

Abstract Submitted
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Ligo Gravitational waves: Ripples in Spacetime or Electromagnetic DT FROEDGE, Formerly Auburn University — On Feb. 2016 the Ligo team announced the detection of gravitational waves from a collapsing Black Hole that occurred on Sept 14 2015. This definitively answers the question of the existence of gravitational radiation, and confirms the pulsar radiation energy measured by Hulse, & Taylor. Although the loss of energy in orbiting binaries is indicative of radiational loss, it does not automatically follow that the energy being radiated is gravitational, there is still the possibility proposed by several theorists, that the waves are electromagnetic. The Ligo experiment has developed impressive measures to reduce electromagnetic signals, but at the levels of strain being measured, it is not certain that the momentum transfer can be completely avoided. Electromagnetic signals diffracted around the limb of the earth vs. gravitational waves passing freely through, yield timing and attenuation differences that can clearly distinguish between the two, but as of yet that has not happened. There can only be certainty when the three Ligo Virgo observatories simultaneously triangulate signals through the earth with proper timing and attenuation. This paper will explore the aspects of the measurements that will define the difference.

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