

# LU SHEN

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## RESEARCH INTERESTS:

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- My research has particularly focused on the role of environments on galaxy evolution at moderate-to-high redshift. Specifically, the environmental effects on the properties of radio-emitting galaxies and those hosting Active Galactic Nuclei (AGN).
- I am working on various aspects of AGN feedback to host galaxies and to large-scale environments.

## EXPERTISE:

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- Radio imaging reduction, object detection, and analysis
- Far-Infrared imaging analysis
- Optical/NIR IFU data reduction and analysis
- Synthesizing data from multi-wavelength photometry
- Galaxy morphology analysis

## WORK

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### Postdoctoral researcher

September 2022 - now

Texas A & M University, College Station, Texas, United States;

### Postdoctoral researcher

September 2019 - August 2022

University of Science and Technology of China, Hefei, Anhui, China;

## EDUCATION

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### Ph.D., Physics

September 2014 - August 2019

University of California, Davis; Davis, CA

Advisor: Prof. Lori Lubin

### M.S., Physics

September 2014 - December 2015

University of California, Davis; Davis, CA

### B.S., Physics

September 2010 - June 2014

Xiamen University; Xiamen, CHINA

Graduated with First Class

### Exchange Student

September 2012 - June 2013

University of California, Santa Barbara; Goleta, CA

## FUNDING

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National Science Foundation for Young Scientists of China

Jan 1. 2021

University of Science and Technology of China Fellowship

Jan 1. 2021

## INVITED TALKS

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<b>Shanghai Observatory</b> <i>Seminar</i>	Dec. 13 2021
<b>Nanjing University</b> <i>Seminar</i>	Dec. 7 2021
<b>Harvard CfA</b> <i>Galaxy Cluster Group Meeting</i>	Mar. 9 2021
<b>Chinese Academy of Sciences South America Center for Astronomy</b> <i>Seminar</i>	Dec 22 2020
<b>Nanjing University</b> <i>Colloquium</i>	Sept. 27 2020
<b>KIAA-Peking University</b> <i>Colloquium</i>	Jun. 19 2019
<b>University of Science and Technology of China</b> <i>Colloquium</i>	Jun 18. 2019

## CONFERENCES AND WORKSHOPS

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<b>Galaxy Cluster Formation II Workshop</b> <i>A Poster was presented.</i>	Jun. 14 - Jun. 18 2021 <i>Virtual</i>
<b>Galaxies: Star formation and nuclei activity</b> <i>A short talk was given.</i>	Dec. 2 - Dec. 6 2020 <i>Suzhou, China</i>
<b>Protoclusters: galaxies in confinement</b> <i>A Poster was presented.</i>	Aug. 31 - Sept. 4, 2020 <i>Virtual</i>
<b>Chinese Astronomical Society Meeting</b> <i>A talk was given.</i>	Oct. 14 2020 <i>Virtual</i>
<b>Galaxies: Star formation and nuclei activity</b> <i>A short talk was given.</i>	Nov.26 - Nov. 28 2019 <i>Nanjing, China</i>
<b>2019 TMT Science Forum</b> <i>A talk was given.</i>	Nov. 4 - Nov. 6, 2019 <i>Xiamen, China</i>
<b>2018 TMT Science Forum</b> <i>A poster was presented.</i>	Dec. 10 - Dec. 12 2018 <i>Pasadena, USA</i>
<b>2018 TMT Early-Career Workshop</b> <i>Participate</i>	Dec. 2 - Dec. 9 2018 <i>Pasadena, USA</i>
<b>2017 TMT Future Leaders Workshop</b> <i>Participate</i>	Aug. 21 - Aug. 30 2017 <i>Santa Cruz, USA</i>
<b>2017 ISEE Professional Development Program</b> <i>Participate</i>	Mar. 2017 - Aug. 2017 <i>Santa Cruz, USA</i>
<b>Preparing TMT Future Leaders</b> <i>Participate</i>	Dec. 3 - Dec. 7 2016 <i>Hilo, USA</i>
<b>15th Synthesis Imaging Workshop</b> <i>Participate</i>	Jun. 1 - Jun. 8 2016 <i>New Mexico, USA</i>
<b>Rudolph Minkowski Observational Astronomy Workshop</b> <i>Participate</i>	Oct. 15 - Oct. 19 2015 <i>Lick Observatory, USA</i>

## **OBSERVATION**

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- MOSFIRE/Keck, DEIMOS/Keck
- MOIRCS/Subaru telescope
- CWI/Hale Telescope at Palomar Observatory

## **SKILL**

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- Most experienced in Python
- Proficient in CASA and AIPS for interferometry data reduction and analysis
- Proficient in GALFIT and statmorph for galaxy morphology measurements
- Working knowledge of UNIX, IDL, C++, GitHub

## **TEACHING AND OUTREACH**

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### **Teaching Assistant**

Sept. 2014 - Sept 2017

- AST 10G - Introduction to Stars, Galaxies, and the Universe
- AST 10S - Astronomy of the Solar System
- PHYS 10G - Introduction to Stars, Galaxies, black holes, space time, and relativity
- PHYS 219A - Statistical Mechanics
- 9B Lab - Classical Physics

## BIBLIOGRAPHY

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The ADS library link for all Lu Shen's publications.

