



Two new 40m Radio Telescopes and major upgrades of TMRT

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Two new 40m radio telescopes are constructed by Shanghai Astronomical Observatory (SHAO) to extend the baselines and capabilities of Chinese VLBI Network (CVN). One telescope is located in the west of Shigatse, the second largest city in Tibet. The other telescope is near by the Changbai Mountain in the north-east of China. The baseline between two new telescopes is around 3800 kilometers which will replace the baseline of Shanghai-Urumqi as the longest one in CVN. Each telescope has a main reflector of 40 meters in diameter with full solid panels and frequency coverage from 0.7 GHz to 50 GHz. SHAO has a plan to start the construction of antenna foundation on both telescope sites in the spring of 2023. The S/X band receiver will be firstly installed on the telescope and join the VLBI observation in 2025. Two new 40m radio telescopes are designed and operated for general purpose for astronomy and will play an important role in CVN.

The Tianma radio telescope (TMRT) achieved its first light on October 26, 2012. In its first decade, TMRT became familiar to scientists worldwide and produce huge scientific observations in single dish mode and VLBI mode. Two major upgrades in TMRT is a seven beams K-band receiver and a K/Q/W triple-band receiver. The latest development status and results will be reported here.