

Sreevani Jarugula

Curriculum Vitae

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Education

PhD in Astronomy, University of Illinois, Urbana Champaign, USA, 2015 - present.

Integrated B.S.-M.S., Indian Institute of Science Education and Research, Pune, India, 2010 - 2015.

Research Experience

Characterizing the physical properties of star-forming galaxy at $z = 6.9$, March 2019 - Present.

Advisor: Prof. Joaquin Vieira

- Analyzing ALMA observations of resolved CO emission from a gravitationally lensed dusty star-forming galaxy at $z = 6.9$. We will perform lens modeling and radiative transfer modeling to understand the intrinsic physical properties of this high redshift galaxy.

Resolved Water Emission from high redshift, Fall 2016 - February 2019.

Advisor: Prof. Joaquin Vieira

- Analyzed ALMA observations of resolved water emission from three gravitationally lensed sub-millimeter galaxies selected from the South Pole Telescope survey (SPT-SMGs) at $z \sim 3$. We present an empirical correlation between water luminosity and far-infrared luminosity at kilo-parsec scales.

Resolved radio emission from SPT-SMGs, Fall 2016.

Advisor: Prof. Joaquin Vieira

- Analyzed ATCA observations of resolved radio emission from three radio bright SPT-SMGs.

Far Infrared Radio Correlation, Spring 2016.

Advisor: Prof. Joaquin Vieira

- Analyzed radio emission from ~ 60 SPT-SMGs using ATCA observations. We studied the far-infrared radio correlation and its evolution with redshift

Diffuse Radio Emission in Galaxy Cluster A1795, Fall 2014 - Summer 2015.

Advisor: Prof. K.S.Dwarakanath

- Analyzed GMRT observations on low frequency radio emission from the galaxy cluster Abell 1795. We studied the magnetic field strength and relativistic electron energy of the Brightest Cluster Galaxy.

Publications

- **Source Structure and Molecular Gas Properties from High-resolution CO Imaging of SPT-selected Dusty Star-forming Galaxies**

The Astrophysical Journal, Volume 873, Issue 1, article id. 50, 15 pp. (2019)

Dong, Chenxing; Spilker, Justin S.; Gonzalez, Anthony H.; Apostolovski, Yordanka; Aravena, Manuel; Bethermin, Matthieu; Chapman, Scott C.; Chen, Chian-Chou; Hayward, Christopher C.; Hezaveh, Yashar D.; Litke, Katrina C.; Ma, Jingzhe; Marrone, Daniel P.; Morningstar, Warren R.; Phadke, Kedar A.; Reuter, Cassie A.; **Sreevani, Jarugula**; Stark, Antony A.; Vieira, Joaquin D.; Weiss, Axel

- **Spatially Resolved [CII] Emission in SPT0346-52: A Hyper-starburst Galaxy Merger at $z \sim 5.7$**
The Astrophysical Journal, Volume 870, Issue 2, article id. 80, 13 pp. (2019)
 Litke, Katrina C.; Marrone, Daniel P.; Spilker, Justin S.; Aravena, Manuel; Bethermin, Matthieu; Chapman, Scott; Chen, Chian-Chou; de Breuck, Carlos; Dong, Chenxing; Gonzalez, Anthony; Greve, Thomas R.; Hayward, Christopher C.; Hezaveh, Yashar; **Jarugula, Sreevani**; Ma, Jingzhe; Morningstar, Warren; Narayanan, Desika; Phadke, Kedar; Reuter, Cassie; Vieira, Joaquin; Weiss, Axel

- **Fast molecular outflow from a dusty star-forming galaxy in the early Universe**
Science, Volume 361, Issue 6406, pp. 1016-1019 (2018)
 Spilker, J. S.; Aravena, M.; Bethermin, M.; Chapman, S. C.; Chen, C.-C.; Cunningham, D. J. M.; De Breuck, C.; Dong, C.; Gonzalez, A. H.; Hayward, C. C.; Hezaveh, Y. D.; Litke, K. C.; Ma, J.; Malkan, M.; Marrone, D. P.; Miller, T. B.; Morningstar, W. R.; Narayanan, D.; Phadke, K. A.; **Sreevani, J.**; Stark, A. A.; Vieira, J. D.; Weiss, A.

