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Letter to the Editor, *Science Magazine*

In the introduction to his very informative review of “Traveling at the Speed of Thought” by Daniel Kennefick, reviewer Michael Gordin minimizes the potential impact of LIGO (the Laser Interferometer Gravitational Wave Observatory) by describing it only in terms of verifying the existence of gravitational waves predicted by Einstein’s General Theory of Relativity. In fact, LIGO’s mission goes far beyond this limited goal.

LIGO is a first step toward opening a new field: gravitational wave astrophysics. We are about to begin an NSF funded project (Advanced LIGO) to improve its sensitivity by an order of magnitude beyond the initial design. Once Advanced LIGO and its sister project in Europe, Advanced Virgo, are operating in 2014, scientists will be able to study an array of fascinating astrophysical sources by interpreting information encoded in the gravitational waves. We will gain a new standard candle using binary neutron stars to study the expansion history of the universe, will use gravitational waves to shed light on the structure and dynamics of black holes, study stellar core collapse that drives exploding systems like supernovae, and will probe the structure of neutron stars.

In the years ahead, LIGO and other high sensitivity gravitational wave observatories will certainly contribute to astrophysics and cosmology in exciting ways that no one can now predict.

Sincerely yours,

A handwritten signature in blue ink that reads "Jay Matx". The signature is written in a cursive, somewhat stylized font.

Jay Matx
Executive Director