

# Rohan Naidu (he/him)

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## RESEARCH INTERESTS

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first stars & galaxies, cosmic reionization, galaxy formation & evolution;  
Galactic archaeology, near-field cosmology, dark matter

## EDUCATION

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<b>Harvard University, U.S.A.</b> , Ph.D. in Astronomy Advisor: Prof. Charlie Conroy Thesis: <i>Unraveling the Galactic Halo with the H3 Survey</i>	2017–2022
<b>Yale-NUS College, Singapore</b> , B.S. in Physical Sciences <i>magna cum laude</i> , inaugural class of 150 of “Asia’s first liberal arts college” Capstone Advisor: Prof. Pascal Oesch, Capstone: <i>Insights into Cosmic Reionization</i>	2013–2017

## PROFESSIONAL APPOINTMENTS

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NASA Hubble Fellow, Massachusetts Institute of Technology, U.S.A.	2022–2025
Pappalardo Fellow, Massachusetts Institute of Technology, U.S.A.	2025–2027

## ACADEMIC HONORS

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IOP Publishing Top Cited Paper Award ×2 <i>awarded for “two of the most cited papers published across the entire IOP Publishing journal portfolio (ApJ, ApJL, AJ) within the past 3 years (2020 to 2022)”</i>	2023
Fireman Prize, Astronomy Department, Harvard University <i>awarded to a graduating student for “superlative work on their Ph.D. thesis”</i>	2022
Certificate of Distinction in Teaching, Harvard University <i>for a “special contribution to undergraduate teaching”</i> <i>based on student evaluations for courses taught during the pandemic</i>	2021
Ashford Fellowship, Harvard University <i>awarded to six incoming students who are “highly likely to make a substantial impact in their chosen field of study, as well as in society”</i>	2017–2022
Peirce Fellowship, Astronomy Department, Harvard University <i>awarded to 1–3 incoming graduate students who “possess significant promise as researchers”</i>	2017–2020
Chambliss Astronomy Student Achievement Award, American Astronomical Society	2017

## SELECT OBSERVING PROGRAMS AS PRINCIPAL INVESTIGATOR

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Total funding from approved *JWST* and *HST* observing programs: \$701,000

JWST, NIRSpec (co-PI with Pascal Oesch) <i>Mirage or Miracle?</i> <i>Spectroscopic Confirmation of Remarkably Luminous Galaxies at <math>z &gt; 10</math></i>	33 hours, 2024
JWST, NIRCам grism (co-PI with Jorryt Matthee) <i>All the Little Things: Pop III Signatures &amp; the Ionizing Budget of Dwarf Galaxies in the Epoch of Reionization</i>	47+29 hours, 2024
JWST, NIRSpec (co-PI with Christina Eilers, Jorryt Matthee, Fred Davies) <i>MASQUERADE: Mapping a Super-luminous Quasar's Extended Radiative Emission</i>	21 hours, 2025
JWST, NIRSpec (co-PI with Christina Eilers, Jorryt Matthee, Fred Davies) <i>Mapping Quasar Light Echoes with Lyman-alpha Forest Tomography during the Epoch of Reionization</i>	21 hours, 2024
JWST, NIRCам grism <i>Where Cosmic Dawn Breaks First:</i> <i>Mapping the Primordial Overdensity Powering a <math>z \sim 9</math> Ionized Bubble</i>	7 hours, 2023
JWST, NIRCам grism (co-PI with Jorryt Matthee) <i>Anatomy of an Ionized Bubble at <math>z = 6.6</math>:</i> <i>Which Galaxies Reionized the Universe?</i>	18 hours, 2023
Magellan, MagE (co-PI with Vedant Chandra) <i>To 100 kpc and Beyond:</i> <i>Bringing the Gaia Revolution to the Brink of the Galaxy</i>	28 nights, 2022-
Magellan, MIKE (co-PI with Alex Ji) <i>Extending the Chemical Reach of the H3 Survey of the Galactic Halo</i>	20 nights, 2021-23
Magellan, FIRE <i>Rest-UV Spectroscopy of Galaxies Reionizing the Universe at <math>z = 6 - 7</math></i>	10 nights, 2019-20
Hubble Space Telescope, WFC3/UVIS <i>Confirming Extreme Lyman Continuum Emission in a <math>z = 3.27</math> Star-Forming Galaxy</i>	5 orbits, 2018
Magellan, IMACS <i>A Ly<math>\alpha</math> Survey to Harvest Lyman Continuum and Prepare for JWST</i>	4 nights, 2018