- **A massive core for a cluster of galaxies at a redshift of 4.3**
Nature, Volume 556, Issue 7702, p.469-472 (2018)
 Miller, T. B.; Chapman, S. C.; Aravena, M.; Ashby, M. L. N.; Hayward, C. C.; Vieira, J. D.; Weiss, A.; Babul, A.; Bethermin, M.; Bradford, C. M.; Brodwin, M.; Carlstrom, J. E.; Chen, Chian-Chou; Cunningham, D. J. M.; De Breuck, C.; Gonzalez, A. H.; Greve, T. R.; Harnett, J.; Hezaveh, Y.; Lacaille, K.; Litke, K. C.; Ma, J.; Malkan, M.; Marrone, D. P.; Morningstar, W.; Murphy, E. J.; Narayanan, D.; Pass, E.; Perry, R.; Phadke, K. A.; Rennehan, D.; Rotermund, K. M.; Simpson, J.; Spilker, J. S.; **Sreevani, J.**; Stark, A. A.; Strandet, M. L.; Strom, A. L.

- **Galaxy growth in a massive halo in the first billion years of cosmic history**
Nature, Volume 553, Issue 7686, pp. 51-54 (2018)
 Marrone, D. P.; Spilker, J. S.; Hayward, C. C.; Vieira, J. D.; Aravena, M.; Ashby, M. L. N.; Bayliss, M. B.; Bethermin, M.; Brodwin, M.; Bothwell, M. S.; Carlstrom, J. E.; Chapman, S. C.; Chen, Chian-Chou; Crawford, T. M.; Cunningham, D. J. M.; De Breuck, C.; Fassnacht, C. D.; Gonzalez, A. H.; Greve, T. R.; Hezaveh, Y. D.; Lacaille, K.; Litke, K. C.; Lower, S.; Ma, J.; Malkan, M.; Miller, T. B.; Morningstar, W. R.; Murphy, E. J.; Narayanan, D.; Phadke, K. A.; Rotermund, K. M.; **Sreevani, J.**; Stalder, B.; Stark, A. A.; Strandet, M. L.; Tang, M.; Weiss, A.

- **ISM properties of a Massive Dusty Star-Forming Galaxy discovered at $z \sim 7$**
The Astrophysical Journal Letters, Volume 842, Issue 2, article id. L15, 6 pp. (2017)
 Strandet, M. L.; Weiss, A.; De Breuck, C.; Marrone, D. P.; Vieira, J. D.; Aravena, M.; Ashby, M. L. N.; Bethermin, M.; Bothwell, M. S.; Bradford, C. M.; Carlstrom, J. E.; Chapman, S. C.; Cunningham, D. J. M.; Chen, Chian-Chou; Fassnacht, C. D.; Gonzalez, A. H.; Greve, T. R.; Gullberg, B.; Hayward, C. C.; Hezaveh, Y.; Litke, K.; Ma, J.; Malkan, M.; Menten, K. M.; Miller, T.; Murphy, E. J.; Narayanan, D.; Phadke, K. A.; Rotermund, K. M.; Spilker, J. S.; **Sreevani, J.**

- **SPT0346-52: Negligible AGN Activity in a Compact, Hyper-starburst Galaxy at $z = 5.7$**
The Astrophysical Journal, Volume 832, Issue 2, article id. 114, 7 pp. (2016)
 Ma, Jingzhe; Gonzalez, Anthony. H.; Vieira, J. D.; Aravena, M.; Ashby, M. L. N.; Bethermin, M.; Bothwell, M. S.; Brandt, W. N.; de Breuck, C.; Carlstrom, J. E.; Chapman, S. C.; Gullberg, B.; Hezaveh, Y.; Litke, K.; Malkan, M.; Marrone, D. P.; McDonald, M.; Murphy, E. J.; Spilker, J. S.; **Sreevani, J.**; Stark, A. A.; Strandet, M.; Wang, S. X.

