

# VEDANT CHANDRA

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## Professional Appointments

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Graduate Student, Center for Astrophysics   Harvard & Smithsonian	September, 2021–Present
Research Intern, Space Telescope Science Institute	June, 2020–May, 2021
Research Assistant, Johns Hopkins University	November, 2018–May, 2021

## Education

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Harvard University	2021–Present
<ul style="list-style-type: none"><li>• A.M., Ph.D. Astronomy &amp; Astrophysics (intended)</li><li>• Advisor: Charlie Conroy</li></ul>	
Johns Hopkins University	2017–2021
<ul style="list-style-type: none"><li>• B.S. Physics &amp; Applied Mathematics, minor in Space Sciences</li><li>• Advisor: Nadia Zakamska</li></ul>	

## Awards & Honors

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James Mills Peirce Fellowship, Harvard University	2021
Chambliss Medal, American Astronomical Society	2021
$\Sigma \Pi \Sigma$	2020
Summer Student Fellowship, JHU IDIES	2020
Provost's Undergraduate Research Award, JHU	2019
Dean's Undergraduate Research Award, JHU	2019
Dean's List 7/7 Semesters, JHU	2017–2021

## Grant Allocations

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STScI JWST Discretionary Fund (\$42,740)	2020
<ul style="list-style-type: none"><li>• “The Initial Mass Function of Resolved Stellar Populations in the Local Group”</li><li>• PI: Mario Gennaro, Co-I: Vedant Chandra</li></ul>	
Various Undergraduate Research Grants (\$13,500)	2019–2020
<ul style="list-style-type: none"><li>• PI: Vedant Chandra, Co-Is: Nadia Zakamska, Hsiang-Chih Hwang, Kevin C. Schlaufman</li></ul>	

## Selected Press Coverage

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<a href="#">ScienceNews Magazine</a>	August, 2020
<ul style="list-style-type: none"><li>• “Paradoxically, white dwarf stars shrink as they gain mass”</li></ul>	
<a href="#">JHU Press Release</a>	July, 2020
<ul style="list-style-type: none"><li>• “Johns Hopkins astrophysicists observe long-theorized quantum phenomena”</li></ul>	

## Invited Talks

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Online Meetings on Evolved Stars and Systems	December, 2021
<ul style="list-style-type: none"><li>• “Detection of Circumstellar Material and Rotation in a Runaway SNIa Donor”, <a href="#">video</a>.</li></ul>	

Institute for Advanced Study, Astrophysics Coffee	October, 2021
• “Circumstellar Material and Surface Rotation in a Runaway SNIa Donor”	
Space Telescope Science Institute, Summer Symposium	July, 2020
• “Fitting the Stellar Birth Function of Resolved Stellar Populations with Approximate Bayesian Computation”, <a href="#">19:30 onwards</a> .	
Space Telescope Science Institute, Summer Symposium	August, 2019
• “White Dwarf Spectroscopy with Machine Learning”, <a href="#">21:00 onwards</a> .	
Maryland Space Grant Consortium, Annual Symposium	July, 2019
• “White Dwarf Astronomy with Machine Learning”.	

#### Poster Presentations

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237th Meeting of the American Astronomical Society	January, 2021
• “Resolved Stellar Populations in the Era of JWST and Roman”, <a href="#">iPoster</a>	
IDIES and MINDS Annual Symposium	October, 2020
• “Hunting for Metal-Poor Main-Sequence Stars in SDSS”, awarded Best Poster.	
NASA HRP Investigators Workshop	January, 2020
• “Multivariate Analysis of Human Health and Performance in Spaceflight Simulation”	
IDIES Annual Symposium	October, 2019
• “Characterizing White Dwarf Spectra with Neural Networks”	
JHU DREAMS Conference	April, 2019
• “Hunting for Binary White Dwarf Stars with Spectroscopic Analysis”	

#### Observatory Allocations

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##### As Principal Investigator:

Magellan Observatory, MagE, 1 night	2022
• “The Uncharted Halo Beyond a Hundred Kiloparsecs”.	
Korea Microlensing Telescope, SSO, 28 nights	2021
• “Investigating the Evolution of Proto White Dwarfs”, co-PI with Yuan-Sen Ting.	
Gemini Observatory, GMOS, 3 hours	2021
• “A Short-period Double White Dwarf Binary from SDSS-V”.	
Gemini Observatory, GMOS, 2 hours	2021
• “Monitoring a Dynamic Gaseous Debris Disk around a White Dwarf”.	
Gemini Observatory, GMOS, 5 hours	2021
• “Double White Dwarf Binaries from SDSS-V”.	
Apache Point Observatory, ARCTIC, 12 hours)	2021
• “Monitoring Circumstellar Debris around a Runaway SN Ia Donor”.	
Apache Point Observatory, DIS, 23 hours	2021
• “Peculiar Hypervelocity Stars from Gaia EDR3”.	
Apache Point Observatory, DIS, 10 hours	2020
• “Time-resolved RVs of Massive WDs in Close Binary Systems”.	

