

# AKSHAY SURESH

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## EDUCATION

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Ph.D. (Astronomy), Cornell University	08/2017 – 06/2023
MS (Astronomy), Cornell University	08/2017 – 12/2019
BS–MS (Physics) Dual Degree with Distinction, IISER Pune	08/2012 – 05/2017

## WORK EXPERIENCE

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Graduate Research and Teaching Assistant at Cornell University	08/2017 – 06/2023
Adviser: James M. Cordes	
Ph.D. thesis: <i>Radio Transient Searches from Millisecond to Hour-long Timescales</i>	

Machine Learning Researcher, Frontier Development Lab USA	06/2022 – 08/2022
<i>Climate Adaptation: Geomechanics for CO<sub>2</sub> Sequestration</i>	

Visiting Student Researcher at UC Berkeley	09/2021 – 06/2022
Hosts: Vishal Gajjar & Andrew P. V. Siemion	

Masters Thesis Research Student at NCRA–TIFR, Pune	05/2016 – 05/2017
Adviser: Divya Oberoi	
<b>MS thesis:</b> <i>Investigation of Small Scale Weak Solar Emissions at Low Radio Frequencies</i>	

Undergraduate Summer Internships:	
DAAD–WISE internship at the Max Planck Institute for Extraterrestrial Physics	2015
NIUS–Physics fellow at NCRA–TIFR, Pune	2014

## AWARDS AND SCHOLARSHIPS

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Cranson and Edna B. Shelley Outstanding Teaching Assistant Award (Cornell Univ.)	2019
Institute Gold Medal (IISER Pune)	2017
Outstanding Student Paper Award in Space Physics and Aeronomy (AGU Fall Meeting)	2016
DAAD–WISE Summer Scholarship	2015
National Initiative on Undergraduate Sciences – Physics Fellowship	2013
Kendriya Vaigyanik Protsahan Yojana Fellowship	2012 – 2017

## CONFERENCE / RESEARCH SUPPORT GRANTS

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Penn State SETI Symposium 2023 Travel Support	2023
Cornell University Graduate School Conference Travel Grant	2022, 2023
Cornell University Graduate School Research Travel Grant	2022
International Astronomical Union General Assembly Travel Grant	2022
International Astronomical Union Symposium 363 (virtual) Registration Waiver	2021

## REFEREED JOURNAL PUBLICATIONS

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9 publications: 7 first-author, 2 co-author.

1. [\[In press\] Suresh, A.](#), Gajjar, V., Nagarajan, P., Sheikh, S. Z., et al., (9 authors), *A 4–8 GHz Galactic Center Search for Periodic Technosignatures*, [2023 AJ 165 255](#).
2. **Suresh, A.**, Cordes, J. M., Chatterjee, S., Gajjar, V., et al. (9 authors), *4–8 GHz Fourier-domain Searches for Galactic Center Pulsars*, [2022 ApJ 933 121](#).
3. **Suresh, A.**, Cordes, J. M., Chatterjee, S., Gajjar, V., et al. (7 authors), *4–8 GHz Spectro-temporal Emission from the Galactic Center Magnetar PSR J1745–2900*, [2021 ApJ 921 101](#).
4. **Suresh, A.**, Chatterjee, S., Cordes, J. M., & Crawford, F., *An Arecibo Search for Fast Radio Transients from M87*, [2021 ApJ 920 16](#).
5. **Suresh, A.**, Chatterjee, S., Cordes, J. M., Bastian, T. S. & Hallinan, G., *Detection of 2–4 GHz Continuum Emission from  $\epsilon$  Eridani*, [2020 ApJ 904 138](#).
6. **Suresh, A.**, & Cordes, J. M., *Induced Polarization from Birefringent Pulse Splitting in Magneto-ionic Media*, [2019 ApJ 870 29](#).
7. **Suresh, A.**, Sharma, R., Oberoi, D., et al. (39 authors), *Wavelet-based Characterization of Small-scale Solar Emission Features at Low Radio Frequencies*, [2017 ApJ 843 19](#).
8. Gajjar, V., et al. (22 authors including **Suresh, A.**), *Searching for broadband pulsed beacons from 1883 stars using neural networks*, [2022 ApJ 932 81](#).
9. Gajjar, V., et al. (26 authors including **Suresh, A.**), *The Breakthrough Listen Search For Intelligent Life Near the Galactic Center I*, [2021 AJ 162 33](#).