Contributed Talks/ Posters

- **Poster**, Astrophysical Frontiers in the Next Decade and Beyond, Portland, June 2018.
 Water Emission from High Redshift SPT SMGs
- **Poster**, The Origin of Galaxies, Stars, and Planets in the era of ALMA, Caltech, November 2017.
 Water Emission from High Redshift SPT SMGs
- **Contributed Talk**, International Symposium on Molecular Spectroscopy, University of Illinois, June 2017.
 ALMA Observations of Water Emission from Early Universe

Conferences/ Workshops attended

- **Astrophysical Frontiers in the Next Decade and Beyond**, Portland, USA , June 2018.
- **The Origin of Galaxies, stars, and Planets in the era of ALMA**, Caltech, USA , November 2017.
- **International Symposium on Molecular Spectroscopy**, University of Illinois, USA , June 2017.
- **Astrostatistics Summer school**, Penn State, USA, June 2016.
- **Synthesis Imaging Workshop**, Socorro, USA, June 2015.
- **Advanced Radio Imaging Workshop**, National Centre for Radio Astrophysics, India, September 2014.

Awards and Grants

- ALMA NRAO Student Observing Support (2018)
- Recipient of Innovation in Science Pursuit for Inspired Research (INSPIRE) Scholarship awarded by Department of Science and Technology, India (2010-2015)

Teaching Experience

Mentor to Undergraduates - University of Illinois

- Research mentor: Sidney Lower (2017)
- Women in Astronomy Graduate mentor: Emily NG (2017)

Teaching Assistant - University of Illinois

- Introduction to Classical Mechanics PHY211, Fall 2015 : Lead discussion sessions.
- Astronomical Techniques ASTR414, Spring 2016 and 2017 : Gave a lecture on Radio Interferometry.

Other Experiences

- Assistant session chair for 72nd International Symposium on Molecular Spectroscopy, University of Illinois, June 2017.

Computer skills

- Operating systems : Windows, UNIX/LINUX, Mac OS.
- Basic Programming : Python, Fortran, Awk
- General Softwares : GNUplot, LaTeX, MS office
- Astronomy Softwares : Astronomical Image Processing System (AIPS), Common Astronomy Software Applications (CASA), DS9, ALADIN and TOPCAT

Service, Outreach & other Activities

- **Journal Club host**, University of Illinois, Fall 2017, Spring 2018.
Duties include organizing journal club talks
- **Women in Astronomy Coffee Coordinator**, University of Illinois, Fall 2017, Spring 2018.
Duties include organizing coffee sessions with colloquium speakers.
- **Urbana Public Library Eclipse event**, Urbana, Illinois, July 2017.
Helped preschool students to make a pinhole camera for viewing solar eclipse.
- **Girls Engaged in Math and Sciences (GEMS) summer camp**, University of Illinois, June 2017.
Helped in organizing the camp which is aimed at middle and high school girls. Gave a lecture and led a lab session on the citizen science project, Planet Hunters.
- **Eclipse Teacher workshop**, Parkland College, Illinois, June 2017.
Demonstrated to teachers how to use and make a pinhole camera and answered questions about eclipse.
- **Science at the Market**, Urbana, Illinois, June 2017.
Outreach at the local farmer's market by setting up telescope for solar observations and promoting solar eclipse.
- **Urbana after school programme**, Urbana, Illinois, 2016 - Present.
Visited schools in Urbana to demonstrate and engage elementary and middle school students in hands-on astronomy activities.