**As Co-Investigator/Observer:**

Magellan Observatory, MagE, 4 nights	2022
• “The progenitors of extremely low-mass white dwarfs”, PI: Kareem El-Badry.	
Apache Point Observatory, DIS, 15 hours	2021
• “Following up Double White Dwarf Binaries found in SDSS-V”, PI: Nadia Zakamska.	
Neils Gehrels Swift Observatory, UVOT, 1 hour	2021
• “ToO: A 99-minute WD+WD Binary”, PI: Gagik Tovmassian.	
Gemini Observatory, 8 hours	2020
• “Discovery of mass-dependent gravitational redshifts in white dwarfs”, PI: Hsiang-Chih Hwang.	

**Undergraduate Research Mentorship**

John Magardino (JHU Physics & Astronomy)	Summer, 2020
Felix Yu (JHU Physics & Astronomy)	Summer, 2020
Rebecca Mosier (JHU Human Spaceflight Lab)	2019-2020
Jessica Nguyen (JHU Human Spaceflight Lab)	2019-2020

**Teaching**

Teaching Assistant, 360.133 Great Books at Hopkins, JHU	Fall, 2018
Teaching Assistant, 171.101 General Physics I, JHU	Summer, 2018

**Professional Service**

Member, Harvard Astronomy Student-Faculty Council	2021-Present
Member, Sloan Digital Sky Survey V	2020-Present

**Outreach**

Head of Logistics, JHU MedHacks Hackathon	2018-2019
Volunteer, JHU Physics Spring Fair	2018-2019
Contributing Writer, <a href="https://space.stackexchange.com">space.stackexchange.com</a>	2014-2018

**References**

Professor Charlie Conroy, Harvard University	( <a href="mailto:cconroy@cfa.harvard.edu">cconroy@cfa.harvard.edu</a> )
Professor Nadia L. Zakamska, Johns Hopkins University	( <a href="mailto:zakamska@jhu.edu">zakamska@jhu.edu</a> )

## First-Author Publications

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5. **Vedant Chandra**, Hsiang-Chih Hwang, Nadia L. Zakamska, Simon Blouin, Andrew Swan, Thomas R. Marsh, Ken J. Shen, Boris T. Gänsicke, J.J. Hermes, Odelia Putterman, Evan B. Bauer, Evan Petrosky, Vikram S. Dhillon, Stuart P. Littlefair & Richard P. Ashley (2022)  
“The SN Ia Runaway LP 398-9: Detection of Circumstellar Material and Surface Rotation”  
*Monthly Notices of the Royal Astronomical Society*, *submitted*
4. **Vedant Chandra**, Hsiang-Chih Hwang, Nadia L. Zakamska, Boris T. Gänsicke, J.J. Hermes, Axel Schwöpe, Carles Badenes, Gagik Tovmassian, Evan B. Bauer, Dan Maoz, Matthias R. Schreiber, Odette F. Toloza, Keith P. Inight, Hans-Walter Rix & Warren R. Brown (2021)  
“A 99-minute Double-lined White Dwarf Binary from SDSS-V”  
*The Astrophysical Journal*, *921*, 160
3. **Vedant Chandra** & Kevin C. Schlaufman (2021)  
“Searching for Low-mass Population III Stars Disguised as White Dwarfs”  
*The Astronomical Journal*, *161*, 197
2. **Vedant Chandra**, Hsiang-Chih Hwang, Nadia L. Zakamska & Sihao Cheng (2020)  
“A Gravitational Redshift Measurement of the White Dwarf Mass–Radius Relation”  
*The Astrophysical Journal*, *899*, 146
1. **Vedant Chandra**, Hsiang-Chih Hwang, Nadia L. Zakamska & Tamás Budavári (2020)  
“Computational Tools for the Spectroscopic Analysis of White Dwarfs”  
*Monthly Notices of the Royal Astronomical Society*, *497*, 2688

## Co-Authored Publications

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4. Evan B. Bauer, **Vedant Chandra**, Ken J. Shen & J.J. Hermes (2021)  
“Masses of White Dwarf Binary Companions to Type Ia Supernovae Measured from Runaway Velocities”  
*The Astrophysical Journal Letters*, *in press*
3. Hsiang-Chih Hwang, Yuan-Sen Ting, Charlie Conroy, Nadia L. Zakamska, Kareem El-Badry, Phillip Cargile, Dennis Zaritsky, **Vedant Chandra**, Jiwon Jesse Han, Joshua S. Speagle & Ana Bonaca (2021)  
“Wide binaries from the H3 survey: the thick disk and halo have similar wide binary fractions”  
*Monthly Notices of the Royal Astronomical Society*, *submitted*
2. Rohan P. Naidu, Alexander P. Ji, Charlie Conroy, Ana Bonaca, Yuan-Sen Ting, Dennis Zaritsky, Lieke A. C. van Son, Floor S. Broekgaarden, Sandro Tacchella, **Vedant Chandra**, Nelson Caldwell, Phillip Cargile & Joshua S. Speagle (2021)  
“Evidence from Disrupted Halo Dwarfs that r-process Enrichment via Neutron Star Mergers is Delayed by  $\gtrsim 500$  Myrs”  
*The Astrophysical Journal Letters*, *submitted*
1. Evan Petrosky, Hsiang-Chih Hwang, Nadia L. Zakamska, **Vedant Chandra** & Matthew Hill (2021)  
“Variability, periodicity and contact binaries in WISE”  
*Monthly Notices of the Royal Astronomical Society*, *503*, 3975

## Other Published Works

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astrobites

September, 2020

- “Measuring the White Dwarf Mass-Radius Relation using Thousands of Stars”