

Proposal Abstract:

While hundreds of pulsars have been discovered in globular clusters, none have been discovered in any open clusters. J1921+3757 is a newly discovered pulsar in a targeting search in open clusters. It is in the line-of-sight of NGC 6791 and has a DM-based distance very close to the distance of NGC 6791 when assuming the NE2001 electron density model. J1921 is thus a hopeful member of the open cluster. This project plans to do timing observations for J1921 and obtain a phase-coherent solution, which will be valuable in constraining its characteristics and further check the possible membership. If confirmed, J1921 will be the first pulsar to be discovered in an open cluster. We also propose to observe four candidates, which are likely pulsars but slightly below the detection threshold of $S/N = 8$.