

Best of Last Week—Black holes don't erase information, a stick computer and the exploding head syndrome

April 6 2015, by Bob Yirka



An artist's impression shows the surroundings of a supermassive black hole at the heart of the active galaxy NGC 3783 in the southern constellation of Centaurus. A new University at Buffalo study finds that -- contrary to what some physicists have argued for the years -- information is not lost once it has entered a black hole. The research presents explicit calculations showing how information is, in fact, preserved. Credit: ESO/M. Kornmesser

(Phys.org)—It was another good week for physics as a team of researchers with the University of Waterloo found that a [photon "afterglow" could transmit information without transmitting energy](#)—though the receiver must expend energy to read that information. Also good news for physicists trying to solve the "information loss paradox"—a team of researchers has found a way to show that [black holes don't erase information](#)—they claim that interactions between particles emitted by a black hole can be used to reveal information about material that "disappeared" inside of it. Also a team of researchers in China has for the first time [performed machine learning on a photonic quantum computer](#)—and claim it could speed up the rate at which certain machine learning tasks are performed.

New technology made news this week as well—[Microsoft announced a cheaper version of the Surface Pro 3 tablet](#)—they are selling it for \$499. Meanwhile at UCLA's California NanoSystems Institute, a team of researchers announced that they had created [quick-charging hybrid supercapacitors](#) that can store large amounts of [energy](#), recharge quickly and last for more than 10,000 charge/recharge cycles—perhaps offering a way to keep portable devices running longer. Also another team at Caltech announced that they had developed [a camera chip that provides superfine 3-D resolution](#). They claim that someday soon it could be used to allow a smartphone to take a picture of something and then have that thing replicated on a 3D printer to a resolution of mere microns. Also Google unveiled an [Asus made "stick" computer](#). Called the Chromebit. It is a full computer and is smaller than a candy bar; it can be plugged into a computer monitor to create a complete system.

In other news, a team of researchers at the University of Central Florida reported that [a simple \\$1 test outperforms PSA screening for prostate cancer](#)—the team has developed the test and claim it also provides results in just minutes. Also, another team of scientists discovered [the elusive secret of how continents were formed](#).

And finally, if you have heard rumors about something called "[exploding head syndrome](#)," believe them: A team of researchers has found that it exists and is actually quite common in young people. It is where a person experiences a loud noise inside their head just as they are falling asleep, jarring them awake and causing anxiety. A team of researchers found that approximately 18 percent of college teens had experienced it at least one time.

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