### **First Author:**

CEERS: Spatially Resolved UV and mid-IR Star Formation in Galaxies at  $0.2 < z < 2.5$ : The Picture from the Hubble and James Webb Space Telescopes

Submitted

*Shen, L, Papovich, C; Yang, G; Matharu, J; Wang, X; Magnelli, B; Elbaz, D; Jogee, S, the CEERS Collaboration and UVCANDELS Collaboration*

The ALPINE-ALMA [CII] survey: The infrared-radio correlation and AGN fraction of star-forming galaxies at  $z \sim 4.4 - 5.9$

2022, ApJ, 935, 177S

*Shen, L, Lemaux, B. C, Lubin, L. M., Liu, G, Béthermin, M., Boquien, M., Cucciati, O, Le Fèvre, O., Talia, M., Vergani, D., Zamorani, G, Faisst, A. L., Ginolfi, M., Gruppioni, C., Jones, G., Bardelli, S., Hathi, N., Koekemoer, A. M., Romano, M., Zucca, E., Fang, W., Forrest, B., Gal, G., Hung, D., Shah, E. A., Staab, P., Vanderhoof, B.*

Implications of the Environments of Radio-detected AGN in a Complex Proto-structure at  $z \sim 3.3$

2021, ApJ, 912, 60S

*Shen, L, Lemaux, B. C, Lubin, L. M., Cucciati, O, Le Fèvre, O, Liu, G, Fang, W, Pelliccia, D, Tomczak, A, McKean, J, Miller, N. A, Fasnacht, C. D. D, Gal, R, Hung, Hathi, N, Bardelli, S, Vergani, D, Zucca E*

Extended Radio AGN at  $z \sim 1$  in the ORELSE survey: The confining effect of dense environments

2020, ApJ, 902, 101S

*Shen, L, Liu, G, Zhang, M, Lemaux, B. C, Lubin, L. M., Pelliccia, D, Moravec, E, Golden-Marx, E, Zhou, H, Fang, W, Tomczak, A, McKean, J, Miller, N. A, Fasnacht, C. D., Wu, P, Kocevski, D, Gal, R, Hung, D, Squires, G. K.*

The Properties of Radio and Mid-infrared Detected Galaxies and the Effect of Environment on the Co-evolution of AGN and Star Formation at  $z \sim 1$

2020, MNRAS, 494, 5374

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*Shen, L., Lemaux, B. C., Lubin, L. M., McKean J., Miller. N. A., Pelliccia, D., Fasnacht, C. D., Tomczak, A. R., Wu, P.-F., Kocevski, D., Gal, R. R., Hung, D. and Squires, G. K.*

Possible Evidence of the Radio AGN Quenching of Neighboring Galaxies at  $z \sim 1$

2019, MNRAS, 484, 2433S

*Shen, L., Tomczak, A. R., Lemaux, B. C., Pelliccia, D, Lubin, L. M., Miller. N. A., Fasnacht, C. D., Becker, R. H., Gal, R. R., Wu, P.-F., Squires, G. K.*

The Properties of Radio Galaxies and the Effect of Environment in Large Scale Structures at  $z \sim 1$

2017, MNRAS, 472, 998

*Shen, L., Miller, N. A., Lemaux, B. C., Tomczak, A. R., Lubin, L. M., Rumbaugh, N., Fasnacht, C. D., Becker, R. H., Gal, R. R., Wu, P.-F., and Squires, G. K.*

### **Coauthor:**

Evidence for quasar fast outflows being accelerated at the scale of tens of parsecs

He, Z et al. 2022, SciA, 8, 3291H

The VIMOS Ultra Deep Survey: The Reversal of the Star Formation Rate – Density Relation at  $2 < z < 5$   
Lemaux, B. C. et al. 2022, A&A, 662A, 33L

B2 0003+38A: A Classical Flat-spectrum Radio Quasar Hosted by a Rotation-dominated Galaxy with a Peculiar Massive Outflow  
Zhao, Q. et al. 2021, ApJ, 913, 111Z

An optical observational cluster mass function at  $z \sim 1$  with the ORELSE survey  
Hung, D. et al. 2021, MNRAS, 502, 3942H

The High-redshift Clusters Occupied by Bent Radio AGN (COBRA) Survey: Radio Source Properties  
Golden-Marx et al. 2021, ApJ, 907, 65G

Effects of Stellar Feedback on Stellar and Gas Kinematics of Star-forming Galaxies at  $0.6 < z < 1.0$   
Pelliccia, D. et al. 2020, ApJ, 896L, 26P

Establishing a New Technique for Discovering Large-Scale Structure Using the ORELSE Survey  
Hung, D. et al. 2020, MNRAS, 491, 5524

Persistence of the Color-Density Relation and Efficient Environmental Quenching to  $z \sim 1.4$   
Lemaux, B. C et al. 2019, MNRAS, 490, 1231

Conditional Quenching: A detailed look at the SFR-Density Relation at  $z \sim 0.9$  from ORELSE  
Tomczak, A. R. et al. 2019, MNRAS, 484, 4695

Searching for environmental effects on galaxy kinematics in groups and clusters at  $z \sim 1$  from the ORELSE survey  
Pelliccia, D. et al. 2019, MNRAS.482.3514

Evaluating Tests of Virialization and Substructure Using Galaxy Clusters in the ORELSE Survey  
Rumbaugh, N. et al. 2018, MNRAS, 478, 1403

Similar Scaling Relations for the Gas Content of Galaxies Across Environments to  $z \sim 3.5$   
Darvish, B. et al. 2018, ApJ, 860, 111D

Glimpsing the Imprint of Local Environment on the Galaxy Stellar Mass Function  
Tomczak, A. R. et al. 2017, MNRAS, 472, 3512

Suppressed Star Formation by a Merging Cluster System  
Mansheim, A. S. et al. 2017, MNRAS, 469, 20

X-Ray Emitting Active Galactic Nuclei from  $z = 0.6-1.3$  in the Intermediate and High-Density Environments of the ORELSE Survey  
Rumbaugh, N. et al. 2017, MNRAS, 466, 496