

Fuda Nguyen

Nguyễn Phúc-Đạt (Fuda)
Email: fudanguyen@email.arizona.edu
Website: fudanguyen.wordpress.com
ADS: [Fuda Nguyen](#)

Interests: Exoplanet Atmosphere, Transmission Spectroscopy, Radiative Transfer, Numerical Simulation, Magnetic Fields

EDUCATION & AWARDS

Doctor of Philosophy in Planetary Astronomy and Science

Lunar & Planetary Laboratory, University of Arizona

2022 – Present

- Advisor: Prof. Daniel Apai

Bachelor in Space Science & Engineering

Department of Physics, Vietnam National University, International University (IU-VNU)

2016 – 2020

- GPA: 85.2/100 (3.77/4.0), Class rank: Top 2.
- **Thesis:** “Modeling High-J CO Line Profiles in Shocks”
- Dean List & Scholarship 2017-2019

Awards

- Vietnam Education Foundation VEF2.0 Fellowship, 2021
- Silver Prize, University Physics Competition (UPC), 2019

EXPERIENCE

Graduate Research Assistant

08/2022 – present

Lunar & Planetary Lab, University of Arizona

- Advisors: Prof. Daniel Apai
- Exoplanets: Exoplanets & brown dwarfs rotational mapping as part of the Other Earth collaboration.

Post-bacc Researcher

05/2020 – 12/2021

NASA Ames Research Center

- Advisors: Dr. Tram Le, Dr. William Reach.
- ISM & Star Formation: Modeling shocked gas in supernova-remnants with optically-thick radiative transfer model for magnetic-driven, low-velocity MHD shock and working with SOFIA observation. (Remote due to COVID.)

Project Lead

06/2021 – present

Vietnam Astronomy Research NETwork (**VARNET**)

- Advisors: Prof. Thiem Hoang, Dr. Tram Le and VARNET
- Exoplanets & Dusts: Leading the exoRAT project on modeling porous dust evolution in hot-Jupiter atmospheres considering the effects of Radiative Torque and Radiative Torque Disruption. Investigate dust size distribution and aligned dust polarization.
- ISM & Star Formation: Tracing star-formation and shocks in supernova-remnants, and magnetic fields of star forming region with molecular emission and polarimetry.

Data Scientist

07/2021 - 04/2022

FPT Software Ho Chi Minh

- Machine Learning: Building, optimizing and evaluating machine learning models for time-series prediction.

Research Intern

06 – 09/2019

Korean Astronomy & Space Science Institute

- Galaxies Cluster: Identifying high-z galaxy clusters and constrain galaxy evolution in the AKARI North-Ecliptic-Pole Field. Internship grant of \$2000. Advisor: Prof. Woong Jeong-Seob.

Research Project

04 – 06/2019

International University & Vietnam National Space Center

- Remote Sensing: Classifying mangrove land cover in the Mekong Delta with the vegetation red-edge. Investigate mangrove loss and aquaculture growth.

Research Intern

01 – 03/2019

Institute of Space & Astronautical Science, JAXA

- Galaxies cluster: Determining environmental effects on cluster galaxy evolution in the AKARI NEP Field. Advisor: Prof. Hideo Matsuhara.

Research Intern

06– 09/2017

Academia Sinica Institute of Astronomy & Astrophysics, Taiwan

- Instrumentation: Characterizing and testing the performance of the fibre-optics Prime Focus Spectrograph of Subaru Telescope. Award of \$1500 as part of Summer Student Program.

PUBLICATIONS**1st-author Publications**

1. **N. Fuda**, N. Chau Giang, T. Hoang, L. N. Tram, P. N. Diep, G. B. Truong Le, N. T. Phuong, N. Dieu D. (2021), “*Radiative Torques on Porous Grains of Exoplanet Atmosphere.*” in prep.
2. **N. Fuda**, L. N. Tram, W. Reach (2021), “*Modeling CO Line profiles in shocks of W28 and IC443 from infrared and sub-millimeter observation.*”, submitted to ApJ, [arXiv:2112.03349](https://arxiv.org/abs/2112.03349)

Nth-author Publications

1. D. T. Hoang, N. Bich Ngoc, P. N. Diep, L. N. Tram, T. Hoang, W. Lim, N. Dieu D., N. Le, N. T. Phuong, **N. Fuda**, T. Van Bui, K. Pattle, Kate, G. B. Truong Le, H. Phan, N. Chau Giang (2021). “*Studying magnetic fields and dust in M17 using polarized thermal dust emission observed by SOFIA/HAWC+*”, submitted to ApJ, [arXiv:2108.10045](https://arxiv.org/abs/2108.10045)
2. T. Bao, L. N. Tram, T. Hoang, N. Chau Giang, P. N. Diep, N. Dieu, N. T. Phuong; D. T. Hoang, N. Bich Ngoc, **N. Fuda**, P. H. Nguyen, T. Van Bui (2021). “*Modeling extinction and reddening effects by circumstellar dust in the Betelgeuse envelope in the presence of radiative torque disruption*”, submitted to ApJ, [arxiv:2110.11777](https://arxiv.org/abs/2110.11777)

CONFERENCES & SCHOOLS**VARNET First Annual Workshop 2021**

12/2021

Talk: “*Radiative Torque on Porous Grains of Exoplanet Atmosphere*”, Abstract p.14**Summer Sagan Workshop 2021**

07/2021

Workshop on disks and atmospheres

European Astronomical Society Annual Meeting 2021

06/2021

Session Facilitator

SOFIA Science Series 3: Magnetic Fields

06/2021

Talk: “Modeling of CO Emission in Shocks of W 28 and IC 443”.

American Astronomical Society Annual Winter Meeting 236th

01/2021

Poster: “Modeling CO Emission in the Shocks of Supernova-Remnant IC 443”.

TEACHING & MENTORING

Teaching Assistant

Spring 2020

Data Analytics in Remote Sensing Class

Mentor, Introductory Astronomy

2018 – 2020

IU Astronomy Club

SKILLS & OUTREACH

Programming Languages

Python, scikit.learn, Pandas, Fortran, MATLAB, R, Google Earth Engine, QGIS, \LaTeX , Linux/UNIX

Languages

English (Fluent, TOEFL: 114/120), Vietnamese (Native)

Outreach

Writings and Talks

- Fulbright STEM Club Talk, Fulbright University Vietnam 09/2021
- Clubhouse Talk, Space Generation Advisory Council, “Far from Alienated: Unraveling astrobiology on exoplanets”, 08/2021
- Article, Tia Sang Magazine, “The Journey To Find Life on Mars with Perseverance Rover ”, 04/2021
- Article, Tia Sang Magazine, “Oumuamua: Extraterrestrial Visitor and Terrestrial Biases”, 03/2021

REFERENCES

Tam Dao, PhD.

tam.dao@rmit.edu.au

Research Fellow, SPACE Research Center, Royal Melbourne Institute of Technology

Tram Le, PhD.

ntle@mpifr-bonn.mpg.de

Research Fellow, Max Planck Institute for Radio Astronomy
& SOFIA Science Center, NASA Ames Research Center

William Reach, PhD.

wreach@sofia.usra.edu

Science Advisor, SOFIA Science Center, NASA Ames Research Center
Deputy Director, Universities Space Research Alliance

Thiem Hoang, PhD.

thiemhoang@kasi.re.kr

Professor, University of Science and Technology (UST), Korea
Researcher, Korean Space Science and Astronomy Institute