

Proposal Abstract:

The superior sensitivity of the Five-hundred-meter Aperture Spherical Telescope (FAST) makes it the ideal instrument to search for the faintest pulsar population in the Galactic Bulge and its halo. We propose to continue our deep survey towards the Galactic Bulge. The goal is to discover a population of new pulsars and use them to probe ISM and pulsar populations in the Galactic Bulge and its halo. This is crucial for us to understand not only the pulsar formation and evolution in the Galactic Bulge, but also the origin of Gamma-ray emission in the Galactic Centre. In the 2021 and 2023 semesters, we observed a region of a total of 26 square degrees and succeeded in discovering 11 new pulsars (confirmed, including four MSPs) and detecting another six candidates. In the 2024 semester, we propose to observe another 24 square degrees to complete this pilot survey.