## SELECT OBSERVING PROGRAMS AS CO-INVESTIGATOR

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PIs: Charlie Conroy, Dennis Zaritsky, MMT, Hectochelle 200+ nights, 2018-  
*The H3 Spectroscopic Survey of the Stellar Halo*. Core survey team member.

PI: Pascal Oesch, JWST, NIRCam <i>FRESCO: The First Reionization Epoch Spectroscopic COmplete Survey</i>	53 hours, 2022-23
PI: Sirio Belli, JWST, NIRSpec <i>The Stellar and Gas Content of Galaxies at Cosmic Noon</i>	84 hours, 2022-23
PIs: Hakim Atek & John Chisholm, JWST, NIRCam <i>JWST's GLIMPSE: gravitational lensing &amp; NIRCam imaging to probe early galaxy formation and sources of reionization</i>	148 hrs, 2024
PI: Wren Suess, JWST, NIRCam <i>Medium bands, Mega Science: spatially-resolved <math>R \sim 15</math> spectrophotometry of 50,000 sources at <math>z = 0.3 - 12</math></i>	50 hrs, 2024
PI: Anna de Graaff, JWST, NIRSpec <i>A complete census of the rare, extreme and red: a NIRCam-selected extragalactic community survey with JWST/NIRSpec</i>	59 hrs, 2024
PI: Jorjy Matthee, JWST, NIRSpec <i>Dissecting Little Red Dots: the connection between early SMBH growth and cosmic reionization</i>	45 hrs, 2024
PI: Vedant Chandra, VLT, FLAMES <i>A Chemical Survey of the Milky Way's Ancient Heart</i>	75 hrs, 2023-24
PI: Charlotte Mason, MMT, Binospec <i>BLAS: The Binospec Ly<math>\alpha</math> Survey</i>	15.5 nights, 2019-21
PI: Sandro Tacchella, MMT, MMIRS <i>Consensus on low-mass galaxies: how do low-mass galaxies grow?</i>	12 nights, 2019-21

## PUBLICATION RECORD

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22 primary author (first/second author) papers, 1600+ citations, h-index 18, [ADS library](#).

64 total papers, 3100+ citations, h-index 32, [ADS library](#).

31 papers set in the Milky Way, 33 papers set in the distant Universe.

† marks 5 supervised student papers.

### Primary Author Papers

22. J. Matthee, **R.P. Naidu**, G. Brammer, et al., *Little Red Dots: an abundant population of faint AGN at  $z \sim 5$  revealed by the EIGER and FRESCO JWST surveys*, [arXiv:2306.05448](#).
21. †K. Sharpe, **R.P. Naidu**, C. Conroy, *What is Missing from the Local Stellar Halo?*, [arXiv:2211.04562](#), submitted to ApJ.
20. **R.P. Naidu**, P. A. Oesch, D. Setton et al., *Schrodinger's Galaxy Candidate: Puzzlingly Luminous at  $z \approx 17$ , or Dusty/Quenched at  $z \approx 5$ ?*, [arXiv:2208.02794](#), submitted to ApJ.
19. **R.P. Naidu**, C. Conroy, A. Bonaca, et al., *Live Fast, Die  $\alpha$ -Enhanced: The Mass-Metallicity- $\alpha$  Relation of the Milky Way's Disrupted Dwarf Galaxies*, [arXiv:2204.09057](#), submitted to ApJ.

