

Yiqing Song (宋一清)

Astronomy PhD candidate, University of Virginia

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RESEARCH INTEREST

(Ultra-)luminous Infrared Galaxies; Galaxy interaction and mergers; Galaxy Evolution; Extragalactic star formation & ISM; AGN-starburst connection; Radio interferometry; Multi-wavelength analysis.

Current Collaboration: Great Observatories All-sky LIRG Survey (GOALS), Dense Extragalactic GBT+Argus Survey (DEGAS)

EDUCATION

University of Virginia

Ph.D. in Astronomy, Advisor: Prof. Aaron Evans

"Star-forming Properties of local Luminous Infrared Galaxies at 100pc Scales"

Charlottesville, USA

2018–August 2022 (expected)

University of Virginia

M.S. in Astronomy

Charlottesville, USA

2016–2018

University of California, Los Angeles

B.S. in Physics, *Cum Laude*

Los Angeles, USA

2012–2016

RESEARCH POSITIONS

National Radio Astronomy Observatory

Grote Reber Doctoral Fellow, Advisor: Dr. Aaron S. Evans

Charlottesville, USA

Jan 2021–Aug 2022

National Radio Astronomy Observatory

Summer Graduate Research Assistant, Advisor: Dr. Aaron S. Evans

Charlottesville, USA

Summer 2017, 2018, 2020

University of California, Los Angeles

Undergraduate Research Assistant, Advisor: Dr. Jean L. Turner

Los Angeles, USA

Summer 2014 - Fall 2015

PUBLICATIONS

- [1] J. McKinney, L. Armus, A. Pope, T. Diaz-Santos, V. Charmandaris, H. Inami, **Y. Song**, and A. Evans, "Regulating Star Formation in Nearby Dusty Galaxies: Low Photoelectric Efficiencies in the Most Compact Systems", *arXiv e-prints*, arXiv:2101.01182, Jan. 2021.
- [2] **Y. Song**, S. T. Linden, A. S. Evans, L. Barcos-Muñoz, and E. J. Murphy, "Characterizing circumnuclear starbursts in the local universe with the VLA", *IAU Symposium*, vol. 359, pp. 462–463, Jan. 2021.
- [3] R. Herrero-Illana, G. C. Privon, A. S. Evans, T. Daz-Santos, M. Á. Pérez-Torres, V. U. A. Alberdi, K. Iwasawa, L. Armus, S. Aalto, J. Mazzarella, J. Chu, D. B. Sanders, L. Barcos-Muñoz, V. Charmandaris, S. T. Linden, I. Yoon, D. T. Frayer, H. Inami, D. -C. Kim, H. J. Borish, J. Conway, E. J. Murphy, **Y. Song**, S. Stierwalt, and J. Surace, "Molecular gas and dust properties of galaxies from the Great Observatories All-sky LIRG Survey", *A&A*, vol. 628, A71, Aug. 2019.

- [4] S. T. Linden, **Y. Song**, A. S. Evans, E. J. Murphy, L. Armus, L. Barcos-Muñoz, K. Larson, T. Daz-Santos, G. C. Privon, J. Howell, J. A. Surace, V. Charmandaris, V. U, A. M. Medling, J. Chu, and E. Momjian, “A Very Large Array Survey of Luminous Extranuclear Star-forming Regions in Luminous Infrared Galaxies in GOALS”, *ApJ*, vol. 881, no. 1, 70, Aug. 2019.

SELECT AWARDED PROPOSALS

VLA: High Resolution Imaging of Obscured Star Formation in Luminous Infrared Galaxies
(20B-313, PI: **Y. Song**, Priority A, 1.5h)

VLA: Mapping the 33 GHz Star-forming Structures in Local LIRGs on GMC scales
(20A-401, PI: **Y. Song**, Priority A, 35.85h)

ALMA: Mapping the Ionizing Photon Rates from Luminous Starburst Galaxies in the local Universe
(2019.1.01190.S, PI: S. Linden, 12.7h)

ALMA: An ALMA CO(2-1) ACA Survey of Luminous Infrared Galaxies in GOALS
(2019.2.00037.S, PI: A. Evans, 133.2h)

JWST: Feedback around Supermassive Black Holes in Dusty Nuclei
(ID:1717, PI: V. U, 27.6h)

NuSTAR: Gazing into the inferno: Embedded AGN in local ULIRGs
(ID:7153, PI: G. Privon, 180ks)

TEACHING

Graduate Teaching Liason at UVa Center for Teaching Excellence Aug 2019–Aug 2020
participate in guided reading and discussion on inclusive teaching pedagogy, develop inclusive teaching resources and workshop for GTAs, under the supervision of Dr. Adriana Streifer.