## ACADEMIC PRESENTATIONS

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### Contributed Conference Talks

Cornell Exoplanets Conference	2023
<i>A 4–8 GHz Galactic Center Search for Periodic Technosignatures</i>	
IAU Symposium 363: Neutron Star Astrophysics at the Crossroads	2021
<i>4–8 GHz Emission of the Galactic Center Magnetar PSR J1745–2900</i>	
The Past, Present, and Future of the VLA: Celebrating 40 Years	2021
<i>Radio Emission from <math>\epsilon</math> Eridani</i>	
NANOGrav Fall Meeting	2019
<i>The Breakthrough Listen Galactic Center Survey using the Green Bank Telescope</i>	

### Seminars

Curtin University Department-wide Lunch Talk	2022
<i>Fast Transient Searches of the Galactic Center</i>	
Green Bank Observatory Community Zoom	2022
<i>A Galactic Center Search for Fast Transients at 4–8 GHz</i>	

UC Berkeley Astronomy Short Talk <i>4–8 GHz Searches for Galactic Center Pulsars</i>	2022
Caltech Radio Astronomy Lunch Talk <i>A 4–8 GHz Search for Fast Transients at the Galactic Center</i>	2021
Breakthrough Listen Standing Seminar <i>4–8 GHz Emission Morphology of the Galactic Center Magnetar</i>	2021
Event Horizon Telescope Pulsar Working Group <i>Galactic Center Pulsar Searches with Breakthrough Listen Data</i>	2020
NCRA-TIFR Seminar <i>Birefringent Pulse Splitting in Magnetoionic Media</i>	2019
UC Berkeley SETI Seminar <i>Propagation-induced Effects on Fast Radio Bursts and Extraterrestrial Intelligence Signals</i>	2018

### Posters

IAU Symposium 369: Cosmology and Multi-messenger Studies with Fast Radio Bursts <i>An Arecibo Survey of M87 for Fast Radio Bursts</i>	2022
240th Meeting of the American Astronomical Society <i>A 4–8 GHz Search for Fast Transients at the Galactic Center (<a href="#">link</a>)</i>	2022
35th Meeting of the Astronomical Society of India <i>Exploring the Spatial Distribution of Weak Non-thermal Energy Releases on the Solar Surface</i>	2017
American Geophysical Union Fall Meeting <i>Wavelet Based Characterization of Low Radio Frequency Solar Emissions</i>	2016
34th Meeting of the Astronomical Society of India <i>Statistical analysis of weak solar bursts seen with the Murchison Widefield Array</i>	2016

## **COMPETITIVELY AWARDED ALLOCATIONS**

### Observing Proposals (as PI)

Very Large Array:

VLA/19A-283: Precise Localization of Flares from the  $\epsilon$  Eri Exoplanetary System (12 hrs.)

Green Bank Telescope:

GBT/21A-332: A Pilot Search for Galactic Transients from VLASS-identified Sources (12 hrs.)

GBT/19A-407: A FLAG Survey of Virgo and Coma Clusters for Fast Radio Bursts (64 hrs.)

Arecibo radio telescope:

P3315: L-band Survey of M87 for Fast Radio Bursts (12 hrs.)

### Supercomputing Proposals (as Co-PI)

XSEDE allocations PHY200054 and PHY210038:

Searches for Bursts, Pulses, and Periodic Signals in the Time Domain Radio Sky

## MENTORING EXPERIENCE

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Supervised Ryan J. Hill & Ethan S. Bair (both Cornell undergrads) during Fall 2019 on “Radio Frequency Interference Classification using Convolutional Neural Networks.”

## TEACHING EXPERIENCE

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Head Teaching Assistant (Cornell University)  
ASTRO 1101: From New Worlds to Black Holes Fall 2018

Teaching Assistant (Cornell University)  
ASTRO 1102: Our Solar System Spring 2018, Spring 2023  
ASTRO 1101: From New Worlds to Black Holes Fall 2017

## ACTIVE MEMBER AFFILIATION

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Graduate student member, American Astronomical Society 2019 – Present

## TECHNICAL SKILLS

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<b>Computer Languages</b>	Python, Bash scripting, PyTorch, $\text{\LaTeX}$ , HTML, SQL
<b>Astronomy Software</b>	CASA, DS9, PRESTO
<b>Other Software</b>	Microsoft Office

## PROFESSIONAL SERVICE

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Journal Referee  
Monthly Notices of the Royal Astronomical Society 2020, 2023

## OUTREACH

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“Ask an Astronomer” team member at Cornell University 2017 – 2020  
*Answer astronomy-related questions submitted by the public on an online forum.*

Scientific Poster-making Workshop Organizer 2020  
*A tutorial on scientific poster-making and presentation for Cornell Astronomy REU students.*

Lead Organizer of TESS hackathon 2019  
*Organized a TESS planet-hunting workshop for the Carl Sagan Institute at Cornell University*

4H Career Explorations for high school students 2018  
*Conducted lectures and demonstrations on blackbody radiation and spectral lines.*

Museum in the Dark 2018  
*Organized stargazing sessions as part of a Halloween-themed night-time event at a local museum.*