18. †V. Chandra, **R.P. Naidu**, C. Conroy, et al., *Discovery of the Magellanic Stellar Stream Out to 100 kpc*, [ApJ, 956, 110C, 2023](#).
17. †V. Chandra, **R.P. Naidu**, C. Conroy, et al., *Distant Echoes of the Milky Way's Last Major Merger*, [ApJ, 951, 26C, 2023](#).
16. A. P. Ji, **R.P. Naidu**, K. Brauer et al., *Chemical abundances of the Typhon Stellar Stream*, [MNRAS, 519, 4467J, 2023](#).
15. **R.P. Naidu**, P. A. Oesch, P. G. van Dokkum et al., *Two Remarkably Luminous Galaxy Candidates at  $z \approx 10 - 12$  Revealed by JWST*, [ApJ, 940L, 14N, 2022](#).
14. †J. J. Han, **R.P. Naidu**, C. Conroy et al., *A Tilt in the Dark Matter Halo of the Galaxy*, [ApJ, 934, 14, 2022](#).
13. **R.P. Naidu**, A.P. Ji, C. Conroy, et al., *Evidence from Disrupted Halo Dwarfs that  $r$ -process Enrichment via Neutron Star Mergers is Delayed by  $> 500$  Myrs*, [ApJL, 926, 32, 2022](#).
12. **R.P. Naidu** & J. Matthee et al., *The Synchrony of Production and Escape: Half the Bright Ly $\alpha$  Emitters at  $z \approx 2$  have Lyman Continuum Escape Fractions  $\approx 50\%$* , [MNRAS, 510, 4582, 2022](#).
11. J. Matthee & **R.P. Naidu** et al., *(Re)Solving Reionization with Ly $\alpha$ : How Bright Ly $\alpha$  Emitters Account for the  $z \approx 2 - 8$  Cosmic Ionizing Background*, [MNRAS, 512, 5960, 2022](#).
10. **R.P. Naidu**, C. Conroy, A. Bonaca, et al., *Reconstructing the Last Major Merger of the Milky Way with the H3 Survey*, [ApJ, 923, 92, 2022](#).
9. C. Conroy, **R.P. Naidu**, N. Garavito-Camargo, et al., *All-Sky Dynamical Response of the Galactic Halo to the Magellanic clouds*, [Nature, 592, 534-536, 2021](#).
8. †M.T. Gialluca, **R.P. Naidu**, A. Bonaca, *Velocity Dispersion of the GD-1 Stellar Stream*, [ApJL, 911, 32, 2021](#).
7. A. Bonaca, **R.P. Naidu**, C. Conroy, et al., *Orbital Clustering Identifies the Origins of Galactic Stellar Streams*, [ApJL, 909, 26, 2021](#).
6. **R.P. Naidu**, C. Conroy, A. Bonaca, et al., *Evidence from the H3 Survey That the Stellar Halo Is Entirely Comprised of Substructure*, [ApJ, 901, 48, 2020](#).
5. **R.P. Naidu**, S. Tacchella, C.A. Mason, et al., *Rapid Reionization by the Oligarchs: The Case for Massive, UV-bright, Star-forming Galaxies with High Escape Fractions*, [ApJ, 892, 109, 2020](#).
4. C.A. Mason, **R.P. Naidu**, S. Tacchella, J.R. Leja, *Model-independent constraints on the hydrogen-ionizing emissivity at  $z > 6$* , [MNRAS, 489, 2669, 2019](#).
3. C. Conroy, **R.P. Naidu**, D. Zaritsky, et al., *Resolving the Metallicity Distribution of the Stellar Halo with the H3 Survey*, [ApJ, 887, 237, 2019](#).
2. **R.P. Naidu**, B. Forrest, P. A. Oesch, et al., *A low Lyman Continuum escape fraction of  $< 10\%$  for extreme [OIII] emitters in an overdensity at  $z \sim 3.5$* , [MNRAS, 478, 791, 2018](#).
1. **R.P. Naidu**, P.A. Oesch, N. Reddy, et al., *The HDUV Survey: Six Lyman Continuum Emitter Candidates at  $z \sim 2$  Revealed by HST UV Imaging*, [ApJ, 847, 12, 2017](#).

