

Proposal Abstract:

By combining the Fermi catalogue and the single-lined spectroscopic binaries (SB1s) of Gaia DR3, we discover some spider pulsar binary candidates, which is recommended as targets for FAST to detect pulsed signals. Furthermore, the light-curve characteristics of these candidates are consistent with spider pulsar binary system that its non-degenerate companion is significantly heated by the pulsar, which shows extra evidence for these candidates as spider pulsar binary. If these candidates is confirmed as spider pulsar, the formation of millisecond pulsar (MSP) for system is hard to understand in the standard recycling scenario due to a small filling factor, but it can be explained in the scenario of accretion-induced collapse (AIC) of an ONeMg white dwarf. In addition, if the radio pulsation is detected, these system will provide an opportunity to measure precisely the MSP mass.