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Abstract:

Spider pulsars are pulsars in very close binary with a white dwarf or a degenerate dwarf companion. It has been found that the companion star's outward wind and magnetosphere sometimes block the pulsar radiation, making the systems eclipse binaries (Arzoumanian et al., 1994). The eclipsing mechanism is still unclear. The aim of this proposal is to precisely characterize magnetic field variation across the eclipse phase caused by the magnetospheres of the spider pulsar's companion star. This measurement will help the explanation of the eclipsing mechanisms. We propose 8 hours to conduct high-quality polarisation observations of two known eclipsing spider pulsars (J1959+2048, J2339-0533).