Best of Last Week – Creating time crystals, growing potatoes on Mars and evidence the brain is much busier than thought

March 13 2017, by Bob Yirka



Credit: NASA

(ScienceX)—It was a good week for physics, as a team with members from Canada, Germany and the U.S. found <u>it was possible to extend</u> <u>quantum machine learning to infinite dimensions</u> using continuous variables instead of the typically used discrete variables. A combined team of researchers from Harvard and the University of Maryland created "time crystals", in which atoms and molecules are arranged across space and time, as was originally envisioned by a team at Princeton. And a team with the Harvard-Smithsonian Center for Astrophysics found it was possible to combine gravity wave detection with atomic clocks. Also, a team at the University of Vienna ran experiments that caused "blurred times" in a quantum world showing a new effect at the interplay of two fundamental physics theories and demonstrating a limitation with our ability to measure time.

It was also a good week for space news, as a team with the International Potato Center found indicators that showed <u>potatoes can grow on Mars</u> —which could prove useful if humans ever wind up living on the Red Planet for any length of time. And a team at NASA's Jet Propulsion Laboratory announced that they had used <u>a new kind of interplanetary</u> <u>radar to find two lost lunar spacecraft</u> orbiting the moon.

In other news, a team at Indiana University announced that they had created <u>a molecular "leaf" that collects and stores solar power without</u> solar panels—they engineered a molecule that uses light or electricity to convert carbon dioxide into carbon monoxide. Also, a team with the University of Western Ontario in Canada announced that they had discovered a situation in which <u>a patient's brain activity continued for 10</u> minutes after death—after being taken off life support, the patient inexplicably continued to emit delta waves for 10 minutes and 38 seconds. Also, an international team of researchers reported that they had found dental plaque DNA that showed <u>Neanderthals used "aspirin"</u> to alleviate pain—by eating leaves from poplar trees that contain salicylic acid

And finally, if you have ever had the feeling that your mind is constantly busy, even when just walking around or resting, you might be on to something as a team at UCLA found that <u>the brain is 10 times more</u> <u>active than previously measured</u>—they found that dendrites were

generating nearly 10 times more spikes than somas.

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