

Proposal Abstract:

It is still an open question whether there is a large population of pulsars in the Galactic Bulge. We surveyed a small area towards the Bulge in the 2021 and 2023 semesters (PT2021_0043 and PT2023_0032) and detected 17 pulsar candidates. ten out of these 17 pulsar candidates (including eight millisecond pulsars) are likely to be located in the Galactic Bulge region. Here we propose to carry out timing of seven pulsar candidates (including four already confirmed) that are most likely to be in the Galactic bulge region, and confirm six additional new candidate pulsars. The proposed timing campaign will enable us to obtain coherent timing solutions of these seven pulsars and measure their positions, spin-down rate, orbital parameters if in binaries. The discovery and follow-up study of these pulsars are crucial for our understanding of the pulsar population in the Galactic Bulge, the origin of gamma-ray emission and the properties of the ionised interstellar medium in this region.