Yi-Kuan Chiang

CCAPP Fellow · The Ohio State University

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Employment

The Ohio State University — Columbus, OH, USA
Center for Cosmology and AstroParticle Physics Fellow — October 2019 — Present

Johns Hopkins University — Baltimore, MD, USA
Postdoctoral Fellow — October 2016 — October 2019

University of Tokyo — Tokyo, Japan
Japan Society for the Promotion of Science Postdoctoral Fellow — June 2016 — October 2016

Education

University of Texas at Austin — Austin, TX, USA
Ph.D. in Astronomy — 2011 — 2016

Thesis: "Galaxy Protoclusters as an Interface of Structure, Cluster, and Galaxy Formation"

Advisors: Karl Gebhardt & Roderik Overzier

National Tsing Hua University — Hsinchu, Taiwan
M.S. in Astronomy — 2007 — 2009

Thesis: "The Long-term Variability of the X-ray Sources in M82"

Advisor: Albert Kong

B.S. in Computer Science with Physics Minor — 2003 — 2007

Research Interests

Extragalactic Background Light, Galaxy Protocluster, Galaxy Evolution, Astrostatistics & informatics

Awards and Grants

Google Cloud Platform Research Credits Award ($30K)	2017 — present
NASA ADAP, "Rise and Fall of Dusty Star Formation in Protoclusters", (PI: Lee)	2018
Japan Society for the Promotion of Science (JSPS) Fellowship (¥2M)	2016
7 Different Awards for Academic Excellence at UT Austin ($42K Total)	2013 — 2016
Chandra X-ray Observatory GO Grant as PI ($25K)	2012
Taiwan Ministry of Education Study Abroad Scholarship ($32K)	2011

Community Service

Telescope Allocation Committee for HST and Subaru	2020 — present
Referee for ApJ and MNRAS	2014 — present

Telescope Time Awarded

1.	**Subaru/Gemini Time Exchange Program**, 2017A (as PI) "JWST High-z Pathfinder: 3D-HST Metal Poor Galaxies at z ~ 0.8"	**GMOS-N** 9.5 hrs
2.	**Gemini Observatory**, 2015B + 2016B (as PI) "Mapping out the Densest Structures in the COSMOS Field at z=2–3"	**GMOS-N+S** 61hrs in 2 cycles
3.	**Chandra X-ray Observatory**, AO11+ AO13 (as PI) "The X-Ray Evolution of Supernova 2004am"	**ACIS** 25 ks in 2 cycles
4.	**European Southern Observatory**, P93 + P95 (as Co-PI; PI: Overzier) "Rise of the Clusters: Galaxy Formation in the Densest Regions at z=2.5"	**KMOS** 32 hrs in 2 cycles

and successful Co-I programs with HST, ALMA, Subaru, and LBT

Student Advising

Michael Winfield 2020	Junior at Ohio State University Project: **"Clustering Redshift for WISE Sources with Self Organizing Map"**
Zhiyuan Song 2018	Senior at USTC in China, Now Graduate Student at UC Riverside Project: **"A Hybrid Galactic Dust Reddening Map Using HI and Distant Galaxies"**
Richard Seifert 2017	Senior at UT Austin, Now Graduate Student at UVA (Co-Supervised w C. Casey) Project: **"Submillimeter Stacking in Overdense Environments at z > 2"**

Teaching

Teaching Assistant, University of Texas at Austin (4 Astronomy Courses)	2011—2012
Teaching Assistant, National Tsing Hua University (3 Astronomy Courses)	2007—2008

Recent Colloquia, Seminars, and Conference Talks

Talks since March 2019 are listed

February 2020	CCAPP Seminar, The Ohio State University, USA
January 2020	Nuclear Particle Astrophysics Seminar, Yale University, USA
November 2019	Galaxies & Cosmology Seminar, Harvard University, USA
November 2019	Seminar, Massachusetts Institute of Technology, USA
November 2019	Seminar, University of Massachusetts Amherst, USA
September 2019	Star Formation/ISM Rendezvous, Princeton University, USA
September 2019	Low-Density Universe Lunch Seminar, Space Telescope Science Institute, USA
September 2019	KICC 10th Anniversary Symposium, University of Cambridge, UK
August 2019	Great Lakes Cosmology Workshop, Rochester Institute of Technology, USA
July 2019	L2S2 : Lines in the Large Scale Structure Conference, Marseille, France
June 2019	HotSci Talk Series, Space Telescope Science Institute, USA
March 2019	Seminar, Kavli IPMU, Japan
March 2019	Special Seminar, ASIAA, Taiwan
March 2019	Panchromatic Studies of Galaxy Clusters Conference, ASIAA, Taiwan

and over 60 other colloquia, seminars, and conference talks in over 10 countries

References

Brice Ménard	Johns Hopkins University	menard@jhu.edu
Eiichiro Komatsu	Max-Planck-Institut für Astrophysik	komatsu@mpa-garching.mpg.de
Chris Hirata	The Ohio State University	hirata.10@osu.edu
J. Xavier Prochaska	University of California, Santa Cruz	xavier@ucolick.org
Karl Gebhardt	University of Texas at Austin	gebhardt@astro.as.utexas.edu
Roderik Overzier	Observatorio Nacional	overzier@on.br
Masami Ouchi	University of Tokyo	ouchims@icrr.u-tokyo.ac.jp