## Contributing Author Papers

42. P.A. Oesch, G. Brammer, **R.P. Naidu** et al., *The JWST FRESCO survey: legacy NIRCam/grism spectroscopy and imaging in the two GOODS fields*, [MNRAS, 525, 2864O, 2023](#).

41. G. Limberg, A.P. Ji, **R.P. Naidu** et al., *Extending the Chemical Reach of the H3 Survey: Detailed Abundances of the Dwarf-galaxy Stellar Stream Wukong/LMS-1*, [arXiv:2308.13702](#), submitted to MNRAS.
40. V. Chandra et al., *The Three-Phase Evolution of the Milky Way*, [arXiv:2310.13050](#), submitted to ApJ.
39. R.L. Davies et al., *JWST Reveals Widespread AGN-Driven Neutral Gas Outflows in Massive  $z \sim 2$  Galaxies*, [arXiv:2310.17939](#), submitted to MNRAS.
38. C. Conroy et al., *Detection of Accretion Shelves Out to the Virial Radius of a Low-Mass Galaxy with JWST*, [arXiv:2310.13048](#), submitted to ApJ.
37. E.J. Nelson et al., *FRESCO: An extended, massive, rapidly rotating galaxy at  $z = 5.3$* , [arXiv:2310.06887](#), submitted to ApJ.
36. R. Gottumukkala et al., *Unveiling the hidden universe with JWST: The contribution of dust-obscured galaxies to the stellar mass function at  $z \sim 3 - 8$* , [arXiv:2310.03787](#), submitted to MNRAS.
35. J.E. Greene et al., *UNCOVER spectroscopy confirms a surprising ubiquity of AGN in red galaxies at  $z > 5$* , [arXiv:2309.05714](#), submitted to ApJ.
34. M. Yue et al., *EIGER V. Characterizing the Host Galaxies of Luminous Quasars at  $z > 6$* , [arXiv:2309.04614](#), submitted to ApJ.
33. T. Herard-Demanche et al., *Mapping dusty galaxy growth at  $z > 5$  with FRESCO: Detection of  $H\alpha$  in submm galaxy HDF850.1 and the surrounding overdense structures*, [arXiv:2309.04525](#), submitted to MNRAS.
32. M. Xiao et al., *Massive Optically Dark Galaxies Unveiled by JWST Challenge Galaxy Formation Models*, [arXiv:2309.02492](#), submitted to Nature.
31. S. Belli et al., *Massive and Multiphase Gas Outflow in a Quenching Galaxy at  $z = 2.445$* , [arXiv:2308.05795](#), submitted to Nature.
30. R. Bordoloi et al., *EIGER IV: The cool  $10^4$  K circumgalactic environment of high- $z$  galaxies reveals remarkably efficient IGM enrichment*, [arXiv:2307.01273](#), submitted to ApJ.
29. I. Labbe et al., *UNCOVER: Candidate Red Active Galactic Nuclei at  $3 < z < 7$  with JWST and ALMA*, [arXiv:2306.07320](#), submitted to ApJ.
28. K. E. Heintz et al., *Extreme damped Lyman- $\alpha$  absorption in young star-forming galaxies at  $z = 9 - 11$* , [arXiv:2306.00647](#), submitted to Science.
27. C. Conroy et al., *Birth of the Galactic Disk Revealed by the H3 Survey*, [arXiv:2204.02989](#), submitted to ApJ.
26. K. El-Badry et al., *The fastest stars in the Galaxy*, [OJA](#), **6**, 28, 2023.
25. J. Johnson et al., *Dwarf galaxy archaeology from chemical abundances and star-formation histories*, [MNRAS](#), **526**, 5084J, 2023.
24. R.J. Bouwens et al., *Evolution of the UV LF from  $z \sim 15$  to  $z \sim 8$  using new JWST NIRCam medium-band observations over the HUDF/XDF*, [MNRAS](#), **523**, 1036B, 2023.
23. R.J. Bouwens et al., *UV luminosity density results at  $z > 8$  from the first JWST/NIRCam fields: limitations of early data sets and the need for spectroscopy*, [MNRAS](#), **523**, 1009B, 2023.
22. L. Barrufet et al., *Unveiling the Nature of Infrared Bright, Optically Dark Galaxies with Early JWST Data*, [MNRAS](#), **522**, 449B, 2023.
21. H. Rix et al., *The Poor Old Heart of the Milky Way*, [ApJ](#), **941**, 45R, 2022.

