Poster)**
  - Evolution of AGN Jets of different Cosmic-ray Composition, 2022.01.25
3. **NTHU Physics department poster competition (Poster)**
  - Evolution of AGN Jets of different Cosmic-ray Composition, 2021.12.28
4. **ASIAA Hiroyuki Hirashita’s mini workshop (Oral)**
  - Evolution of AGN Jets of different Cosmic-ray Composition, 2021.12.13
5. **ASROC 2020 (Poster)**
  - Geometry effects on dust attenuation curves with different grain sources at high redshift, 2020.09.03
6. **Galaxy Workshop 2020 (Poster)**
  - Geometry effects on dust attenuation curves with different grain sources at high redshift, 2021.02.05

I am also presenting in NTHU journal club (astro-ph, host by Prof. Tomo Goto) roughly twice per month.

## TEACHING

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| • <b>Advisor of astronomy club</b> , National Hsinchu Girl’s Senior High School, Taiwan<br><i>Teaching high school students about astronomy knowledge, telescope operation and club management</i> | 2019 – 2022 |
| • <b>Teaching assistant</b> , NTHU Physics department, Taiwan<br><i>TA of General Physics B</i>  | Fall 2021   |
| • <b>Teaching assistant</b> , NTHU Physics department, Taiwan<br><i>TA of Introduction to Black Hole Astrophysics</i>  | Spring 2022 |
| • <b>Teaching assistant</b> , NTHU Physics department, Taiwan  | Spring 2022 |

*TA of Fundamental observational astronomy*

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| • <b>Lecturer</b> , NTHU Physics department, Taiwan  | Summer 2022 |
| <i>Lecturer of Taiwan astronomy observation network observer training camp</i>             |             |
| • <b>Teaching assistant</b> , NTHU Institute of Astronomy, Taiwan                          | Fall 2022   |
| <i>TA of Computational Astrophysics</i>  |             |
| • <b>Teaching assistant</b> , NTHU The center of teaching and learning development, Taiwan | Fall 2022   |
| <i>TA of MOOCS course “Supermassive black holes and active galaxies”</i>                   |             |

## UNDERGRADUATE ASTROPHYSICS LECTURES

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- **General Astronomy I (10610PHYS241000):** A+
- **General Astronomy II (10620PHYS242000):** A+
  - Final Project: Space Probes that visited Jupiter
- **Fundamentals of Observational Astronomy (10620PHYS391000):** A
  - Final Project: Analysis on variable star CSS J142443.3+043850
- **Introduction to Modern Cosmology (10720PHYS434000):** A+
  - Final Project: BAO and it's observation
- **Introduction to Astrophysics (10920PHYS433000):** A+
  - Presentation: The LYNX Space Telescope
- **Introduction to Black Hole Astrophysics (10920PHYS480000):** A+
  - Presentation: HR 6819 - A hierarchical triple system with BH?
  - Final Project: SAME - Surveying AGN Magnetic structure with Event horizon telescope (Research Proposal)

## GRADUATE ASTROPHYSICS LECTURES

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The first 3 digits of the course ID represent the year that the course was given. I graduated and entered the master program since year 110.

- **Observational Astronomy (10710ASTR610000):** A+
  - Final Project: Using intensity profile to search for structures around red giants
- **Star Formation (10810ASTR550000):** A
  - Final Project: Autobiography of HH-111
- **Cosmology (10810ASTR640000):** B+
  - Final Project: IRX- $\beta$  relation
- **Stellar Astrophysics (10820ASTR510000):** A+
- **Computational Astrophysics (10820ASTR660000):** A+
  - Final Project: Dust geometry effect on galaxy SED with TNG100 galaxies
- **Astro-ph (10910ASTR600600):** A+
- **Colloquium (10920ASTR592000):** A-
- **High Energy Astrophysics (11010ASTR635000):** A+
  - Midterm Presentation: Paper Report Connor et al. (2021)
  - Final Presentation: Relativistic Jets from AGN (paper report Blandford et al. 2019)
- **Frontier of Astrophysics Seminars I (11010ASTR600700):** A+
- **Astrophysical Radiative Processes (11020ASTR620000):** A+

