

# Best of Last Week – New measurement at Fermilab, new way to find blackholes and PTSD linked to stress in childhood

April 16 2018, by Bob Yirka

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This interior view of the MiniBooNE detector tank shows the array of photodetectors used to pick up the light particles that are created when a neutrino interacts with a nucleus inside the tank. Credit: Reidar Hahn

It was another good week for physics as a team at the University of Glasgow suggested that [machine learning could help in the search for](#)

[gravitational waves](#)—they have built a preliminary system geared toward separating noise from wave signals that they believe will speed up the process of finding such signals. Also, [a neutrino experiment at Fermilab delivered an unprecedented measurement](#)—that of the energy of a particle breaking up an atom. And a team of researchers from the University of California and Lawrence Berkeley National Laboratory found that [a precise measurement of the fine-structure constant cast doubt on dark photon theories](#).

In space news, an international team of researchers found that [tiny distortions in the universe's oldest light revealed a clearer picture of the strands in the cosmic web](#)—decoding of the distortions, they believe, will help with creating a map of filaments. And Eric Thrane and Rory Smith, from the ARC Centre of Excellence for Gravitational Wave Discovery and Monash University, suggested that analyzing [the background hum of space could reveal hidden black holes](#) and perhaps lead to a better way of searching for the gravitational-wave background.

In other news, a team at the University of Bath announced that they had developed [an adhesive patch to measure glucose levels through skin without a finger-prick blood test](#)—it draws glucose from fluid between cells across hair follicles. Also, physicists Jose Luis Rosales and Vicente Martin proposed [a quantum simulator that would offer a faster route for prime factorization](#). And a team with members from Northwestern Medicine and the University of Surrey in the United Kingdom made worldwide headlines when their research showed that [night owls have a higher risk of dying sooner](#). Also, a team at the University of Washington [proposed a peptide-based biogenic dental product that may cure cavities](#)—it would use proteins to rebuild tooth enamel and treat dental cavities.

And finally, if you have the feeling that you might overreact to everyday stress-inducing events, you might want to check out a study done by a

team with members from Massachusetts General Hospital and Khyber Medical University in Pakistan—they conducted a study that showed [how chronic early-life stress can raise PTSD vulnerability later in life.](#)

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