

Proposal Abstract:

Accreting Millisecond X-ray Pulsars (AMXPs) and transitional Millisecond Pulsars (tMSPs) are the progenitors of radio millisecond pulsars (MSPs). During the quiescent, low-luminosity X-ray state, radio pulsations have been detected in all tMSPs but so far never in an AMXP, with IGR J18245-2452 being the only exception as it shares properties of both classes. Only sensitive radio campaigns targeted to AMXPs during quiescence can reveal whether other tMSPs are hidden in the class and provide us a better understanding of the evolutionary cycle of binary MSPs. We propose to observe the recently discovered AMXP MAXI J1957+032, now in quiescence, with FAST, to perform a sensitive search for radio pulsations in its dormant state. The system has shown in the past faint X-ray activity, as tMSPs do, suggesting an intriguing link with the class.