Simin Tong

Niels Bohrweg 2, 2333 CA Leiden, the Netherlands
tong@strw.leidenuniv.nl +31 0627566898 https://simintong.github.io/home

EDUCATIONAL BACKGROUND

Leiden University **Leiden, the Netherlands**
M.Sc., Astronomy Research *Sept. 2020- Aug.2022 (expected)*
GPA: 8.0/10.0 (Dutch scale); 3.92/4.00 (US scale)

Leiden University **Leiden, the Netherlands**
Pre-Master, Astronomy *Sept. 2019- Aug. 2020*
GPA: 8.3/10.0 (Dutch scale); 4.00/4.00 (US scale)

Jilin University **Jilin, China**
B.Sc., Physics and LL.B., Law *Sept. 2015 -Jun. 2019*
Physics: GPA: 90.28/100.00, Top 5%

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 $\sim$ 120 young stellar objects (YSOs) from Serpens star-forming region using `CASA` (the Common Astronomy Software Applications package).
- Analyzed the continuum flux from targets using CASA tasks `uvmodelfit` and `imfit` as well as the self-written `Python` script.
- Imaging and analyzing late-delivered other $\sim$ 200 YSOs; and 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.
- Comparatively studied the outcome given by numerical simulations before and after modifications.

ADDITIONAL PROJECTS

Observational projects

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

- In graduate-level course *Radio Astronomy*:
  - 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

- 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

- 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`, LaTeX, `CASA`, `R`(basic), `Fortran`(basic), `HTML&CSS`(basic)

LANGUAGES

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