

**Proposal Abstract:**

We propose to use the FAST telescope to observe two peculiar binary pulsar systems: PSR B2303+46, in which the pulsar formed after the white dwarf (WD), and PSR J1954+2529, whose evolutionary mechanism could be similar to that of PSR B2303+46. By leveraging the high-precision observations from FAST, we aim to gain deeper insights into the unique evolutionary channels through which these binary systems are formed. To date, only two confirmed neutron star-WD systems have been identified to have the WD formed first, making their evolutionary mechanism particularly intriguing and worthy of further investigation. With the unparalleled sensitivity of FAST, we anticipate being able to significantly improve the timing of these systems, potentially detect Shapiro delays, and accurately determine their polarizations. By combining these results, we can precisely measure the masses, eccentricity, and geometry of the binary systems, ultimately leading to a much better understanding of the stellar evolution and the birth of the pulsar in these special systems.