

Angus “Gus” Beane

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Postdoctoral Associate

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Junior Fellow

Simons Society of Fellows
Simons Foundation
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Education

PhD Astronomy and Astrophysics, Harvard University. 2025
BA/MS Physics and Astronomy, University of Pennsylvania. 2019

Positions

Graduate Student, Center for Astrophysics | Harvard & Smithsonian, Sep 2019 – May 2025
Associate Research Assistant, Flatiron Institute, New York, NY. Aug 2018 – Dec 2018
Summer Research Assistant, Flatiron Institute, New York, NY. Jun 2018 – Aug 2018
Research Assistant, University of Richmond, Richmond, VA. Jun 2014 – Jun 2017

Honors & Fellowships

National

NASA FINESST Fellowship. 2020 – 2022
Barry Goldwater Scholarship. 2018

University

James Mill Peirce Fellowship, Harvard University. 2019
Rose Undergraduate Research Award, University of Pennsylvania. 2019
Dean’s Scholar, University of Pennsylvania. 2019
Phi Beta Kappa, University of Pennsylvania. 2018
Roy & Diana Vagelos Science Challenge Award, University of Pennsylvania. 2017 – 2019

Submitted manuscripts

Konietzka, R. M., Connor, L., Semenov, V. A., **Beane, A.**, Springel, V., & Hernquist, L. [Ray-tracing Fast Radio Bursts Through IllustrisTNG: Cosmological Dispersion Measures from Redshift 0 to 5.5](#), *Submitted to AAS Journals*. arXiv:2507.07090

McClure, R. L., Géron, T., D’Onghia, E., **Beane, A.**, Thusoo, A., Daniel, K. J., Filion, C., & Lucchini, S. [Secular Attrition of Classical Bulges by Stellar Bars](#), *Submitted to AAS Journals*. arXiv:2506.09150

Speagle, J. S., Zucker, C., **Beane, A.**, Cargile, P. A., Dotter, A., Finkbeiner, D. P., Green, G. M., Johnson, B. D., Schlafly, E. F., Bonaca, A., Conroy, C., Eadie, G., Eisenstein, D. J., Goodman, A. A., Han, J. J., Kamdar, H. M., Naidu, R., Rix, H.-W., Saydjari, A. K., Ting, Y.-S., & Zelko, I. A. [Deriving Stellar Properties, Distances, and Reddenings using Photometry and Astrometry with BRUTUS](#), *Submitted to AAS Journals*. arXiv:2503.02227

Refereed publications | First author

1. Beane, A., Johnson, J. W., Semenov, V., Hernquist, L., Chandra, V., & Conroy, C., 2025, **Rising from the Ashes. II. The Bar-driven Abundance Bimodality of the Milky Way**, *Astrophys. J.* **985** 221.
2. Beane, A., 2025, **Rising from the Ashes: A Metallicity-dependent Star Formation Gap Splits the Milky Way's α -Sequences**, *Astrophys. J.* **982** 106.
3. Beane, A., Hernquist, L., D'Onghia, E., Marinacci, F., Conroy, C., Qi, J., Sales, L. V., Torrey, P., & Vogelsberger, M., 2023, **Stellar Bars in Isolated Gas-rich Spiral Galaxies Do Not Slow Down**, *Astrophys. J.* **953** 173.
4. Beane, A., Sanderson, R. E., Ness, M. K., Johnston, K. V., Grion Filho, D., Mac Low, M.-M., Anglés-Alcázar, D., Hogg, D. W., & Laporte, C. F. P., 2019, **The Implications of Local Fluctuations in the Galactic Midplane for Dynamical Analysis in the Gaia Era**, *Astrophys. J.* **883** 103.
5. Beane, A., Villaescusa-Navarro, F., & Lidz, A., 2019, **Measuring the EoR Power Spectrum Without Measuring the EoR Power Spectrum**, *Astrophys. J.* **874** 133.
6. Beane, A., Ness, M. K., & Bedell, M., 2018, **Actions Are Weak Stellar Age Indicators in the Milky Way Disk**, *Astrophys. J.* **867** 31.
7. Beane, A. & Lidz, A., 2018, **Extracting Bias Using the Cross-bispectrum: An EoR and 21 cm-[C II]-[C II] Case Study**, *Astrophys. J.* **867** 26.
8. Beane, A., Miller III, B., & Parish, C., 2017, **Internal abstraction of dynemicin A: An MD approach**, *J. Mol. Graph. Model.* **74** 251–264.

