

CONTINUOUS GRAVITATIONAL WAVES FROM MAGNETIZED WHITE DWARFS AND NEUTRON STARS: MISSIONS FOR LISA, DECIGO, BBO

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In the past decade, a few super-Chandrasekhar white dwarf candidates have been inferred through the peak luminosity of the light-curves of a few peculiar type Ia supernovae, though there is no direct detection of these objects so far. Similarly, a number of neutron stars with mass greater than 2 solar mass have also been observed. Continuous gravitational wave can be one of the alternate ways to detect these compact objects directly. It was already argued that magnetic field is one of the prominent physics to form super-Chandrasekhar white dwarfs and massive neutron stars. If such compact objects are rotating with certain angular frequency, provided their magnetic field and rotation axes are not aligned, then they can efficiently emit gravitational radiation and these gravitational waves can be detected by some of the upcoming detectors, e.g. LISA, BBO, DECIGO, Einstein Telescope etc. This will certainly be a direct detection of rotating magnetized white dwarfs as well as massive neutron stars.