20. V. Chandra et al., *A Ghost in Boötes: The Least Luminous Disrupted Dwarf Galaxy*, [ApJ, 940, 127C, 2022](#).
19. J. J. Han et al., *The Stellar Halo of the Galaxy is Tilted & Doubly Broken*, [AJ, 164, 249, 2022](#).
18. M. Hasheminia et al., *No Evolution in the Half-mass Radius of Milky Way-type Galaxies over the Last 10 Gyr*, [ApJ, 932, 23, 2022](#).
17. D. Schaerer et al., *First look with JWST spectroscopy: Resemblance among  $z \sim 8$  galaxies and local analogs*, [A&A, 665, L4, 2022](#).
16. E. Leonova et al., *The prevalence of galaxy overdensities around UV-luminous Lyman $\alpha$  emitters in the Epoch of Reionization*, [MNRAS, 515, 5790, 2022](#).
15. J. Shen et al., *The Mass of the Milky Way from the H3 Survey*, [ApJ, 925, 1S, 2022](#).
14. Y. Qin et al., *Dark-ages Reionization and Galaxy Formation Simulation XX. The Ly $\alpha$  IGM transmission properties and environment of bright galaxies during the Epoch of Reionization*, [MNRAS, 510, 3858, 2022](#).
13. J. Matthee et al., *The X-SHOOTER Lyman- $\alpha$  survey at  $z = 2$  (XLS- $z2$ ) I: the panchromatic spectrum of typical Lyman- $\alpha$  emitters*, [MNRAS, 505, 1382M, 2021](#).
12. R. Bouwens et al., *New Determinations of the UV Luminosity Functions from  $z \sim 9$  to  $z \sim 2$  Show a Remarkable Consistency with Halo Growth and a Constant Star Formation Efficiency*, [AJ, 162, 47B, 2021](#).
11. C. Carter et al., *Ancient Very Metal-poor Stars Associated with the Galactic Disk in the H3 Survey*, [ApJ, 908, 208, 2021](#).
10. D. Zaritsky et al., *Discovery of Magellanic Stellar Debris in the H3 Survey*, [ApJL, 905, 3, 2020](#).
9. B.D. Johnson et al., *A Diffuse Metal-poor Component of the Sagittarius Stream Revealed by the H3 Survey*, [ApJ, 900, 103, 2020](#).
8. A. Bonaca et al., *Timing the Early Assembly of the Milky Way with the H3 Survey*, [ApJL, 897, 18, 2020](#).
7. A. Bonaca et al., *High-resolution Spectroscopy of the GD-1 Stellar Stream Localizes the Perturber near the Orbital Plane of Sagittarius*, [ApJL, 892, 37, 2020](#).
6. D. Zaritsky et al., *A Lower Limit on the Mass of Our Galaxy from the H3 Survey*, [ApJ, 888, 114, 2020](#).
5. C. Conroy et al., *Mapping the Stellar Halo with the H3 Spectroscopic Survey*, [ApJ, 883, 107, 2019](#).
4. X. Fan et al., *The Discovery of a Gravitationally Lensed Quasar at  $z = 6.51$* , [ApJL, 870, 11, 2019](#).
3. L.H. Jones et al.,  *$z \sim 2.5 - 3$  Ionizers in the GOODS-N Field*, [ApJ, 862, 142, 2018](#).
2. P.A. Oesch et al., *HDUV: The Hubble Deep UV Legacy Survey*, [ApJS, 237, 12, 2018](#).
1. C. Conroy et al., *They Might Be Giants: An Efficient Color-based Selection of Red Giant Stars*, [ApJL, 861, 16, 2018](#).

