Proposal Abstract:

We propose to use the FAST for the timing and searching of pulsars in Globular Cluster (GC) NCG 6517. With the high sensitivity of the FAST, we discovered 16 new pulsars in NGC 6517, bringing to a total of 20 known pulsars in this cluster. With these discoveries, NGC 6517 is currently the GC with the most known pulsars in the FAST sky (Ranking third among all GCs). We have obtained the phase-connected timing solutions of PSRs J1801-0857A-O (also known as NGC 6517A-O), but not yet for PSRs J1801-0857P-U (also known as NGC 6517P-U), with all archival data from FAST. These pulsars, for which phase-connected timing solutions have not yet been obtained, are only likely to be detected in observations of more than 2 hours. The timing solutions of all pulsars in this cluster is the key to further understand the dynamics of the cluster. We may find new pulsars with more observations of longer duration to account for both scintillation and intrinsic sensitivity.