Proposal Abstract:

Spider pulsars are very close binaries of pulsar-white/brown dwarf. The companion star's outward wind and magnetosphere sometimes block the pulsar's radiation, making the systems eclipse binaries. Magnetic fields are the key to understanding the eclipsing mechanism and the nature of the eclipsing medium. Recent observations suggest that the magnetic field could be inferred through the polarization of the pulsar signal and giant pulses. We propose 18 hours to conduct high-quality polarisation observations of two known eclipsing spider pulsars (J1959+2048, J2339-0533). This proposal aims to precisely measure the magnetic field variation around the companion and eclipse duration across the eclipse phase. The result will help us better understand the eclipse mechanism and evolutionary processes.