## COVERAGE IN POPULAR MEDIA

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- On “Two Remarkably Luminous Galaxies at  $z \approx 12$  Revealed by JWST”
  - *Standard Model of Cosmology Survives a Telescope’s Surprising Finds*, [Quanta](#)
  - *JWST finds two of the oldest and most distant galaxies ever seen*, [The Guardian](#)



- *JWST may have found the most ancient starlight we’ve ever seen—and it’s only the beginning*, [The Atlantic](#)
- *JWST has found the oldest galaxy we have ever seen in the universe*, [New Scientist](#)
- *What the spectacular images of JWST Reveal*, [Le Monde](#)
- *The James Webb Space Telescope Might Have Spotted the Most Distant Galaxy Ever Seen*, [Smithsonian Magazine](#)
- On “Schrodinger’s Galaxy”
  - *JWST Discovers a Galaxy That Could Break Physics*, 1.5 million views on [Secrets of The Universe](#) YouTube channel
  - *JWST catches ‘imposter’ galaxies red-handed*, [CNET](#)
  - *Could This Galaxy Be In Two Different Places? James Webb Telescope Reveals Another Candidate For Distant Galaxy*, [Mashable](#)
- On Milky Way work
  - *Astronomers Find Stars Cast Away from Galactic Neighbors*, [Sky & Telescope](#)
  - *Stars found hidden in huge cloud wrapped around the Milky Way*, [New Scientist](#)
  - *Our Milky Way Galaxy’s Most Recent Major Collision*, [SciTech Daily](#)
  - *Astronomers chart ocean of dark matter swirling outside the Milky Way*, [Live Science](#)
  - *Dark matter could be powering a galaxy that orbits the Milky Way*, [SYFY](#)

## INVITED TALKS

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Caltech, <i>The First Glimpse of the The First Galaxies with JWST</i>	Colloquium, 2023
Chicago, <i>The First Glimpse of the The First Galaxies with JWST</i>	Colloquium, 2023
CfA, <i>The First Glimpse of the The First Galaxies with JWST</i>	Colloquium, 2023
MIT, <i>The First Glimpse of the The First Galaxies with JWST</i>	Colloquium, 2023
Yale, <i>The First Glimpse of the The First Galaxies with JWST</i>	Colloquium, 2023
UTRGV, <i>The First Glimpse of the The First Galaxies with JWST</i>	Colloquium, 2023
Carnegie, <i>The First Glimpse of the The First Galaxies with JWST</i>	Colloquium, 2022
ANU, <i>The First Glimpse of the The First Galaxies with JWST</i>	Colloquium, 2022
UMass Amherst, <i>The First Glimpse of the The First Galaxies with JWST</i>	Colloquium, 2022
U. of Minnesota, <i>Unraveling the Galactic Halo with the H3 Survey</i>	Colloquium, 2020
IIT Hyderabad, <i>The First Glimpse of the The First Galaxies with JWST</i>	Seminar, 2023
MIT, <i>The First Glimpse of the The First Galaxies with JWST</i>	Seminar, 2023
Tufts, <i>The First Glimpse of the The First Galaxies with JWST</i>	Seminar, 2022
Sao Paulo, <i>The First Glimpse of the The First Galaxies with JWST</i>	Seminar, 2022
U. of Washington, <i>The First Glimpse of the The First Galaxies with JWST</i>	Seminar, 2022
CfA, <i>(Very) Early Results from JWST</i>	Seminar, 2022
DAWN, <i>Solving Reionization with Resolved Ly<math>\alpha</math></i>	Seminar, 2022

