

Proposal Abstract:

The mass distribution of neutron stars at their birth masses contains information about the supernova explosion mechanisms. Therefore, the neutron star mass measurements is vital, which will allow a statistical inference of the mass distribution to understand the supernova explosion mechanisms. With the release of the astrometric orbits of Gaia, one can identify astrometric binaries with neutron star companion candidates based on their astrometric semimajor axis, parallax, and primary mass. Using the Gaia astrometry and radial velocity follow-up, Shahaf et al.(2023b) and El-Badry et al.(2024) discovered some astrometric binaries containing neutron star companion candidates with a mass measurements. Here, we propose to search for radio pulsations of these neutron star companion candidates in wide orbits binary within the sky area of the FAST.