# Jiashu Pan

jspan@smail.nju.edu.cn · (+86) 189-5530-6370

## Education

**Nanjing University (NJU)**, Nanjing, China 2018 – 2023

*Bachelor student* in Astronomy (Astrophysics),
GPA: 4.39/5.00 (3.42/4.00)
TOEFL: 106 (R 30 L 28 S 23 W 25)

## Referred Articles

### The Scaling Law in Stellar Light Curves

**Jia-Shu Pan**, Yuan-Sen Ting, Yang Huang, Jie Yu, Ji-Feng Liu
We show that self-supervised learning of stellar light curves using GPT-2 architecture exhibits neural scaling law, surpassing current supervised methods. Based on representations learned by GPT-2 XL, a simple MLP can be 3-10 times more sample efficient than a specialized transformer trained from scratch.

### Astroconformer: The Prospects of Analyzing Stellar Light Curves with Transformer-Based Deep Learning Models

**Jia-Shu Pan**, Yuan-Sen Ting, Jie Yu, *Monthly Notices Royal Astronomical Society*
We introduce self-attention mechanism and conformer architecture to characterize stellar properties using *Kepler* light curves. Astroconformer outperforms a k-NN-based method and advanced CNNs. Astroconformer can constrain $\nu_{\rm max}$ to 3% using 30-day light curves, while asteroseismic pipeline fails in 30% cases.

### Astroconformer: Inferring Surface Gravity of Stars from Stellar Light Curves with Transformer

**Jia-Shu Pan**, Yuan-Sen Ting, Jie Yu, *International Conference Machine Learning (ICML) ML4Astro Workshop*

### A PeVatron Candidate: Modelling the Boomerang Nebula in X-ray Band

Xuan-Han Liang, Chao-Ming Li, Qi-Zuo Wu, **Jia-Shu Pan**, Ruo-yu Liu, *Universe*
We simulate the diffusion and advection of relativistic electrons to explain the X-ray profile of the supernova remnant G106.3+2.7.

## Programming Skills

- Proficient: Python (Pytorch), LaTex
- Familiar: C, Fortran, Matlab, MPI, CUDA

## References

- **A/Prof. Yuan-Sen Ting** Australian National University
  yuan-sen.ting@anu.edu.au
- **Dr. Jie Yu** Max Planck Institute
  yujie@mps.mpg.de
- **AP. Ruo-Yu Liu** Nanjing University
  ryliu@nju.edu.cn