

# PHU-HUY NGUYEN

Hanoi, Vietnam

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## Research Interest

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Cosmology, Large-Scale Structure, CMB, Extragalactic Astrophysics

## Education

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### University of Rome Tor Vergata

*Erasmus Mundus Joint Master Program in Astrophysics and Space Science (MASS)*

Track: *Gravitation and Cosmology*

Sep. 2025 – Current

Rome, Italy

### University of Science and Technology of Hanoi

*Master 1 in SPACE: Earth Observation, Astrophysics, and Satellite Technology*

GPA: 16.13/20 (3.52/4) - 1st rank

Thesis: 17.8/20

Oct. 2024 – Sep. 2025

Hanoi, Vietnam

### University of Science and Technology of Hanoi

*Bachelor in Space Science and Satellite Technology, Minor in Astrophysics*

GPA: 16.22/20 (3.54/4) - 4th rank

Thesis: 18.2/20

Sep. 2021 – Aug. 2024

Hanoi, Vietnam

## Research Experience

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### Robust inference of cosmological extra-galactic dipoles:

checking for contamination with multiwavelength observations | *Bachelor Internship*

Apr. 2024 - Current

Supervisor: Dr. Calum Murray, Dr. Cyrille Rosset (Astroparticle and Cosmology Laboratory (APC))

- Investigated the isotropy and homogeneity of the universe and Solar System's acceleration by robustly measuring the dipole in the proper motion of quasars with simulation-based inference.
- Addressed the systematic biases and contamination, and employed multiwavelength observations to improve the accuracy.

### Physical properties of an early Universe galaxy observed by the James Webb Space Telescope | *Master 1 Internship*

Jun. 2025 - Sep. 2025

Supervisor: Dr. Pham Tuan Anh (Vietnam National Space Center (VNSC))

- Investigated the morphology and physical properties of a galaxy at redshift  $z = 6.11$
- Discovered that this is a multi-clumps low-mass starburst galaxy

### Impacts of Supermassive Black Hole Feedback on Galaxy Formation | *Group Project*

Oct. 2023 - Feb. 2024

Supervisor: Dr. Nhut Truong (NASA)

- Explored the effects of SMBH feedback on baryonic components of present galaxies based on analyzing simulated data from the IllustrisTNG simulation.
- Examined the relationship between SMBH and galaxies' properties.

### The First Cosmological Turbulence | *ASIAA Summer Student Program*

Jun. 2023 - Oct. 2023

Supervisor: Dr. Ke-Jung Chen (Academia Sinica Institute of Astronomy and Astrophysics (ASIAA))

- Studied the effects of primordial turbulence on the formation of the first structure using simulations.
- Utilized the ENZO code to simulate the early universe.

## Internship/Conference/Workshop/Camp

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### Rencontres du Vietnam: Cosmology 2025

Aug. 2025

Speaker

ICISE, Quy Nhon, Vietnam

- Talk: Cosmology with Quasar Proper Motions: Constraining Anisotropic Expansion of the Universe

### The 2025 SAGI Astrophysics Workshop

May. 2025

Speaker

ICISE, Quy Nhon, Vietnam

- Talk: Probing our Peculiar Acceleration using Quasars' Proper Motion Observation

### A Future Space Mission With Very High Precision Astrometry

Sept. 2024

Participant

Institute d'Astrophysique de Paris, Paris, France

### SAGI 2nd Workshop on Dust Polarimetry and Applications in Astrophysics

Nov. 2023

Participant

ICISE, Quy Nhon, Vietnam

## Honors & Awards

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### Erasmus Mundus Joint Master Scholarship

May. 2025

### USTH Merit Scholarship

2022-2024

University of Science and Technology of Hanoi

### USTH Internship Scholarship

Nov. 2023

University of Science and Technology of Hanoi

### Rector's Certificate for students with outstanding achievement

Dec. 2022

University of Science and Technology of Hanoi

### Second Prize in National Student Physics Olympiad

Oct. 2022

## Technical Skills

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Languages: Python, C, Matlab, ROOT

Technologies/Frameworks: Linux, High-performance computing, Parallel Computing

Others: LaTeX

## Languages Skills

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Vietnamese: Native

English: C1

French: A2

## Extracurricular

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### Training for USTH National Student Physics Olympiad team

Oct. 2023 – Nov. 2024

Coach

University of Science and Technology of Hanoi

- Conducted comprehensive physics review sessions for students preparing for the competition.
- Designed mock exams to evaluate and improve students readiness for the competition.

### USTH SpaceTalk

Sep 2022 – Sep. 2023

Organizing committee

University of Science and Technology of Hanoi

- SpaceTalk is a monthly seminar given by experts in the field of Astrophysics, Remote Sensing, and Satellite Technology at the University of Science and Technology of Hanoi

## References

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**Dr. Calum Murray, CEA-Saclay/Université Paris Saclay:** [calum.murray@cea.fr](mailto:calum.murray@cea.fr)

**Dr. Pham Tuan Anh, VNSC:** [ptanh@vnsc.org.vn](mailto:ptanh@vnsc.org.vn)

**Dr. Ke-Jung (Ken) Chen, ASIAA:** [kjchen@asiaa.sinica.edu.tw](mailto:kjchen@asiaa.sinica.edu.tw)