

Simin Tong

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🏠 <https://simintong.github.io/home>

EDUCATIONAL BACKGROUND

Leiden University

M.Sc., Astronomy Research

GPA: 8.0/10.0 (Dutch scale); 3.92/4.00 (US scale)

Leiden, the Netherlands

Sept. 2020- Aug.2022 (expected)

Leiden University

Pre-Master, Astronomy

GPA: 8.3/10.0 (Dutch scale); 4.00/4.00 (US scale)

Leiden, the Netherlands

Sept. 2019- Aug. 2020

Jilin University

B.Sc., Physics and LL.B., Law

Physics: GPA: 90.28/100.00, Top 5%

Jilin, China

Sept. 2015 -Jun. 2019

RESEARCH EXPERIENCES

Protoplanetary Disk Survey in Serpens Star-forming Region

Sept. 2021-Present

Leiden Observatory, the Netherlands

Supervisor: Dr. (Nienke) van der Marel

- Performed individual data reduction on ALMA observations of ~ 300 young stellar objects (YSOs) from Serpens star-forming region using CASA (the Common Astronomy Software Applications package).
- Analyzing continuum flux densities and CO line emission from targets using CASA tasks as well as self-written Python scripts.
- Will statistically study YSOs and disks around them in Serpens.

ALMA Archive Mining of High-mass Star Formation

Sept. 2020-Present

Leiden Observatory, the Netherlands

Supervisor: Prof. Dr. (Michiel) Hogerheijde, Dr. (Aida) Ahmadi, Prof. Dr. (Serena) Viti

- Constructed inventories of ALMA projects on broad topics of high-mass star formation by mining ALMA science archive with a Python package *ALminer*.
- Performed individual data reduction on ALMA observations towards a high-mass star using CASA.
- Identified potential molecular species in the system and working on spectral modelling using CASSIS.

Dusty Gaps in 2.5-dimensional Protoplanetary Disks

Jul. 2019-Aug. 2019, Jun. 2020-Sept. 2020

Institute of Astronomy and Astrophysics, Academia Sinica, Taipei

Supervisor: Dr. (Min-Kai) Lin

- Simulated the evolution of 2.5-dimensional disks with dust density bumps via Fargo3D.
- Analysed the output data by scripts written in Python.

Effect of Irradiation from Proto-stars on the Evolution of Protoplanetary Disks

Jan. 2019-Jun. 2019

Center for Theoretical Physics, Jilin University (JLU), China

Supervisor: Prof. Dr. (Liping) Jin

- Improved a closed source code for the evolution of the protoplanetary disk written in Fortran by modifying the relation between the stellar luminosity and stellar mass.
- Studied the outcome generated by numerical simulations before and after modifications comparatively.

HIGHLIGHTS FROM ADDITIONAL PROJECTS

Observational projects

- In graduate-level course *Radio Astronomy*:

The GPA conversion is made using <https://www.scholaro.com/gpa-calculator/>, recommended by University of Michigan.

- Observed HI 21-cm line from the Galaxy by a simple device (collaborated with 2 group members) and 1) conducted Y-method calibration and smoothed the detected spectrum; 2) roughly estimated the mass of the Milky Way from the detected HI 21-cm line.
- Wrote mock VLA proposal and performing data reduction on VLA observations towards galaxy cluster PSZ1 G108.18-11.53 (collaborated with 2 group members)
- In undergraduate-level course *Astronomy Laboratory and Observing Project*: Wrote observing proposal, did proposal rating, planned for observations (which were finally cancelled due to the pandemic), conducted data reduction (collaborated with 5 other group members).
 - Analysed and modelled the light curve of an exoplanet candidate with a Python package BATMAN for the data reduction part.

Theoretical Projects

- In graduate-level course *Stellar Structure and Evolution*: Studied the evolution of a $2M_{\odot}$ star of solar composition from pre-main sequence to white dwarf by running numerical simulations via MESA.
- In graduate-level course *Exoplanets: Atmospheres and Interiors*: Studied effects of irradiation from central stars on the interiors and evolution of low-mass planets with an envelope made by H and He by running numerical simulations via MESA.

ADDITIONAL ACADEMIC ACTIVITIES

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| • Sagan Exoplanet Summer Virtual 2021 (virtually at Pasadena, US) | Jul. 2021 |
| • Summer School on the ISM of Galaxies (virtually at France) | Jul. 2021 |
| • The 4th SKA Summer School (Shanghai, China) | Jul. 2018 |
| • Intern at Institute of Physics, Chinese Academy of Sciences (Beijing, China) | Jan. 2018 |
| • Summer student at Shanghai Astronomical Observatory (Shanghai, China) | Jul. 2017 |

AWARDS

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| • Leiden Science China Scholarship (declined) | 2019 |
| - 25% waiver of the non-EU/EEA tuition fee | |
| • Outstanding Undergraduate Thesis Award | 2019 |
| • Dean's Scholarship | 2019 |
| - the highest honor for undergraduate students at the Department of Physics, JLU | |
| • Outstanding Graduate in Jilin University | 2019 |
| • College Excellent Student Leader | 2019, 2018 |
| • College Excellent Student | 2019, 2018, 2017 and 2016 |
| • University Second Class Scholarship | 2019, 2018 and 2016 |
| • Chinese Academy of Sciences Undergraduate Scholarship | 2017 |
| • University Excellent Student Leader | 2017 |
| • University First Class Scholarship | 2017 |

SKILLS

- Python, L^AT_EX, CASA, R(basic), Fortran(basic), HTML&CSS(basic)

LANGUAGES

- Mandarin (Native Proficiency); English (Professional Proficiency); Japanese, Dutch and German(Elementary Proficiency)