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Abstract:

In this proposal, we aim to measure the variation of scintillation arc curvatures from pulsars in globular clusters M5, M13, and M15 and precisely determine the distance of their scattering screens. The scintillation arcs were detected by us using the FAST telescope for the first time (Zhang D. et al. in prep.). With carefully planned observation placed at the correct earth orbit phase, we could obtain crucial data that will help us precisely determine the locations of these dense interstellar sheets, some of which may be the boundary of the local bubble. Some may be far away supernova shells. Determining their distance would help us identify the nature of these thin screens and provide a new method for studying the hierarchical interstellar medium.