Instructor of Record at UVa Department of Astronomy Summer 2019
plan and present daily lectures, host office hours, design and grade weekly projects, quizzes, extra-credit assignments and final exams for ASTR1220: Star, Galaxies and the Universe.

Head Teaching Assistant at UVa Department of Astronomy Fall 2017–Spring 2018
make TA assignment, host new TA orientation, handle TA or student complaints.

Teaching Assistant at UVa Department of Astronomy Fall 2016–Spring 2018
teach and grade night labs, grade assignments and exams, proctor exams, host office hours and review sessions for multiple entry level astronomy courses.

MENTORING

- Graduate Mentor for Astronomy Mentoring Program at UVa Astronomy Fall 2017 –current
Meet with pre-assigned undergraduate mentees on monthly basis, provide resource or help on grad school application, coursework and coding tasks for research.
- Graduate mentor for undergraduate research assistants at NRAO and UVa
Provide assistance on coding tasks in Python and CASA, write sample scripts, help answer research questions and prepare presentations, participate in research meetings.
 - William Meynardie (University of Virginia) Fall 2020–current
Resolved IR properties of GOALS galaxies

- Savannah Wood (University of Memphis), NRAO NAC Program Summer 2020
Multiwavelength Analysis of NGC 5331 (presented at AAS, 2021)
- Adrienne Hembrick (Virginia Commonwealth University), NRAO NAC Program Summer 2019
The Properties of Optically-Visible Star Clusters in Luminous Infrared Galaxy Mergers (presented at AAS, 2020)

OUTREACH AND DEPARTMENTAL SERVICE

- Member of Dark Skies, Bright Kids outreach group, UVa 2016–Current
help plan and volunteer at outreach events including the annual Central Virginia Star Party, analyze collected data from astronomy clubs and summer camps including Draw A Scientist Test, and daily volunteer responses, help write funding proposals.
- Graduate Representative on the Diversity, Equity & Inclusion Committee, UVa 2020–Current
organize workshop on gender pronoun and allyship, plan all-department DEI meetings, help with graduate program restructuring, organize new mentoring groups within the department.
- Graduate Member on the Graduate - Undergraduate Committee, UVa 2019–Current
organize the Astronomy Mentoring Program, maintain undergraduate research database, organize workshops/panels on graduate school application and annual undergraduate research symposium.
- Public Night Coordinator, UVa 2018–2019
coordinate graduate volunteers for bi-monthly McCormick Observatory Public Nights, help organize and assist volunteers at bi-annual Fan Mountain Public Night events.
- Outreach Assistant, UCLA 2015–2016
design and build demos for Astronomy Live! outreach program
- Public Night Telescope Operator, UCLA 2014–2016
assist with weekly public telescope viewings.

PROFESSIONAL EXPERIENCES

- Contributed Talk:** “Extreme Nuclear Star Formation in local U/LIRGs” March 2021
Clash of the Titans Galaxy Merger Workshop, Lorentz Center, Leiden, NL (virtual)
- Poster:** “Characterizing Circumnuclear Starbursts in the local Universe with the VLA” March 2020
IAUS359: Galaxy Evolution & Feedback across Different Environments, Bento-Gonçalves, Brazil
- Poster:** “Unravelling the Radio Properties of Circumnuclear Starburst in the Nearby Universe” June 2019
Radio/Millimeter Astrophysical Frontiers in the Next Decade, Charlottesville, USA
- Public Talk:** “Eyes of Astronomers” July 2018
McCormick Observatory Public Night

Participation:

16th Synthesis Imaging Workshop (Socorro, USA, 2018), ISM2021 (virtual, Beirut, Lebanon, 2021), Multi-object Spectroscopy Workshop (virtual, Baltimore, USA, 2021), Astrostatistics Summer School (virtual, State Park, USA, 2021), International ISM summer school (virtual, 2021)

SKILLS

On-site/remote observing: Apache Point Observatory, Green Bank Telescope (ARGUS)
Programming & Softwares: Python, CASA, L^AT_EX, Git, Ruby, HTML5, C++, Markdown, R
Languages: Mandarin (native), English (fluent), German (basic), Japanese (basic)