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Abstract:

We propose to observe five important compact stellar objects whose nature now only radio pulsation search can possibly help improving understanding. Two had possible type-I X-ray bursts in the 1990s, but remain in extremely low X-ray state after bursts. We have detected possible radio pulsations in the directions of them via previous FAST snapshot observations. The third object showed dozens of short optical bursts, and is considered to be a magnetar. The last two objects are discovered in recent years and are considered to be noninteracting black hole binaries. But because of the uncertain mass of their non-degenerate companions, they are also suspected to be massive neutron stars. We propose FAST time to detect or verify radio pulsations from them. A positive detection would reveal or confirm their identities immediately. Alternatively, a negative result would present a stringent constraint on their flux densities and tell us we should rely on future observations to pin down the nature of these important compact objects.