

Academic Staff Resume

Name: Chih-Hao Hsia
Title: Research Fellow
Space Science Institute

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Academic Qualification:

Ph.D. in Astronomy, Graduate Institute of Astronomy, National Central University, Taiwan, 2003–2006
Master in Astronomy, Graduate Institute of Astronomy, National Central University, Taiwan, 2001–2003
Bachelor in Mathematics, Department of Mathematics, National Central University, Taiwan, 1995–1999

Teaching Area

For graduate student:
Introduction to Modern Astronomy (Compulsory)

Research Area

Planetary Nebulae, Proto-Planetary Nebulae, and AGB Stars
OH/IR Masers
Star Formation and Young Stellar Objects
Exoplanets and Asteroids
Ultraviolet, Optical, Infrared, and Radio Astronomy
Chemical abundance and Interstellar Medium
Novae and Supernovae
Space Astronomical Chemistry

Working Experience

Visiting Assistant Professor at Space Science Institute, Macau University of Science and Technology, December 2015 – October 2016

Assistant Research Scientist at Shenzhen Institute of Research and Innovation, The University of Hong Kong, March 2014 – October 2016

Post-Doc at Department of Physics, The University of Hong Kong, October 2008 – October 2016

Academic Publication

Journal Articles:

1. **Hsia, C.-H.**, Ip, W.-H., & Li, J.-Z., "Evidence for a Binary Origin of the Young Planetary Nebula Hubble 12", 2006, *Astronomical Journal*, vol. 131, pp. 3040 - 3046
2. Kwok, S. & **Hsia, C.-H.**, "Multiple Coaxial Rings in the Bipolar Nebula Hubble 12", 2007, *Astronphysical Journal*, vol. 660, pp. 341 - 345
3. **Hsia, C.-H.**, & Li, J.-Z., "The H-alpha Halo Distribution of 10 Nearby Planetary Nebulae based on SHASSA Imaging Data", 2009, *Journal of Taipei Astronomical Museum*, vol. 7, pp. 9 - 23
4. Lin, Z.-Y., Lin, H.-C., Ye, Q.-Z., Lin, C.-S., Lara, L. M., Ip, W.-H., **Hsia, C.-H.**, Hsiao, H.-Y., & Lin, C.-H., "The Observation of Comet C/2007 N3 (Lulin) from SLT at Lulin Observatory", 2009, *Journal of Taipei Astronomical Museum*, vol. 7, pp. 1 - 8
5. **Hsia, C.-H.**, Kwok, S., Zhang, Y., Koning, N., & Volk, K., "An Optical-Infrared Study of the Young Multipolar Planetary Nebula NGC 6644", 2010, *Astronphysical Journal*, vol. 725, pp. 173 - 183
6. Kwok, S., Chong, S.-N., **Hsia, C.-H.**, Zhong, Y., & Koning, N. "Discovery of a Multipolar Structure with an Equatorial Disk in NGC 6072", 2010, *Astronphysical Journal*, vol. 708, pp. 93 - 100
7. Zhang, Y., **Hsia, C.-H.**, & Kwok, S. "Planetary nebulae detected in the Spitzer Space telescope GLIMPSE 3D Legacy Survey", 2012, *Astronphysical Journal*, vol. 745, pp. 59
8. Zhang, Y., **Hsia, C.-H.**, & Kwok, S. "Discovery of a Halo around the Helix nebula NGC 7293 in the WISE All-sky Survey", 2012, *Astronphysical Journal*, vol. 755, pp. 53
9. Zhang, Y., Fang, X., Chau, W., **Hsia, C.-H.**, Liu, X.-W., Kwok, S., & Koning, N., "[Fe III] Emission Lines in the Planetary Nebula NGC 2392", 2012, *Astronphysical Journal*, vol. 754, pp. 28
10. Yuan, J.-H., Li, J.-Z., Huang, Y.-F., **Hsia, C.-H.**, & Miao, J., "The Discovery of a Protostar Driving a Bipolar outflow based on the GLIMPSE Data", 2012, *Astronomy & Astronphysics*, vol. 540, pp. 95
11. Imai, H., Chong, S.-N., He, J.-H., Nakashima, J.-I., **Hsia, C.-H.**, Sakai, T., Deguchi, S., & Koning, N., "Extremely Strong CO13 J=3-2 Line in the "Water Fountain" IRAS 16342-3814: Evidence for the Hot-Bottom Burning", 2012, *Publications of the Astronomical Society of Japan* vol. 64 pp. 98
12. Fok, T. K. T., Nakashima, J.-I., Yung, B. H. K., **Hsia, C.-H.**, & Deguchi, S., "Maser Observations of Westerlund 1 and Comprehensive Considerations on Maser Properties of Red Supergiants Associated with Massive Clusters", 2012, *Astronphysical Journal*, vol. 760, pp. 65
13. **Hsia, C.-H.**, Chau, W., Zhang, Y., & Kwok, S., "Hubble Space Telescope Observations and Geometric Models of Compact Multipolar Planetary Nebulae", 2014, *Astronphysical Journal*, vol. 787, pp. 25

