

Proposal Abstract:

Neutron star low-mass X-ray binary (NS LMXB) is composed of a neutron star and a low-mass companion in the main sequence. This project aims at observing NS LMXBs in the FAST field of view taking advantage of the high sensitivity of FAST. (Quasi-)Simultaneous X-ray observations will be carried out during FAST observing windows if feasible. We propose to perform FAST observations of 40 NS LMXBs, which are located in the field of view of FAST, with each observation lasting 0.5 hr, when they transit from X-ray outbursts to the quiescent state. These observations will allow us to capture the transition from the accretion power to the MSP phase and understand the mechanism of transition.