

Proposal Abstract:

We propose the FAST observation to the Globular Cluster (GC) M71 which hosts 5 currently known pulsars. The two most promising targets are M71D, which should have a neutron star companion, and M71E, which is the binary millisecond pulsar in the 53-minute orbit. More observations are needed to measure the post-keplerian parameters of M71D to obtain the mass values of each companion. Continuing timing M71E would bring the chance to measure its orbital period derivative to determine its evolution stage. In addition, M71B and C are the two binaries with longest orbital periods among all the GC pulsars, while M71A is an eclipsing black widow discovered by Arecibo. All these five exotic pulsars can be observed at the same time by FAST. The observation will also bring the chance to find new pulsars.