

Fermilab Tianlai Workshop 2016

September 26/27

The program and slides are posted:

[https://indico.fnal.gov/conferenceOtherViews.py?
fr=no&showSession=all&detailLevel=contribution&confId=12927&view=stand
ard&showDate=all](https://indico.fnal.gov/conferenceOtherViews.py?fr=no&showSession=all&detailLevel=contribution&confId=12927&view=standard&showDate=all)

Reza's Notes

o Tianlai observation strategy:

- Once the various technical problems have been solved, it has been suggested to take few days - few weeks of data with both instruments (Cylinders + dishes) with the current configuration of the instrument, with the central frequency around 750 MHz. Several constant declination scans (5-7) should be made with the dishes, pointed near the zenith - exact delta values should be chosen depending on the distribution of bright radio-sources.

It would be good also to repeat each constant declination scan at least 2 times (meaning that 2-4 weeks would be necessary to complete the observations).

Electronic filters and LO frequency could then be changed for the TWO instruments (Cylinders & Dishes) to tune observation frequency to make the instruments sensitive to Milky Way HI emission (maybe 1325-1425 MHz or 1330-1430 MHz).

It is suggested to have a first observation campaign with the two instruments to observe a band of 15-20 deg declination near the zenith (dishes) - The observation band should be chosen to enable observation of few nearby galaxies. Observation of Andromeda galaxy (M31) has been also suggested.

The Dish array could then be used to observe the NCP (North Celestial Pole), deep observation of $\sim 100 \text{ deg}^2$ ($\delta > \sim 83-85 \text{ deg}$) , around the north pole. Albert suggest that a NCP optical survey should be carried out to cross-correlate

o **Fermilab Tianlai Analysis Center**

- Peter announces that an NSF grant has been awarded (PI: Timbie/UW, Col: Stebbins) - 3 year grant, ~ 300 K\$ / year) that will be used to cover the expenses for a **postdoc** and to setup the Tianlai Analysis Center

http://www.nsf.gov/awardsearch/showAward?AWD_ID=1616554&HistoricalAwards=false

- The computing services offered by the Fermilab have been presented and discussed

- Different options for data transfer have been discussed: shipping hard disk drives, transfer through the network...

- could use Fermilab facilities for archiving data, sharing

- maybe more cost effective in the near term to use our own disks - Jeff has volunteered to host this hardware at CMU

- still can ask FNAL computing staff for advice on submitting jobs to OSG

- We have to setup a light infrastructure to access easily the data, as well as a software framework

- Partners are invited to contribute to this effort

- Xuelei asks to have a collaboration agreement to be written - defining the data access rules and authorship for the scientific papers. An MoU.

o **Tianlai white paper**

- the use and opportunity of writing a white paper is discussed - Such a document, posted to arXiv can help to advertise the Tianlai project - Xuelel says that he has published already a popular article about Tianlai that can be used as a basis for the white paper. The observation strategy for Tianlai can be briefly discussed in this paper.
- Peter is the chief editor for the white paper