- **Galactic Astronomy (11020ASTR530000): A+**  
– Final Presentation: Unveiling the nature of AGN bubbles with Lynx X-ray Observatory
- **Interstellar Medium (11020ASTR650000): A+**  
– Final Presentation: How does ISM model affect galaxy SED fitting?
- **Colloquium (11110ASTR591000): TBD**
- **Special Topic: Scientific Writing and Short Talks (11110PHYS597002): TBD**

## EXTRACURRICULAR ACTIVITIES

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| • <b>EASY Astronomy and Earth Science promotion team</b><br><i>Vice Coordinator and Chief Editor for FB, IG, Blogger and Patreon.</i><br><i>Cooperating with Science Monthly, Pansci and Mandarin Daily News.</i> | 2017 – Current |
| • Astronomy Club of University Union in Taiwan (ACUUT)<br><i>Academic Staff (2019 – 2020) / Supervisor (2021 – Current) /</i><br><i>Chief editor of science communication group (2021 – Current)</i>              | 2019 – Current |
| • NTHU Observatory<br><i>Observation operator (2023 – Current)</i>  | 2018 – Current |
| • NTHU Astronomy Club<br><i>Education officer (2018 – 2019) / Vice director (2019 – 2020)</i><br><i>Host of Astrophysics Study Group (2018 – 2020)</i>  | 2017 – Current |
| • ASIAA Astronomy on Tap<br><i>Staff</i>  | 2021 – Current |
| • ACUUT Camp of Leadership 2022<br><i>Staff</i>   | Summer 2021    |
| • ACUUT Workshop in Space technologies<br><i>Coordinator</i>  | July 2022      |
| • ACUUT Workshop in Astrophotography<br><i>Coordinator</i>  | February 2022  |
| • ACUUT Camp of Leadership 2021<br><i>Coordinator</i>   | Summer 2021    |
| • ACUUT 5th Summit<br><i>Director of Academic Group</i>   | Summer 2019    |
| • NTHU Astronomy Camp<br><i>Academic Staff</i>  | Summer 2018    |
| • NTHU IPS Multi-Domain Science Camp<br><i>Academic Staff</i>   | Summer 2018    |

## POPULAR SCIENCE / EDUCATIONAL PUBLICATIONS

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Note: Articles on *Science Monthly* are reviewed by anonymous, professor-level reviewers, while articles on *Pansci* are reviewed by their editors.

1. **Lin Yen-Hsing**, “Dark Energy spectroscopic instrument (DESI)”, *Science Monthly*, March 2023.
2. **Lin Yen-Hsing**, “The closest black hole: Gaia BH1”, *Pansci*, November 2022.
3. **Lin Yen-Hsing**, “The return of Falcon Heavy”, *Pansci*, November 2022.
4. **Lin Yen-Hsing**, “DART”, *Mandarin Daily News*, November 2022.

