

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 semester, we observed an area of 15 square degrees and successfully discovered five new pulsars (confirmed, including one MSP) and detected another eight candidates. In the 2023 semester, we propose to observe another 21 square degree to complete this pilot survey.