

Abstract Submitted
for the APR15 Meeting of
The American Physical Society

A cross-correlation search for intermediate-duration gravitational waves from GRB magnetars ROBERT COYNE, Texas Tech Univ — Since the discovery of the afterglow in 1997, the progress made in our understanding of gamma-ray bursts (GRBs) has been spectacular. Yet a direct proof of GRB progenitors is still missing. In the last few years, evidence for a long-lived and sustained central engine in GRBs has mounted. This has called attention to the so-called millisecond-magnetar model, which proposes that a highly magnetized, rapidly-rotating neutron star may exist at the heart of some of these events. The advent of advanced gravitational wave detectors such as LIGO and Virgo may enable us to probe directly, for the first time, the nature of GRB progenitors and their byproducts. In this context, we describe a novel application of a generalized cross-correlation technique optimized for the detection of long-duration gravitational wave signals that may be associated with bar-like deformations of GRB magnetars. The detection of these signals would allow us to answer some of the most intriguing questions on the nature of GRB progenitors, and serve as a starting point for a new class of intermediate-duration gravitational wave searches.

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Date submitted: 09 Jan 2015

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