5. **Lin Yen-Hsing**, “SpaceX’s path for reusability”, Mandarin Daily News, August 2022.
6. **Lin Yen-Hsing**, “The science behind JWST’s first images”, Pansci, July 2022.
7. **Lin Yen-Hsing**, “The next stop: Uranus!”, Mandarin Daily News, June 2022.
8. Tiger Hsiao, **Lin Yen-Hsing**, “3D-DASH: The largest HST NIR survey”, Pansci, July 2022.
9. Chiang Ping-Cheng, **Lin Yen-Hsing**, “Atmospheric Corona”, Science Monthly, June 2022.
10. Tiger Hsiao, **Lin Yen-Hsing**, “The reason to look far: why astronomers are looking for the first generation galaxies”, Pansci, May 2022.
11. **Lin Yen-Hsing**, “Fermi Bubbles: The ultra hot remanent of SMBH jets”, Pansci, April 2022.
12. **Lin Yen-Hsing**, “Measuring the geometry of the universe: Euclid Space Telescope”, Science Monthly, April 2022.
13. **Lin Yen-Hsing**, “SMBH triggered Star Formation in Henize 2-10”, Pansci, March 2022.
14. **Lin Yen-Hsing**, “ISS and it’s successors”, Pansci, February 2022.
15. **Lin Yen-Hsing**, Huang Tzu-Chuan, “DART”, Science Monthly, December 2021.
16. **Lin Yen-Hsing**, “The Astro2020 Report”, Pansci, November 2021.
17. **Lin Yen-Hsing**, “JWST: Science Objectives”, Pansci, October 2021.
18. Chen Chi-Yun, **Lin Yen-Hsing**, “JWST: Launch sequence and orbit”, Pansci, October 2021.
19. Shao Ssu-Chi, **Lin Yen-Hsing**, “JWST: Overview”, Pansci, October 2021.
20. Chiang Ping-Cheng, **Lin Yen-Hsing**, “Your noon is not your noon: Sundial and Analemma”, Science Monthly, October 2021.
21. **Lin Yen-Hsing**, “Third year result from DES”, Science Monthly, August 2021.
22. **Lin Yen-Hsing**, Shao Ssu-Chi, “Hubble’s upgrade history”, Pansci, July 2021.
23. **Lin Yen-Hsing**, “Creating an universe in lab: Cosmological Simulations”, Science Monthly, May 2021
24. **Lin Yen-Hsing**, “The sky full of satellites”, Pansci, April 2021.
25. **Lin Yen-Hsing**, “Hunting the invisible monster: A non-accreting black hole in a triple star system”, Pansci, March 2021.
26. **Lin Yen-Hsing**, “Ambition of astronomers: The HabEx Space Telescope”, Science Monthly, March 2021
27. **Lin Yen-Hsing**, Huang Tzu-Chuan, “A billion mile journey: Hayabusa 2”, Pansci, January 2021
28. **Lin Yen-Hsing**, “The Roman Space Telescope”, Pansci, January 2021
29. **Lin Yen-Hsing**, “Ambition of astronomers: The LYNX Space Telescope”, Science Monthly, December 2020
30. Chang,Chiung-Yin, **Lin Yen-Hsing**, “Is the starry night stationary?”, Science Monthly, April 2020
31. **Lin Yen-Hsing**, “Sentinel under the night sky: Telescopes that protect the Earth”, Science Monthly, December 2019
32. Chen Tzu-Hsiang, Huang Tzu-Chuan, **Lin Yen-Hsing**, “The journey has just begun: What is INSIGHT doing on Mars?”, Science Monthly, August 2019
33. **EASY Team (Lin Yen-Hsing, Li,Yen-Ting, HCHS Astronomy Club 29<sup>th</sup>)**, “From the opposition of Mars to the transit of Venus: Secrets of the alignment between planets”, Science Monthly, January 2019
34. Cheng Miao-Ching, **Lin Yen-Hsing** et al. (2019), “Earth Science: Investigation and Implementation (Teacher’s book)”, Lungteng Cultural CO., LTD.

## RECENT INFORMAL SCIENCE TALKS

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The audience of my talks range from elementary school to graduated astrophysics students.

**1. Scientific Presentation: Oral, Poster and Pop-Science**

- 2023.02.12, NTHU Astronomy Club Astrophysics study group seminar

**2. AGN jets in Galaxy Clusters**

- 2023.02.12, EASY Chat Room

**3. AGN jets in Galaxy Clusters**

- 2023.02.12, NTHU IPS Winter Chat

**4. Astrophotography**

- 2023.02.08, NCU Star Story Astronomy Camp.

**5. Observation astronomy I**

- 2022.10.04, NTHU Astronomy Club Astrophysics study group lectures.

**6. Physical principles in observational astronomy**

- 2022.07.10, Malaysia Olympiad on Astronomy and Astrophysics 2022 guest lecture

**7. Radiative transfer**

- 2022.02.22, NTHU Astronomy Club Astrophysics study group lectures.

**8. Physics Principles behind Astrophotography**

- 2022.02.07, ACUUT mini lecture series on Astrophotography.

**9. Modelling cosmic-ray in galaxy clusters**

- 2022.01.15, NTHU IPS Winter Chat.

**10. Astrophysical Black Holes**

- 2021.12.28, NTHU Astronomy Club Astrophysics study group lectures.

**11. Universe in 0 and 1**

- 2021.12.26, EASY Online Talk.

**12. A new force in Taiwan's astronomy community:  
Astronomy Club Union of Universities of Taiwan (ACUUT)**

- 2021.11.27, NTHU Astronomy Club 50<sup>th</sup> anniversary.

**13. Summary of Astro2020**

- 2021.11.16, NTHU Astronomy Club Astrophysics study group lectures.

**14. Cosmological models**

- 2021.11.09, NTHU Astronomy Club Astrophysics study group lectures.

