

SHAO Summer Internship Logging: 1

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This is the first day I started my internship, in brief, we have a draft plan of my tasks and I continued to gain background knowledge of pulsar search.

The plan is mainly separated into three stages: re-establish the results in Mengyao's paper, perform blind search, and evaluate the methods for better search ability.

I have read through the paper: A Census of Southern pulsar at 185 MHz to get a general idea of how astronomers identified over 50 pulsar profiles and their parameters. Moreover, the procedure of processing the data is learnt, but not completely clear. Confirmation is needed.

PRESTO is a toolkit to explore and search for pulsar. It is a Python written program that is free to use. I have checked the user manual of this program and followed for a few steps, I recognized that the procedure is quite different from what I am going to do in the cluster, I believe the data I need to process is processed data. Nevertheless, it is beneficial to learn how does PRESTO works.

Jodrell Bank Observatory has well-written resources about Pulsars. I have been reading information about the history of pulsar search, pulsar as radio sources, life of pulsars, pulsar observation, importance of searching pulsars. These will assist me to write the background section in the project proposal.

Getting the access to the cluster is very helpful for me to familiarize the working environment. There are different observation ID (OID) which each can contain one or more pulsars, I should at least be able to identify one significant pulsar source in the each OID. The significant pulsars can be referred to Mengyao's paper.

To conclude, I am going to work on the project proposal, background understanding, familiarize working environment, testing pulsar detection methods. Our goal is to reach second stage in the second week. I appreciate all the help from Prof. An, Prof. Zhang, and Dr. Guo.