LIGO spots gravitational waves again

BY JERRY L. JONES

The detection of a new set of gravitational waves has expanded the window into the universe for scientists— including a team from LSU—that have spent the past few years mapping black holes in space, according to researchers working on the project.

The Laser Interferometer Gravitational-Wave Observatory announced Thursday it recently made its third detection of gravitational waves. Like LIGO's first two detections, the waves were created by the collision of two black holes that formed a larger ripple in the space-time fabric.

"This third discovery, made on Jan. 4, has a mass approximately 49 times that of our solar system's sun. The new detection, called GW170104, occurred during the research center's observation period that began Nov. 30 and concluded in the middle of January according to a news release about the discovery issued through LIGO.

"We suspended the run in May so as to make improvements on the detectors, improving their sensitivity," said Thomas Corbitt, an assistant professor of physics and astronomy at LSU, LIGO's operations are conducted by twin detectors in Louisiana and Washington state. LSU undergraduate and graduate students conduct much of the daily research at the observatory in Livingston Parish.

"This new one was a lot farther away than the previous discoveries," Corbitt said of the latest event detected. "That's why we want to make improvements, so that in the future, we get more events more frequently and see more with some more significance."

LIGO's first discovery of gravitational waves was announced in September 2015. A second detection was announced December 2015. Gravitational waves are caused by cosmic events like colliding black holes, exploding stars, supernovas— as well as black holes, neutron stars, and even the birth of the universe.

"It's very, very difficult, especially when you know you don't have any. We've observed the universe at the speed of light, looking for signals from things that are millions of miles away," King said.

"I'm just looking for the next thing that attracts my attention," said Roy King, in his lawsuit, did not detail his own role in the settlement. "We're very pleased about the outcome of the settlement," he added.

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