

Binh Nguyen

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EDUCATION

B.S. in Astronomy & B.A. in Linguistics

Expected May 2023

University of Arizona, Tucson, AZ

HONORS AND AWARDS

Angelos C. Langadas Scholarship (\$1,500)

2021-2022

Department of Astronomy, University of Arizona

International Tuition Award (\$120,000)

2019-2023

University of Arizona

COMPUTATIONAL SKILLS

- Python: completed one programming course in Python; highly experienced in NumPy, SciPy and matplotlib. Can write programs in Jupyter Notebook to combine and analyze data files on remote servers. Made plots of measurements stored in files and interpolated samples to perform discrete Fourier transforms.
- GIT
- LaTeX
- R
- HTML

RESEARCH EXPERIENCE

Undergraduate Research Assistant

May 2021-present

Department of Astronomy, University of Arizona

Project: "Properties of Ultra-Faint Dwarfs in Cosmological Simulations"

Advisor: Dr. Gurtina Besla

- Goals: To understand the evolution of the dark matter mass profiles and kinematics of ultra-faint dwarfs across cosmic time, using high-resolution, zoom-in cosmological simulations from Jeon+21.
- Built Python codes in Jupyter Notebook to compare the dark matter density profiles of the simulated dwarfs to the Navarro-Frenk-White profile and compute mass-to-light ratios using the kinematics of star particles. Corresponded with collaborators on how to improve measurements of virial radii of dark matter halos in simulations. Analysis of simulated data in comparison with observed data is ongoing.

Undergraduate Research Assistant

Jun 2020-Jun 2021

Department of Astronomy, University of Arizona

Project: "Searching for Low-Mass Members of Nearby Star-Forming Regions"

Advisor: Dr. Taran Esplin

- Goals: To measure high-precision, multi-epoch astrometry from archival observations by the Spitzer Space Telescope to identify brown dwarf candidates via their proper motion in the Chamaeleon II dark cloud.
- Results: Built Python and R codes to mosaic frames from .fits files and compress tables into .csv files. Used the graph-plotting software TOPCAT to compare Spitzer's images and those taken by the Wide-field Infrared Survey Explorer (WISE) within the same range of right ascension.

Undergraduate Research Assistant

Oct 2021-present

Department of Linguistics, University of Arizona

Project: "The Vanishing of Consonant Clusters in the Phonological History of Vietnamese"

Advisor: Dr. Amy Fountain

- Goals: To determine the rate at which Modern Vietnamese has lost almost all of the syllable-initial consonant clusters that were found in Middle Vietnamese.
- Results: Derived the sounds of Middle Vietnamese based on texts written in Vietnamese's old logographic script, as well as Latin-Vietnamese dictionaries by European missionaries between the 16th and 18th century. Comparison of the text corpus to modern Vietnamese dialects in search of phonological differences is ongoing.

LEADERSHIP EXPERIENCE

Astronomy Club President

Nov 2021-present

University of Arizona's Astronomy Club

- Leads the Astronomy Club of the University of Arizona, a student club with 101 currently active members that include both Astronomy and non-Astronomy majors.
- Tasks include running weekly Friday meetings; organizing bonding activities for club members such as science fiction reading nights and spring trips; coordinating public outreach events at local K-12 schools; working with faculty advisors to address issues of diversity and equity.

Panel Discussion Leader

Aug 2021-present

Tucson Initiative for Minoritized Student Engagement in Science and Technology Program (TIMESTEP), University of Arizona

- Volunteers as a panel leader at TIMESTEP, a biweekly discussion group that focuses on topics of professional development for UArizona undergraduate students in STEM.
- Shares advice on how to navigate through the stress of academia as a student from marginalized communities; makes suggestions to program organizers about discussion ideas that can help more struggling students.

WORK EXPERIENCE

Science Journalist

Mar 2021-present

Tia Sáng Magazine, Ministry of Science and Technology of Vietnam

- Contributes as a writer specialized in astronomy to the science magazine *Tia Sáng*, published in Vietnamese both in print and online.
- Topics of published articles include an overview of the chemical tagging method in the hunt for solar siblings, the importance of ancient East Asian astronomical records in

supernova research, and how dwarfs lacking in dark matter complicate the current definition of galaxy.

Undergraduate Telescope Operator

Aug 2021-present

Steward Observatory, University of Arizona

- Operates the 21" Raymond E. White, Jr. Telescope at Steward Observatory on campus for members of the public and for UArizona students completing class assignments for the General Education program.
- Tasks include controlling the 21" telescope with XEphem; reporting dome and telescope conditions; monitoring weather hazards; engaging in science communication with the public by introducing astronomical objects in scientific and cultural contexts.

