

Shanghai Station Report

1. Observations

Tianma 65m participated in the EVN session III in 2017 and also participated in the EVN session I in 2018.

The first K-band observation had taken placed in October 2017.

The first K-band real time fringe had been got in February 2018 (RP030B).

2. Development and maintenance activities in 2018

2.1 Seshan 25m:

We met some hardware problem with DBBC2 in sheshan 25m. Maintenance was delayed due to some customs problems. All observations had performed with CDAS. The Field System was 9.10.4.

2.2 Tianma 65m:

An DBBC2 with a Mark5B+ recorder works normally in the Tianma 65m. The DBBC2 is running on firmware V105E_2. The Field System was 9.11.8.

We had planned to buy the Fluxbuff with Tianma 65m recently. Many tests will be conducted in succession

2.3 Shanghai (Seshan 25m & Tianma 65m)has upgraded all Mark5s to SDK 9.2.

We also had some problem with the 32TB packs. We have planned to upgraded the SDK with Mark5B+ recently.

2.4 Currently, the TMRT L-band receiver has some polarization issue which might be caused by the phase difference in front of the 90° hybrid inside the warm electronics unit. Linear or circular polarization using the microwave switch can be chosen for the TMRT L-band receiver which leads to the system complexity and instability. SHAO microwave technology lab will have some actions to the L-band receiver as follows: (1) Remove the linear polarization function to keep the system simple and robust. (2) Another next-generation compact L-band receiver with several narrow-bandwidth channels will also be considered to deal with the increasingly serious radio frequency interference problem. (3) The polarizer of the new L-band receiver will use an ortho-mode transducer and a 90° hybrid in front of the cryogenic LNA inside the cryostat.

3. e-VLBI

More than ten e-VLBI experiments among the EVN have been carried out in 2017 at a data rate of 1024 Mbps for each e-VLBI session.

With the network upgrading by CSTnet, Tianma 65m have got the 2Gbps bandwidth in this February.

4. Prospects

For the upcoming session II & III, Tianma 65 will participate in L ,C, X, K and Q

band observations.