Refereed publications | Co-author

9. Miller III., B. R., Yeager, A. V., Collins, J.A., Beane, A., Blake, A., Tate, E., Parish, C. A., Wu, E. Y., 2025, **Understanding the Fidelity and Specificity of DNA Polymerase I**, *ACS Omega*.
10. McClure, R., Beane, A., D'Onghia, E., Filion, C., & Daniel, K. J., 2025, **The impact of classical bulges on stellar bars and boxy-peanut-X features in disc galaxies**, *Mon. Not. R. Astr. Soc.* **537** 1475.
11. Speagle, S., Zucker, C., Bonaca, A., Cargile, P. A., Johnson, B. D., Beane, A., Conroy, C., Finkbeiner, D. P., Green, G. M., Kamdar, H. M., Naidu, R., Rix, H.-W., Schlafly, E. F., Dotter, A., Eadier, G., Eisenstein, D. J., Goodman, A. A., Han, J. J., Saydjari, A. K., Ting, Y.-S., & Zelko, I. A., 2024, **Mapping the Milky Way in 5D with 170 Million Stars**, *Astrophys. J.* **970** 121.
12. Moriwaki, K., Beane, A., & Lidz, A., 2024, **Insights into the 21 cm field from the vanishing cross-power spectrum at the epoch of reionization**, *Mon. Not. R. Astr. Soc.* **530** 3183.
13. Li, Z., Du, M., Debattista, V. P., Shen, J., Li, H., Liu, J., Vogelsberger, M., Beane, A., Marinacci, F., & Sales, L. V., 2023, **How Nested Bars Enhance, Modulate, and Are Destroyed by Gas Inflows**, *Astrophys. J.* **958** 77.
14. Tu, A. J., Zucker, C., Speagle, J. S., Beane, A., Goodman, A., Alves, J., Faherty, J., & Burkert, A., 2022, **Characterizing the 3D Kinematics of Young Stars in the Radcliffe Wave**, *Astrophys. J.* **936** 57.
15. Jones, D., Palatnick, S., Chen, R., Beane, A., & Lidz, A., 2021, **Fuzzy Dark Matter and the 21cm Power Spectrum**, *Astrophys. J.* **913** 7.
16. Angus, R., Beane, A., Price-Whelan, A. M., Newton, E., Curtis, J. L., Berger, T., van Saders, J., Kiman, R., Foreman-Mackey, D., Lu, Y., Anderson, L., & Faherty, J.K., 2020, **Exploring the Evolution of Stellar Rotation Using Galactic Kinematics**, *Astron. J.*

160 90.

17. Ness, M. K., Johnston, K. V., Blancato, K., Rix, H.-W., **Beane, A.**, Bird, J. C., & Hawkins, K., 2019, In the Galactic Disk, Stellar [Fe/H] and Age Predict Orbits and Precise [X/Fe], *Astrophys. J.* **883** 177.

Invited talks

ACS National Meeting, Orlando, FL, USA. Apr 2019

Contributed talks

Surveying the Milky Way Conference, Pasadena, CA, USA. Oct 2023

Harvard-Heidelberg Star Formation Workshop, Cambridge, MA, USA. Oct 2023

Galactic Bars Meeting, Granada, Spain. Jul 2023

AAS 235th Meeting, Honolulu, HI, USA. Jan 2020

CCA Intensity Mapping Workshop, New York, NY, USA. Feb 2019

AAS 233rd Meeting, Seattle, WA, USA. Jan 2019

Informal talks

Galaxy Formation Seminar, Flatiron Institute, New York, NY, USA. Feb 2024

Journal Club, University of Pennsylvania, Philadelphia, PA, USA. Sep 2023

Informal Seminar, Mullard Space Science Laboratory, Dorking, United Kingdom. Jul 2023

Galaxies Discussion Group, University of Cambridge, Cambridge, United Kingdom. Jul 2023

Special Seminar, Durham University, Durham, United Kingdom. Jul 2023

Astronomy Seminar, York University, Toronto, Ontario, Canada. Jun 2023

Science Seminar, University of Wisconsin-Madison, Madison, WI, USA. (virtual) Mar 2023

Cosmology Seminar, Max Planck Institute for Astrophysics, Garching, Germany. May 2022

Astronomy Seminar, Tufts University, Medford, MA, USA. Mar 2022

Lunch Talk, Massachusetts Institute of Technology, Cambridge, MA, USA. (virtual) Oct 2020

Lunch Talk, University of Wisconsin-Madison, Madison, WI, USA. Feb 2020

Posters

First Light Summer School, São Paulo, SP, Brazil. Aug 2019

ASBMB National Meeting, Boston, MA, USA. Mar 2015

Teaching

Harvard University

Teaching Fellow, Graduate Cosmology. Spring 2022

Teaching Fellow, Graduate Radiative Processes. Fall 2020

University of Pennsylvania

Grader, Undergraduate Introduction to Astrophysics II. Spring 2018

Teaching Assistant, Undergraduate Multi-variable Calculus. Spring 2017

Teaching Assistant, Undergraduate Single-variable Calculus. Fall 2016

References

Lars Hernquist | lhernquist@cfa.harvard.edu (PhD advisor)

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Elena D'Onghia | edonghia@astro.wisc.edu