TIFR, <i>Solving Reionization with Resolved Ly<math>\alpha</math></i>	Seminar, 2022
Max Planck Institute, Heidelberg, <i>Reconstructing the Last Major Merger</i>	Seminar, 2021
U. Chicago, <i>Unraveling the Galactic Halo with the H3 Survey</i>	Seminar, 2021
UC Santa Cruz, <i>Unraveling the Galactic Halo with the H3 Survey</i>	Seminar, 2021
Carnegie, <i>Unraveling the Galactic Halo with the H3 Survey</i>	Seminar, 2021
NYU, <i>Unraveling the Galactic Halo with the H3 Survey</i>	Seminar, 2021
CfA, <i>Solving Reionization with Resolved Ly<math>\alpha</math></i>	Seminar, 2021
Surrey, <i>Unraveling the Galactic Halo</i>	Astrophysics Seminar, 2021
UT Austin, <i>Solving Reionization with Resolved Ly<math>\alpha</math></i>	Extragalactic Seminar, 2021
Cambridge, <i>Reconstructing the Last Major Merger</i>	Seminar, 2021
Tufts, <i>Rapid Reionization by the Oligarchs</i>	Astronomy seminar, 2021
AIP Potsdam, <i>Reconstructing the Last Major Merger</i>	Milky Way seminar, 2021
IAS, Princeton, <i>Unraveling the Galactic Halo with the H3 Survey</i>	Astro Coffee, 2020
Flatiron CCA, <i>Reconstructing the Last Major Merger</i>	Dynamics meeting, 2020
U. of Arizona, <i>Unraveling the Galactic Halo with the H3 Survey</i>	Galaxy Crawl seminar, 2020
Max Planck Institute, Heidelberg, <i>Unraveling the Galactic Halo</i>	Galaxy Coffee, 2020
Harvard, <i>Connecting the Milky Way to High-<math>z</math> Galaxy Evolution</i>	HiGEM seminar, 2020
U. of Arizona, <i>Rapid Reionization by the Oligarchs</i>	EURECA seminar, 2020
ESO Chile, <i>Rapid Reionization by the Oligarchs</i>	Thirty Minutes Talk, 2019

## CONFERENCE TALKS

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The Early Universe according to JWST, ISSI Bern <i>Seeking the Photons for Reionization</i>	2024
Reionization & Cosmic Dawn, Berkeley <i>Solving Reionization with Resolved Ly<math>\alpha</math></i>	2022
SAZERAC2, <i>Double Bubble Lyman Trouble: Indirect tracers of LyC for the JWST Era</i>	2021
Streams21, <i>The Accretion Origins of Stellar Streams</i>	2021
AAS Winter Meeting, <i>Unraveling the Galactic Halo with the H3 Survey</i>	2021
Harvard-Heidelberg Star-Formation Meeting, <i>Starburst (Sgrburst) in our Backyard</i>	2020
SAZERAC, <i>Rapid Reionization by the Oligarchs</i>	2020
Early Galaxy Evolution in the ALMA & JWST Era, <i>Rapid Reionization by the Oligarchs</i>	2019
Escape of Lyman Radiation, OAC Crete, <i>LyC at <math>z \approx 2 - 3</math> with the HDUV Survey</i>	2018



## TEACHING & ADVISING

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### Teaching

Head Teaching Fellow, <i>Stellar &amp; Planetary Astronomy</i> , Harvard University	Spring 2021
Instructor: Prof. John Johnson	
Teaching Fellow, <i>Galaxies &amp; Cosmology</i> , Harvard University	Fall 2019
Instructor: Prof. Charlie Conroy	
Teaching Assistant, <i>Intro. to Observational Astronomy</i> , Yale-NUS College	Spring 2017
Instructor: Prof. Bryan Penprase	

### Advising

Kate Leonova (Amsterdam)	2022-
adviser on ongoing reionization project with JWST surveys, paper in prep.	
Vedant Chandra (Harvard Astronomy)	2021-
adviser with Prof. Charlie Conroy on ongoing halo survey; two papers published	
Katherine Sharpe (Harvard College → UC Berkeley)	2021-23
advised with Prof. Charlie Conroy on one published paper and Harvard Jr. Thesis	
Steve Diaz (UMass Lowell, SAO Latino Initiatives Program)	2021
mentored on all aspects of research life during 3 month internship	
Megan Gialluca (Northern Arizona University, SAO REU student)	2020-21
advised with Dr. Ana Bonaca on one published paper	
Lavonna Mark (Yale-NUS College)	2020-21
advised on PhD applications & interviews, Stanford PhD on prize fellowship	
Jerrick Wee (Yale-NUS College)	2017-18
mentored on all aspects of astronomy research, published two papers	

