

Proposal Abstract:

We propose FAST observations of the Globular Cluster (GC) NGC 6254 (M10) to complete the timing analysis of the pulsars therein. Using archived FAST observations, we have obtained preliminary orbital parameters of the two binary pulsars, M10A and M10B, discovered by Pan et al. (2021). Both pulsars exhibit moderate to high orbital eccentricities, especially M10B with a low-mass companion, which is unusual in such old stellar systems. Currently, we are unable to remove JUMPs in timing, yearning more continuous observations for precise orbital (post-Keplerian) solutions, as well as accurate coordinates and period derivatives, thereby to understand the dynamical formation and evolution of pulsar binaries in dense GCs.