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Abstract:

Gamma-ray binaries are systems composed of a massive star and a compact object with orbitally modulated emission at most frequencies, but peak electromagnetic output emitted at above 1 MeV. Only a handful of gamma-ray binaries are known and the mechanism for gamma-ray production, as well as the nature of the compact object is hotly debated. Only two gamma-ray binaries are known for certain to contain a pulsar. We propose deep radio FAST pulsar searches in the known gamma-ray binary system HESS J0632+057, as well as the gamma-ray binary candidate coincident with G70.7+1.2. Finding a pulsar in these systems will greatly improve our understanding of the particle acceleration mechanisms at play and shed light on the similarities and differences between gamma-ray binaries and X-ray binaries.