Publications

1. **Chiang, Y.-K.**, Ménard, B., & Schiminovich, D. 2019, ApJ, 877, 150
   "Broadband Intensity Tomography: Spectral Tagging of the Cosmic UV Background"
2. **Chiang, Y.-K.** & Ménard, B. 2018, arXiv:1808.03294, ApJ, 870, 120
   "Extragalactic Imprints in Galactic Dust Maps"
3. **Chiang, Y.-K.**, Overzier, R. A., Gebhardt, K., & Henriques, B. 2017, ApJ, 844, L23
   "Galaxy Protoclusters as Drivers of Cosmic Star Formation History in the First 2 Gyr"
4. **Chiang, Y.-K.**, Overzier, R., Gebhardt, K., Finkelstein, S., Chiang, C.-T., & 10 coauthors 2015, ApJ, 808, 37
   "Surveying Galaxy Proto-clusters in Emission: A Large-scale Structure at z=2.44 and the Outlook for HETDEX"
5. **Chiang, Y.-K.**, Overzier, R., & Gebhardt, K. 2014, ApJ, 782, L3
   "Discovery of a Large Number of Candidate Protoclusters by ~15 Mpc-scale Galaxy Overdensities in COSMOS"
6. **Chiang, Y.-K.**, Overzier, R., & Gebhardt, K. 2013, ApJ, 779, 127
   "Ancient Light from Young Cosmic Cities: Physical and Observational Signatures of Galaxy Proto-clusters"
7. **Chiang, Y.-K.** & Kong, A. K. H. 2011, MNRAS, 414, 1329
   "The Long-term Variability of the X-ray Sources in M82"
8. Mukae, S., Ouchi, M., & 23 coauthors including **Chiang, Y.-K.** (ApJ, accepted)
   "3D Distribution Map of HI Gas and Galaxies Around an Enormous Lyα Nebula and Three QSOs at z = 2.3 Revealed by the HI Tomographic Mapping Technique"
9. Heap, S., Hull, T., Kendrick, S., Woodruff, B., Arenberg, J., Baes, M., Bezanson, R., Bianchi, L., Bowen, D., Cenko, B., **Chiang, Y.-K.**, & 49 coauthors 2019, BAAS, 51, 159
   "The Probe-class mission concept, Cosmic Evolution Through UV Surveys (CETUS)"
10. Kubo, M., Toshikawa, J., Kashikawa, N., **Chiang, Y.-K.**, & 10 coauthors 2019, ApJ, 887, 214
    "Planck Far-infrared Detection of Hyper Suprime-Cam Protoclusters at z~4"
11. Zavala, J., Casey, C., Scoville, N., Champagne, J., **Chiang, Y.-K.**, & 8 coauthors 2019, ApJ, 887, 183
    "On the Gas Content, Star Formation Efficiency, and Environmental Quenching of Massive Galaxies in Proto-Clusters at z~2.0−2.5"

12. Higuchi, R., Ouchi, M., Ono, Y., Shibuya, T., Toshikawa, J, Harikane, Y., Kojima, T, **Chiang, Y.-K.**, & 12 coauthors 2019, ApJ, 879, 28
"SILVERRUSH. VII. Subaru/HSC Identifications of 42 Protocluster Candidates at z~6–7 with the Spectroscopic Redshifts up to z=6.574: Implications for Cosmic Reionization"

13. Jiang, L., Wu, J., Bian, F., **Chiang, Y.-K.**, & 12 coauthors 2018, Nature Astronomy, 2, 962
"A Giant Protocluster of Galaxies at Redshift 5.7"

14. Uchiyama, H., Toshikawa, J., Kashikawa, N., Overzier, R., **Chiang, Y.-K.**, & 20 coauthors 2018, PASJ, 70, S32
"Luminous Quasars do not Live in the Most Overdense Regions of Galaxies at z~4"

15. Mukae, S., Ouchi, M., Kakiichi, K., Suzuki, N., Ono, Y., Cai, Z., Inoue, A., **Chiang, Y.-K.**, & 2 coauthors 2017, ApJ, 835, 281
"Cosmic Galaxy-IGM HI Relation at z~2–3 Probed in the COSMOS/UltraVISTA 1.6 Deg^2 Field"

16. Smolcic, V., Miettinen, O., Tomicic, N., Zamorani, G., Finoguenov, A., Lemaux, B. C., Aravena, M., Capak, P., **Chiang, Y.-K.**, & 14 coauthors 2017, A&A, 597, A4
"(Sub)millimetre Interferometric Imaging of a Sample of COSMOS/AzTEC Submillimetre Galaxies III. Environments"

17. Hung, C.-L., Casey, C., **Chiang, Y.-K.**, & 10 coauthors 2016, ApJ, 826, 130
"Large Scale Structure around a z=2.1 Cluster"

18. Hagen, A., Zeimann, G., Behrens, C., Ciardullo, R., Gebhardt, H., Gronwall, C., Bridge, J., Fox, D., Schneider, D., Trump, J., Blanc, G., **Chiang, Y.-K.**, & 5 coauthors 2016, ApJ, 817, 79
"HST ELGs at z~2: Comparing Physical Properties of Lyα and Optical Emission Line Selected Galaxies"

19. Rigby, E., Hatch, N., Röttgering, H., Sibthorpe, B., **Chiang, Y.-K.**, & 13 coauthors 2014, MNRAS, 437, 1882
"Searching for Large-scale Structures around High-redshift Radio Galaxies with Herschel"