



Nathaniel Starkman

Postdoctoral Associate
Brinson Prize Fellow
@ MIT Kavli

77 Massachusetts Avenue
Cambridge, MA 02139, USA

✉ starkman@mit.edu 🌐 nstarkman.space

📄 Publications ✂ arXiv 📄 Zenodo 📞 0000-0003-3954-3291



🏛️ EDUCATION

2018 – 2024 **PhD in Astronomy & Astrophysics**, University of Toronto 🔗 Toronto, ON, Canada
2014 – 2018 **B.S. in Mathematical Physics and Astronomy**, Case Western Reserve University 🔗 Cleveland, OH, USA

🏢 SELECT PROFESSIONAL APPOINTMENTS

2024 – 2027 **Postdoctoral Associate**, MIT Kavli Institute for Astrophysics and Space Research 🔗 Cambridge, MA, USA
2021 – **Coordinator & Core Developer**, Astropy 🔗

📄 SELECT PUBLICATIONS

- Euclid Collaboration, **N. Starkman**, J. Nibauer, S. Pearson, S. Wu, M. Walmsley, L. Necib, et al. *Euclid Quick Data Release (Q1): The geometry of dark matter halos from extragalactic streams*. Astronomy & Astrophysics SUBMITTED 🔗 ADS ✂ arXiv:2606.21774
- C. Myers, **N. Starkman**, L. Necib. *Physics-Informed Neural Networks for Modeling Galactic Gravitational Potentials*. Monthly Notices of the Royal Astronomical Society SUBMITTED 🔗 ADS ✂ arXiv:2606.18386 🔗
- S. Wu, **N. Starkman**, S. Pearson, J. Nibauer, J. Miro-Carretero, D. Martinez-Delgado. *Potamides: Mapping Dark Matter Halo Shapes from Stellar Stream Tracks in the Local Universe*. The Astrophysical Journal SUBMITTED 🔗 ADS ✂ arXiv:2605.07809
- N. Starkman**, J. Nibauer, J. Bovy, J. Webb, K. Tavangar, A. Price-Whelan, et al. *Stream Members Only: Data-Driven Characterization of Stellar Streams with Mixture Density Networks*. The Astrophysical Journal 980, 253 📄 10.3847/1538-4357/ad94f2 🔗
- N. Starkman**, J. Bovy, J. Webb, D. Calvetti, E. Somersalo. *On the fast track: Rapid construction of stellar stream paths*. Monthly Notices of the Royal Astronomical Society 522, 5022 📄 10.1093/mnras/stad1166 🔗 🔧 📄

🏆 SELECT FELLOWSHIPS & AWARDS

Jan 2025 **AAS Lancelot M. Berkeley–New York Community Trust Prize**, American Astronomical Society 🔗
to the Astropy Collaboration
Feb 2024 **Brinson Prize Fellowship** 🔗
2020 – 2023 **NSERC - CGS D** 🔗
2018 – 2024 **University of Toronto Graduate Fellowship**, University of Toronto

🔗 SELECT SOFTWARE

galax 📄 🔗
Galactic dynamics in JAX

coordinax 🔗
Coordinates in JAX

unxt 📄 🔗
Units in JAX

Astropy 📄 🔗
Astronomy in Python