Abstract Submitted
for the APR13 Meeting of
The American Physical Society

Multimessenger Astronomy: Modeling Gravitational and Electromagnetic Radiation From A Stellar Binary System KEVIN KERN, LOUIS RUBBO, Coastal Carolina University — The majority of galactic stars are members of a binary system. Although these binaries are prevalent, there is much yet to be learned about their formation, evolution, and interactions. Historically binaries have been studied using electromagnetic radiation, but with the anticipation of gravitational wave data in the near future, astronomers will have additional information to incorporate into their studies. As a start to a proof-of-principles study we produced simulated data representing the expected observations from both the electromagnetic and gravitational wave spectra. In particular, we simulate an eclipsing binary light curve, spectroscopic binary velocity curve, and gravitational wave time series from a generalized binary system for which we input the bulk parameters. Using these results, we hope to continue research by developing a statistical analysis routine that combines all three synthetic data sets in an effort to extract physical parameters of the original binary system.

Kevin Kern
Coastal Carolina University

Date submitted: 10 Jan 2013 Electronic form version 1.4