**15. Special and General Relativity**

- 2021.11.02, NTHU Astronomy Club Astrophysics study group lectures.

**16. Story of EASY and Science Communication**

- 2021.08.04, ACUUT: Astronomy Chat Room.

**17. Paper Review: Yang et al. 2019**

- 2021.07.20, NTHU Astronomy Club Astrophysics study group lectures.

**18. Popular Science Writing**

- 2021.07.20, HCHS/HGSH/CKSH Astronomy Club cadre training camp.

**19. Cosmology and Galaxy Evolution (LV. 3)**

- 2021.07.13, ACUUT Camp of leadership 2021.

20. **Cosmology and Galaxy Evolution (LV. 2)**
  - 2021.07.04, ACUUT Camp of leadership 2021.
21. **Cosmology and Galaxy Evolution (LV. 1)**
  - 2021.07.04, ACUUT Camp of leadership 2021.
22. **Fly by the king of planets**
  - 2021.06.27, EASY Online Talk.
23. **Telescopes that protect the Earth**
  - 2021.05.30, EASY Online Talk.
24. **The Kaleidoscope of Satellite Orbits**
  - 2021.05.19, HGSH Astronomy Club Club lectures.
25. **Astro-photography**
  - 2021.05.19, HGSH Astronomy Club Club lectures.
26. **Galaxy Evolution (Observational)**
  - 2021.05.04, NTHU Astronomy Club Astrophysics study group lectures.
27. **Galaxy Evolution (Theoretical)**
  - 2021.04.27, NTHU Astronomy Club Astrophysics study group lectures.
28. **Python and Linux: An astrophysical approach**
  - 2021.04.06, NTHU Astronomy Club Astrophysics study group lectures.
29. **Observatories Above the Sky: Introduction to Space Telescopes**
  - 2021.03.28, EASY Online Talk.
30. **Processing astro-photography images**
  - 2021.03.24, HGSH Astronomy Club Club lectures.
31. **The Kaleidoscope of Satellite Orbits**
  - 2021.03.09, Nanshan High School.
32. **The Union's Role in Scientific promotion of astronomy**
  - 2021.03.06, ACUUT annual meeting.
33. **The Story of counting stars: Power of Astrometry**
  - 2021.02.21, EASY Online Talk.
34. **Geometry effect on dust attenuation curves at high redshift / ASIAA summer student program**
  - 2021.01.16, IPS Winter Chat.
35. **The Kaleidoscope of Satellite Orbits**
  - 2020.12.27, EASY Online Talk.
36. **Interstellar Medium**
  - 2020.12.01, NTHU Astronomy Club Astrophysics study group lectures.
37. **Nobel Prize in Physics 2020**
  - 2020.11.29, EASY Online Talk.
38. **Modern cosmology / Stellar evolution / Exoplanet detection**
  - 2020.07.30, HCHS Earth Science Competition Team Training lectures.
39. **Telescopes that protect the Earth**
  - 2020.08.04, Neihu Parent-Child class.
40. **Distance Ladder**

- 2020.07.29, HCHS Earth Science Competition Team Training lectures.
- 41. **Modern Cosmology**
  - 2020.04.22, NTHU Astronomy Club lectures.
- 42. **Python: Errors and data analysis**
  - 2020.04.21, NTHU Astronomy Club Astrophysics study group lectures.
- 43. **Black hole Observations before EHT**
  - 2020.04.08, HGSH Astronomy Club Club lectures.
- 44. **Dust**
  - 2020.03.31, NTHU Astronomy Club Astrophysics study group lectures.
- 45. **Stars (I)**
  - 2020.03.10, NTHU Astronomy Club Astrophysics study group lectures.
- 46. **Processing astro-photography images**
  - 2020.03.04, HGSH Astronomy Club Club lectures.
- 47. **Fly pass the king of planets**
  - 2019.11.16, NTHU Astronomy Club lectures.
- 48. **Special relativity (I)**
  - 2019.10.29, NTHU Astronomy Club Astrophysics study group lectures.
- 49. **Distance Ladder**
  - 2019.10.01, NTHU Astronomy Club Astrophysics study group lectures.

This CV is created by modifying Doruk Çetin's Simple-CV template.  
Last update on March 27, 2023.