

Nondh Panithanpaisal

Carnegie–Caltech Joint Postdoctoral Fellow in Theoretical Astrophysics

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Citizenship: Thai

(he/him/his)

EDUCATION

University of Pennsylvania

Philadelphia, PA

M.S. & Ph.D. in Physics and Astronomy

2018 – 2023

- Thesis: “Dwarf Galaxy Stellar Streams in Cosmological Baryonic Simulations of Milky Way–Mass Galaxies”
- Advisor: Robyn Sanderson

Princeton University

Princeton, NJ

A.B. in Physics with High Honors (Magna Cum Laude)

2014 – 2018

- Thesis: “Cross-correlation Analysis of the SPIDER Experiment.”

AWARDS AND HONORS

Carnegie–Caltech Joint Fellowship

2023

Zaccheus Daniel Fellowship in Astronomy, University of Pennsylvania

2021

Allen G. Shenstone Prize, Department of Physics, Princeton University

2018

Kusaka Memorial Prize, Department of Physics, Princeton University

2017

Fred Fox Class of 1939 Fund, summer research funding, Princeton University

2017

International Olympiad on Astronomy and Astrophysics (IOAA)

2011, 2012

- Gold medalist, Rio de Janeiro, Brazil. (2012)
- Silver medalist, Katowice, Poland. (2011)

International Astronomy Olympiad (IAO), silver medalist, Crimea, Ukrain

2010

PEER-REVIEW PUBLICATIONS

1. Horta, D., E. C. Cunningham, R. E. Sanderson, K. V. Johnston, **Nondh Panithanpaisal**, A. Arora, L. Necib, A. Wetzel, J. Bailin, and C.-A. Faucher-Giguère (2023). *The Observable Properties of Galaxy Accretion Events in Milky Way-like Galaxies in the FIRE-2 Cosmological Simulations*. *ApJ* **943**(2), 158, 158. arXiv: 2211.05799 [astro-ph.GA].
2. Wetzel, A., C. C. Hayward, R. E. Sanderson, X. Ma, D. Anglés-Alcázar, R. Feldmann, T. K. Chan, K. El-Badry, C. Wheeler, S. Garrison-Kimmel, F. Nikakhtar, **Nondh Panithanpaisal**, A. Arora, A. B. Gurvich, J. Samuel, O. Sameie, V. Pandya, Z. Hafen, C. Hummels, S. Loebman, M. Boylan-Kolchin, J. S. Bullock, C.-A. Faucher-Giguère, D. Kereš, E. Quataert, and P. F. Hopkins (2023). *Public Data Release of the FIRE-2 Cosmological Zoom-in Simulations of Galaxy Formation*. *ApJS* **265**(2), 44, 44. arXiv: 2202.06969 [astro-ph.GA].
3. Arora, A., R. E. Sanderson, **Nondh Panithanpaisal**, E. C. Cunningham, A. Wetzel, and N. Garavito-Camargo (2022). *On the Stability of Tidal Streams in Action Space*. *ApJ* **939**(1), 2. arXiv: 2207.13481.
4. Cunningham, E. C., R. E. Sanderson, K. V. Johnston, **Nondh Panithanpaisal**, M. K. Ness, A. Wetzel, S. R. Loebman, I. Escala, D. Horta, and C.-A. Faucher-Giguère (2022). *Reading the CARDS: The Imprint of Accretion History in the Chemical Abundances of the Milky Way’s Stellar Halo*. *ApJ* **934**(2), 172, 172. arXiv: 2110.02957.

5. Reino, S., R. E. Sanderson, **Nondh Panithanpaisal**, E. M. Rossi, and K. Kuijken (2022). *Orbital phase-driven biases in galactic mass constraints from stellar streams*. *MNRAS* **509**(4), 5365–5381. arXiv: 2107.03798.
6. Shipp, N., **Nondh Panithanpaisal**, L. Necib, R. Sanderson, D. Erkal, T. S. Li, I. B. Santistevan, A. Wetzel, L. R. Cullinane, A. P. Ji, S. E. Koposov, K. Kuehn, G. F. Lewis, A. B. Pace, D. B. Zucker, J. Bland-Hawthorn, E. C. Cunningham, S. Y. Kim, S. Lilleengen, J. Moreno, and S. Sharma (2022). *Streams on FIRE: Populations of Detectable Stellar Streams in the Milky Way and FIRE*. *ApJ* *accepted*. arXiv: 2208.02255.
7. Wu, Y., M. Valluri, **Nondh Panithanpaisal**, R. E. Sanderson, K. Freese, A. Wetzel, and S. Sharma (2022). *Using action space clustering to constrain the recent accretion history of Milky Way-like galaxies*. *MNRAS* **509**(4), 5882–5901. arXiv: 2104.08185.
8. **Nondh Panithanpaisal**, R. E. Sanderson, A. Wetzel, E. C. Cunningham, J. Bailin, and C.-A. Faucher-Giguère (2021). *The Galaxy Progenitors of Stellar Streams around Milky Way-mass Galaxies in the FIRE Cosmological Simulations*. *ApJ* **920**(1), 10, 10. arXiv: 2104.09660.