Literary Translator

Aug 2019-May 2021

Tucson, AZ

- Translated the 18th-century novel-in-verse *Tale of Kiều* from traditional Vietnamese poetic forms into English heroic couplets; consulted scholarly works in English, French and Vietnamese; undertook corpus-based linguistics studies and provided 291 endnotes to ensure that the English reader can appreciate the literary, cultural and social significance of the poem.
- Full translation published in Vietnam in December 2021 by the Writers' Association Publishing House as *The Tale of Kiều: A New Cry of Heart-Rending Pain*.

TALKS & LECTURES

"Sex Work in *The Tale of Kiều*, a Medieval Vietnamese Poem"

Nov 19 & 22, 2021

RSSS 311 ("*Love for Sale: Fallen Women in Art and Literature*"), University of Arizona

- Invited by Dr. Colleen Lucey to give two lectures to a class of 30 undergraduate students on the depiction of sex work in *The Tale of Kiều*, a medieval Vietnamese novel-in-verse.
- Assigned translated excerpts as required readings; organized group discussions; drew comparisons to European literature and third-wave feminist theory; highlighted the progressive ideas of the poem.

Astronomical Linguistics

Sep 17-Dec 3, 2021

University of Arizona's Astronomy Club

- Delivered a weekly presentation series titled *Astronomical Linguistics* at Astronomy Club meetings that explored astronomical traditions from a historical linguistics perspective.
- Presentation topics included: the association between Venus and war in Maya glyphs; the role of settler colonialism on the loss of O'odham star lore; how the names of the Sun in Southeast Asian language families are evidence of historical language contact.

OTHER ACTIVITIES

Vaccination Site Volunteer

Apr-May 2021

University of Arizona COVID-19 State Vaccination Site, Pima County

- Participated as a non-medical volunteer in the State of Arizona's plan to vaccinate everyone eligible for the COVID-19 Pfizer and Moderna vaccines in Pima County.
- Tasks included directing traffic flow at the drive-through vaccination site, observing newly vaccinated individuals, and registering them for their second dose.

SELECTED PUBLICATIONS

Translation

Binh, N., 2021. *The Tale of Kiều: A New Cry of Heart-Rending Pain*, translated from the Vietnamese of Nguyễn Du. Hanoi: Writers' Association Publishing House.

Poetry

"First Lagrangian Point." *Euphony*, literary journal of the University of Chicago. Accepted for publication.

"Newton." *Persona*, literary journal of the University of Arizona. Accepted for publication.

"The Dome's Goodbye", read at The University of Arizona Department of Astronomy and Steward Observatory's Graduation Ceremony, May 13, 2021.

"Phòng tường trắng" [White-Walled Room]. *Viết & Đọc*, quarterly anthology of the Vietnamese Writers' Association. Spring 2020. 143-158.

Science communication

Binh, N., 2021. Hướng tới một định nghĩa thiên hà mới (Kỳ 3) [Towards a new definition of galaxy (Part 3)]. *Tia Sáng*, 20(19), p.40-42.

Binh, N., 2021. Hướng tới một định nghĩa thiên hà mới (Kỳ 2) [Towards a new definition of galaxy (Part 2)]. *Tia Sáng*, 20(17), p.28-30.

Binh, N., 2021. Hướng tới một định nghĩa thiên hà mới (Kỳ 1) [Towards a new definition of galaxy (Part 1)]. *Tia Sáng*, 20(16), p.50-52.

Binh, N., 2021. Gắn nhãn hóa học: một phương pháp truy tìm anh chị em của Mặt Trời [Chemical tagging: a method of searching for the Sun's siblings]. *Tia Sáng*, 20(15), p.23-25.

Binh, N., 2021. Frank Kameny - chiến sĩ của những dải cầu vồng [Frank Kameny, fighter for rainbows]. *Tia Sáng*, 20(12), p.43-46.

Binh, N., 2021. Thiên văn học hiện đại biết được gì từ sử liệu phương Đông? [What can modern astronomy learn from East Asian historical records?]. *Tia Sáng*, 20(7), p.35-38.

Binh, N., 2021. Chuyện về 13 người phụ nữ bị tước cơ hội bay vào vũ trụ [How 13 women were deprived of the chance to fly into space]. *Tia Sáng*, 20(6), p.30-32.

Visual art

"The Wine-Dark Sea." *The Art of Planetary Science*, exhibition of The Lunar and Planetary Laboratory. Fall 2020.

Essays

"Bài toán đường tiệm cận khi dịch *Truyện Kiều*" [The asymptote problem in translating *The Tale of Kiều*]. *Viết & Đọc*. Summer 2021. 268-272.

LANGUAGES

Vietnamese: Native; English: Near-native; French: Advanced