## DIVERSITY, EQUITY, INCLUSION

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- Lead Member, NASA Hubble Fellowship DEI Group (2023-)
  - One of nine lead members of DEI group that is focused on diversifying the fellowship and using the program's privileged position to bring positive change in the community.
  - One of two fellows with overall responsibility for the annual postdoc fellowship application feedback program (e.g., recruiting team of current/former fellows, matching students with suitable mentors, publicity).
- Survey Representative, Harvard Graduate Student Mental Health Survey (2021)
  - One of five Astronomy Dept. point-persons for the Harvard-wide initiative.
  - Coordinated 95% participation from department and helped disseminate results.
- Python instructor & STEM Mentor, SAO's Latino Initiatives Program (2021)
  - Three month program for students from communities under-represented in STEM.
  - Introduced students to python with a focus on scientific computing.

- Held weekly one-to-one mentoring meetings.
- Volunteer, Harvard Banneker Institute summer program (2018, 2020)
  - Ten week research-study experience to prepare students of color for graduate school.
  - Held weekly office hours on all aspects of research, provided catch-all programming assistance.
- Department Point-Person & Volunteer, Harvard Graduate Students Union (2017-19)
  - Fair pay, affordable healthcare, and protection from abuse are core goals of the union.
  - Canvassed STEM departments ( $\approx 200$  calls + in-person conversations) and international students (e.g., [Harvard Crimson Op-Ed](#)) for union formation election.
  - Organized action with a focus on international student issues (e.g., Muslim ban, visa-related travel reimbursements, pandemic pay).

## PROFESSIONAL SERVICE

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- Subject-matter expert reviewer in a NASA peer review (2024)
- Scientific & Local Organizing Committees, First Light Conference, Boston (2023)
  - One of five SOC members, and one of six LOC members for > 150 person conference focused on early Universe results from the first year of JWST.
  - Designed scientific program, organized logistics, coordinated social events, assisted with overall responsibilities for smooth conduct of the event.
- Journal referee for the Astrophysical Journal (ApJ, ApJL), and Astronomy & Astrophysics (A&A, A&AL)
- Chief Coordinator, Harvard Astronomy's Recruitment Week (2019)
  - One of two grad students in-charge of every aspect of recruitment (e.g., designing the overall program, travel/restaurant arrangements, liaising with faculty/admin).
  - Developed new programming (e.g., closed-door student panel with anonymous questions) and conducted an entry/exit survey to probe the visit's successes/failures.
  - Produced a detailed report for faculty identifying areas of weakness (e.g., CfA web portals) that spurred action.

## OTHER INTERESTS

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- Quizzing/Trivia/Quiz-bowl
  - Won several national & international events – youngest gold medalist at the Asia-Pacific Quizzing Championships and four-time national champion (Singapore), one-time international champion of the Tata Crucible campus quiz (among the world's largest university tournaments with 38 cities, 5000+ teams).
  - Wrote/presented 1000+ questions for TV shows, pub quizzes, and community events.
- Poetry

- Published in journals including Helter Skelter Magazine’s New Indian Writing, the Quarterly Literary Review Singapore, and Softblow. Shortlisted/longlisted for prizes including the Poetry Society of India’s All-India Prize, University of Canberra’s International Poetry Prize, and the Wingword Poetry Prize.
- Data-science for social good
  - Led the team behind the viral electoral literacy website, [electionaire.info](http://electionaire.info) (>500,000 unique hits, > 10% of Singapore’s population). Conceptualized the project, recruited team, oversaw research on stances of political parties, handled press.
  - Data miner for studies focused on domestic maids’ rights in Singapore. Studies based on these data revealed live-in domestic maids from the Philippines, Indonesia and India who work in 1-of-4 households often enter contracts with zero off days per month.