

Vighnesh Nagpal

CURRICULUM VITAE · UNIVERSITY OF CHICAGO

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Education & Employment

University of Chicago

PHD STUDENT & NSF GRADUATE RESEARCH FELLOW

Chicago, IL, USA

Sep 2024 -

Berkeley Radio Astronomy Laboratory

JUNIOR SPECIALIST

Berkeley, CA, USA

Jan 2024 - May 2024

University of California, Berkeley

BACHELOR OF ARTS, PHYSICS AND ASTROPHYSICS

Berkeley, CA, USA

Aug 2020 - Dec 2023

Publications

FIRST-AUTHOR

1. **V. Nagpal**, M. Goldberg, K. Batygin. 2024. Breaking Giant Chains: Early-Stage Instabilities in Long-Period Giant Planet Systems. *ApJ*, 969, 2.
2. **V. Nagpal**, S. Blunt, B.P. Bowler, T.D. Dupuy, E.L. Nielsen, J.J. Wang. 2023. The Impact of Bayesian Hyperpriors on the Population-Level Eccentricity Distribution of Imaged Planets. *AJ*, 165, 32.
3. **V. Nagpal** and J.S. Dillon. 2022. The Detectability of FRBs with HERA. *HERA Memo Series #112*. Available at: <http://reionization.org>

CONTRIBUTING AUTHOR

1. S. Blunt, J.J. Wang, and 18 colleagues including **V. Nagpal**. 2024. orbitize! v3: Orbit fitting for the High-contrast Imaging Community. *JOSS*.
2. S. Ghosh, D. Gadotti, F. Fragkoudi, **V. Nagpal**, and P. Di Matteo. 2024. Closing the gap: secular evolution of bar-induced dark-gaps in presence of thick disks. *MNRAS*, 532, 4.
3. M. Morgan, B.P. Bowler, and 4 colleagues inc. **V. Nagpal**. 2024. Signs of Similar Stellar Obliquity Distributions for Hot and Warm Jupiters Orbiting Cool Stars. *AJ*, 167, 2. [arxiv:2310.18445](https://arxiv.org/abs/2310.18445).
4. B.P. Bowler, Q.H. Tran, and 11 colleagues inc. **V. Nagpal**. 2023. Rotation Periods, Inclinations, and Obliquities of Cool Stars Hosting Directly Imaged Substellar Companions: Spin-Orbit Misalignments are Common. *AJ*, 165, 164.
5. The HERA Collaboration: Z. Abdurashidova, T. Adams, J.E. Aguirre, and 90 colleagues inc. **V. Nagpal**. 2023. Improved Constraints on the 21 cm EoR Power Spectrum and the X-Ray Heating of the IGM with HERA Phase I Observations. *ApJ*, 945, 124.
6. S. Blunt, J.J. Wang, and 11 colleagues inc. **V. Nagpal**. 2020. orbitize!: A Comprehensive Orbit-fitting Software Package for the High-contrast Imaging Community. *AJ*, 159, 89.

IN PREPARATION

1. **V. Nagpal**, J.S. Dillon, and colleagues. 2025. Limits on FRB Occurrence Rates from 110–180 MHz with HERA Phase I Observations.

Awards, Fellowships, & Grants

2024	NSF Graduate Research Program Fellow , National Science Foundation	\$ 159,000
2024	Undergraduate Commencement Speaker , Department of Astronomy, UC Berkeley	\$ 1,000
2024	Chambliss Award , 243rd AAS Meeting. See the announcement here .	
2023	Berkeley Physics Undergraduate Research Program Scholar , UC Berkeley	\$ 1,500
2022	Summer Undergraduate Research Fellowship , California Institute of Technology	\$ 6,700
2022	Berkeley Physics Undergraduate Research Program Scholar , UC Berkeley	\$ 1,500
2022	Dean's List , UC Berkeley	

Presentations

CONTRIBUTED TALKS

- V. Nagpal.** “Detecting low-frequency transients with HERA: forecasts and current attempts” Lunch talk, Department of Astronomy, UC Berkeley. April 2024.
- V. Nagpal.** “Breaking Giant Chains: Early-Stage Instabilities in Long-Period Giant Planet Systems.” Lunch talk, Department of Astronomy, UC Berkeley. November 2023.
- V. Nagpal.** “The Impact of Bayesian Hyperpriors on the Population-Level Eccentricity Distribution of Imaged Planets.” Emerging Researchers in Exoplanet Science VII, The Pennsylvania State University, PA, USA. August 2022.
- V. Nagpal** and J.S. Dillon. “The Detectability of Fast Radio Bursts with HERA.” HERA Collaboration Meeting. January 2022.
- V. Nagpal.** “New results for the eccentricity distribution of imaged giant planets.” Lunch talk, Department of Astronomy, UC Berkeley. October 2021.
- V. Nagpal.** “Precise Dynamical Masses for the HD-104304 G-M Binary.” Lunch talk, Department of Astronomy, UC Berkeley. April 2021.
- V. Nagpal.** “Orbitize: a Python package for fitting orbits to directly imaged planets.” Boston Area Exoplanet Science Meeting VII, Harvard-Smithsonian Center for Astrophysics. April 2019.

POSTERS

- V. Nagpal**, J.S. Dillon, A.R. Parsons. “Methods for Detecting FRBs with the Hydrogen Epoch of Reionization Array.” 243rd American Astronomical Society Meeting, New Orleans, LA, January 2024. Available [here](#).
- V. Nagpal**, S. Blunt, B.P. Bowler, T.D. Dupuy, E.L. Nielsen, J.J. Wang. “The Impact of Bayesian Hyperpriors on the Population-Level Eccentricity Distribution of Imaged Planets.” 240th American Astronomical Society Meeting, Pasadena, CA, June 2022.
- V. Nagpal**, J.S. Dillon and A.R. Parsons. Estimating the Detectability of Fast Radio Bursts with HERA. BPURS Poster Session, UC Berkeley, April 2022.
- V. Nagpal** et al. “Using long baseline radial velocities and direct imaging to make 13-sigma dynamical mass measurements for the components of the HD 104304 stellar binary.” 237th American Astronomical Society Meeting, Virtual Meeting, January 2021.

Teaching Experience & Service

2023	Astronomy C10 , Undergraduate Student Instructor	
2023	Berkeley Astronomy Small Council , Undergraduate Student Representative	
2021 & 2022	Code/Astro , Teaching Assistant	
2020	Wonders of the Universe , Instructor	<i>Online</i>