14. **Hsia, C.-H.**, & Zhang, Y., "Discovery of New Low-Excitation Planetary Nebulae", 2014, *Astronomy & Astrophysics*, vol. 563, pp. 63
15. Nakashima, J.-I., Ladeyschikov, D. A., Sobolev, A. M., Zhang, Y., **Hsia, C.-H.**, & Yung, B. H. K., "Wide Field CO Mapping in the Region of IRAS 19312+1950", 2016, *Astronomical Journal*, vol. 825, pp. 16
16. Yung, B. H. K., Nakashima, J.-I., **Hsia, C.-H.**, & Imai, H., "Do Water Fountain Jets really Indicate the Onset of the Morphological Metamorphosis of Circumstellar Envelopes?", 2016, accepted for publication in *Monthly Notices of the Royal Astronomical Society*
17. **Hsia, C.-H.**, Sadjadi, S., Zhang, Y., & Kwok, S., "The 6 μ m feature as a Tracer of Aliphatic Components of Interstellar carbonaceous Grains", 2016, in pressing, *Astronomical Journal*

Conference Papers:

1. Kwok, S., & **Hsia, C.-H.**, "Discovery of Multiple Coaxial Rings in the Bipolar Nebula Hb12", 2007, in *Proceedings of the AAS/AAPT Joint Meeting, American Astronomical Society Meeting*, 209, 156
2. **Hsia, C.-H.**, & Kwok, S., "A Sample of New Planetary Nebulae in the IPHAS and DSH Catalogue", 2012, in *Proceedings of the International Astronomical Union (IAU) Symposium. No. 283: an Eye to the Future*, 283, pp. 388 - 389
3. **Hsia, C.-H.**, & Kwok, S., "A Systematic Study of Young Multipolar Planetary Nebulae", 2012, in *Proceedings of the International Astronomical Union (IAU) Symposium. No. 283: an Eye to the Future*, 283, pp. 390 - 391
4. Zhang, Y., Kwok, S., **Hsia, C.-H.**, Nakasima, J., & Koning, N., "Planetary Nebulae Detected in the Spitzer Space Telescope GLIMPSE 3D Legacy", 2012, in *Proceedings of the International Astronomical Union (IAU) Symposium. No. 283: an Eye to the Future*, 283, pp. 528 - 529
5. Zhang, Y., Fang, X., Chau, W., Liu, X.-W., **Hsia, C.-H.**, & Kwok, S., "[Fe III] lines in the planetary nebula NGC 2392", 2012, in *Proceedings of the International Astronomical Union (IAU) Symposium. No. 283: an Eye to the Future*, 283, pp. 532 - 533
6. **Hsia, C.-H.**, Chau, W., & Kwok, S., "The Optical-Infrared Study and Geometric Model of Young Multipolar Planetary nebula -- IRAS 21282+5050", 2015, in *Proceedings of the 29th International Astronomical Union (IAU) Assembly Meeting*, 2250740

7. **Hsia, C.-H.**, Chau, W., Zhang, Y., & Kwok, S., "The Multiple Lobes and Geometric Model of Hubble 12: A Young Planetary Nebula with two pairs of H₂ Knots", 2015, in Proceedings of the 29th International Astronomical Union (IAU) Assembly Meeting, 2254433

8. **Hsia, C.-H.**, Kwok, S., Chau, W., & Zhang, Y., "Coaxial Rings and H₂ Knots in Hubble 12", 2016, in Proceedings of Journal of Physics Conference Series, vol 728, 072009

9. Yung, B. H. K., Nakashima, J.-I., Henkel, C. & **Hsia, C.-H.** "Identification of oxygen-rich late/post-asymptotic giant branch stars and water fountains via maser and infrared criteria", 2016, in Proceedings of Journal of Physics Conference Series, vol 728, 072005

Research Projects

1. The University of Hong Kong " **Small Project Funding of Research Grants Council**" , project no. 201007176028, 2010 - 2012

Professional Certification and Awards

1. The Award of the grants from University of Hong Kong " **Small Project Funding of Research Grants Council**" , project no. 201007176028, 2010 - 2012

2. **The Best Poster Award** of The Astronomical Society of the Republic of China (Taiwan), 2008

3. **The Second Prize of Taiwan astronomical sciences**, Taipei Astronomical Museum, 1998

4. **The Third Prize of Taiwan astronomical sciences**, Taipei Astronomical Museum, 1997

5. **The Fifth Prize of Taiwan astronomical sciences**, Taipei Astronomical Museum, 1996

Professional Society Membership

1. The Member, International Collaboration " PLANetary Nebula Binaries (**PLAN-B**)" , 2008 - present

2. The Referees, for few major peer-review journals including Astrophysical Journal (**ApJ**), Research in Astronomy and Astrophysics (**RAA**), and Astronomical Journal (**AJ**)
3. The Supervisors, for one undergraduate student and a research assistant
4. The Instructors, for three senior high schools in Taiwan