

## Best of Last Week – High-temp superconductivity, ice cream changes colors when licked and more sophisticated ransomeware

August 4 2014, by Bob Yirka



This artist's representation shows the Fermi bubbles towering above and below the galaxy. Credit: NASA's Goddard Space Flight Center

(Phys.org) —Last week was a big one for research into practical applications as one team of <u>physicists unlock nature of high-temperature</u> <u>superconductivity</u>—the team identified what is believed to be the



"quantum glue" that underlies a promising type of superconductivity, possibly paving the way to real applications. Meanwhile, researchers are working with <u>tiny magnets</u>, <u>huge fields</u>: <u>Nanoscale ferromagnetic</u> <u>electrodes create chemical equivalent of solid-state spin valve</u>—they propose that the limitations of using a magnetic gradient force field to manipulate paramagnetic molecules precisely can be dealt with by using very tiny ferromagnetic electrodes to produce powerful localized force fields that can be fine-tuned by an external magnetic field. And in Spain, a <u>a physicist creates ice cream that changes colors as it's licked</u>—secret ingredients respond to temperature change and chemicals found in the mouth.

Last week was pretty big for space research as well as a <u>computer model</u> shows the moon's core surrounded by liquid and it's caused by Earth's gravity—the simulations by the model upend theories that suggest the moon is completely solid. Another team analyzing data from x-ray detectors sent above Earth's atmosphere two years ago as part of the DXL mission found <u>evidence of a local hot bubble carved by a</u> <u>supernova</u>—the suspected origins of the soft X-ray glow permeating the night sky. And sadly, another team reports that <u>despite extensive</u> <u>analysis</u>, Fermi bubbles defy explanation—there is still no good explanation for the existence of the two massive bubbles that stretch tens of thousands of light-years above and below the Milky Way Galaxy.

In medical news, researchers last week reported they believe they have found <u>a glucose "control switch" in the brain key to both types of</u> <u>diabetes</u>. Now if the switch can be manipulated by drugs, it might be possible to better control glucose levels in the blood. Also, another team of researchers reported a <u>new type of ransomware more sophisticated</u> <u>and harder to defeat</u>. If your computer is infected, it will encrypt your data and demand payment for decryption, leaving you feeling angry and vulnerable and wishing you'd backed up your stuff on removable medium.



And finally, a team of researchers in Texas has found that the pain reliever <u>Ibuprofen relieves women's hurt feelings</u>, not men's, which may or may not seem fair to some, but not others.

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