

Best of Last Week – Surprising new particle, a black hole eating a star and cannabis damaging white matter

November 30 2015, by Bob Yirka

One of the very first collisions recorded between two lead ions at the LHC's top energy. The energy in the center-of-mass system is approximately 1000 TeV. Today's events bring collision physics into a new energy scale, that of PeV (Peta-electron-volts). The ALICE detector registered tens of thousands of particles. In this live display the tracks of the particles from the collision point and through the detector are shown in colors corresponding to their mass and type. Credit: CERN

(ScienceX)—It was another good week for physics as an international team of researchers announced that their work with the ['material universe' yielded a surprising new particle](#)—the type-II Weyl fermion in metallic materials that behaves like an insulator when current is applied in one direction and a conductor when it is applied in the other. A team at [CERN collided heavy nuclei at a new record high energy](#), and NASA scientist Gary Prézeau suggested that [Earth might have hairy dark matter](#)—long filaments that are formed when a dark matter stream makes its way through the planet. A team at Stanford [set a quantum record by using photons to carry messages from electrons almost 2 kilometers apart](#), and suggested their work is another step toward building a true quantum computer.

In space news, an international team of astrophysicists got [a first glimpse of a black hole eating a star and ejecting a high-speed flare](#)—they were able to actually watch as the events unfolded over several months. A team of researchers with Caltech and JPL reported on their [efforts to track down the 'missing' carbon from the Martian atmosphere](#)—they believe it might have been due to the Red Planet only having a moderately dense atmosphere, and thus the problem of the missing carbon never occurred.

In other news, a team at Stanford announced the development of [new technology that makes metal wires on solar cells nearly invisible to light](#)—by hiding the reflective upper contact and funneling light directly to the [semiconductor](#) underneath. Also, alarmingly, a team of researchers with the Medical College of Georgia found that [a high-fat diet prompts immune cells that have become sedentary to start eating connections between neurons](#). And a team with the University of Belgrade, announced that they had built [a graphene microphone that outperformed traditional nickel and offered ultrasonic reach](#)—the vibrating membrane showed up to 15dB higher sensitivity.

And finally, if you are someone who smokes marijuana, you may want to note the results of a study conducted by a team at King's College London; they found that [white matter damage was caused by 'skunk-like' cannabis](#)—in the brain. It is due they say, to higher concentrations of THC in modern products.

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