

Proposal Abstract:

We propose the observation of pulsars in M3, aiming to obtain or update their phase-connected timing solutions, capturing more dynamic spectra and related scintillation arcs to study their scintillations, and searching for more pulsars. By using FAST archive data, we have captured the dynamic spectra of M3A, B, and D, but only captured the scintillation arc in M3B. And preliminary timing of M3E and F show that M3E has an orbit of ~ 7 days and M3F has an orbit of ~ 3 days. In 78 observations made by Hessels et al. (2007) using Arecibo, M3B with a high detection rate in M3 only appeared 16 times (20.5%). Compared with Arecibo, FAST can greatly improve the detection rate of pulsars in M3 (~ 3 times). With the extreme sensitivity of FAST, we believe that it can help us to obtain or update the timing solutions which will be important information for further studies on M3 and pulsars in it, and bring us more scintillation arcs and dynamic spectra to study the properties of the interstellar medium between M3 and us.