ACCEPTED AND IN-REVIEW PUBLICATIONS

1. Arora, A., N. Garavito-Camargo, R. E. Sanderson, E. C. Cunningham, A. Wetzel, **Nondh Panithanpaisal**, and M. Barry (2023). *LMC-driven anisotropic boosts in stream-subhalo interactions*. *arXiv e-prints*, arXiv:2309.15998, arXiv:2309.15998. arXiv: 2309.15998 [[astro-ph.GA](#)].
2. Nguyen, T., X. Ou, **Nondh Panithanpaisal**, N. Shipp, L. Necib, R. Sanderson, and A. Wetzel (2023). *Synthetic Gaia DR3 surveys from the FIRE cosmological simulations of Milky-Way-mass galaxies*. *arXiv e-prints*, arXiv:2306.16475, arXiv:2306.16475. arXiv: 2306.16475 [[astro-ph.GA](#)].
3. **Nondh Panithanpaisal**, R. E. Sanderson, A. Arora, E. C. Cunningham, and J. Baptista (2022). *Constraining the Tilt of the Milky Way’s Dark Matter Halo with the Sagittarius Stream*. *ApJ* *in revision*. arXiv: 2210.14983.
4. Baptista, J., R. Sanderson, D. Huber, A. Wetzel, O. Sameie, M. Boylan-Kolchin, J. Bailin, P. F. Hopkins, C.-A. Faucher-Giguere, S. Chakrabarti, D. Vargya, **Nondh Panithanpaisal**, A. Arora, and E. Cunningham (2022). *Orientations of DM Halos in FIRE-2 Milky Way-mass Galaxies*. *ApJ* *in revision*. arXiv: 2211.16382.

SELECTED TALKS, PRESENTATIONS, AND WORKSHOPS

Streams Across Sims Workshop (organizer) CCA, New York	2023
337 th International Astronomical Union Symposia poster presentation, Malaysia	2023
241 st American Astronomical Society meeting dissertation talk, Seattle	2023
Streams 22: Comunity Atlas of Tidal Streams workshop, Pasadena	2022
53 rd Division on Dynamical Astronomy meeting contributed talk, New York	2022
Big Apple Dynamics School Symposium contributed talk, New York	2021
European Astronomical Society annual meeting poster presentation, virtual	2021
The Local Group Symposium, STScI poster presentation, virtual	2020
51 rd Division on Dynamical Astronomy meeting contributed talk, virtual	2020
231 st American Astronomical Society meeting poster presentation, Maryland	2018

RESEARCH GRANTS

As Co-I (22-ROMAN22-0055)

A new theoretical framework for globular cluster science with the Roman Space Telescope 2023–2025

TEACHING AND MENTORING EXPERIENCE

Undergraduate Research Experience

Advised, co-advised undergraduate students on various research projects

Summer 2021, 2022

- Emily Bregou (Senior Thesis) - Penn undergraduate
- Ali Ayssami (PURM) - Penn undergraduate; co-advised with Adrien Thob
- Held weekly office hours for 5+ summer students from several institutions

Laboratory Experiences in the Natural Sciences (Penn LENS)

Philadelphia, PA

Graduate student mentor for local high school students

Summer 2020, 2021, 2022

- 5 student mentees (grade 11-12) from 4 different local schools with various ethnic background
- project: stars known to host exoplanets, dwarf galaxy streams in cosmological simulations, rotation curve of the Milky Way-mass galaxies

Studying Abroad Guidance for Thai Students

Mentored a few Thai high school students through the college application process

2021

- Gave advice on the application process and studying abroad. Reviewed personal essays.
- 1 student got accepted to the National University of Singapore with a scholarship

Department of Physics and Astronomy, University of Pennsylvania

Philadelphia, PA

Teaching assistant, PHYS102 – Gen. Phys.: EM, Optics, and Modern Physics

Spring 2019

Teaching assistant, ASTR001 – Survey of the Universe

Fall 2018

Department of Physics, Princeton University

Princeton, NJ

Grader, PHY101 – Introductory Physics I

Fall 2016

Department of Computer Science, Princeton University

Princeton, NJ

Grader, COS126 – General Computer Science

Fall 2015, Spring 2016

SKILLS

Programming Languages: Python, Java, C/C++, Mathematica

Languages: Thai (native), English (fluent), Mandarin Chinese (conversational), Japanese (conversational)