Best of Last Week – Violating Bell's inequality, oldest evidence of life on land and possibility of a cure for baldness

May 15 2017, by Bob Yirka

An infographic of NIST technique for quantum control of molecules. Credit: Hanacek/NIST

It was another good week for physics as a team at the National Institute of Standards and Technology found a way to control charged

molecules—with quantum logic—by using the same type of logic that is behind experimental atomic clocks. Also, a group at the University of Basel's Swiss Nanoscience Institute reported that through analyzing their strength, hydrogen bonds were directly detected for the first time using an atomic force microscope. And a team at the Hong Kong University of Science and Technology demonstrated a violation of Bell's inequality on frequency-bin entangled photon pairs—by reducing the velocity of light used in their experiment. Also, an international team of researchers found a way to solve the 400-year-old mystery of Prince Rupert's drops by looking at stress distribution in the drops using a transmission polariscope.

It was also big week for researchers studying the past as a team with members from the Royal Ontario Museum and the University of Toronto discovered a nearly pristine ankylosaur fossil in Montana—it represents one of the most complete ankylosaur fossilized skeletal remains ever found. Also, an international team of researchers reported that Homo naledi's surprisingly young age opened up more questions on where we come from—the group found evidence that suggests the hominin lived alongside Homo sapiens for a period of time. And a team from the University of New South Wales reported that they had found the oldest evidence of life on land in 3.48-billion-year-old Australian rocks—making them approximately half a billion years older than the prior record holder.

In other news, four postgraduate students entered a lunar-like laboratory recently as China began testing its "Lunar Palace" in preparation for an eventual moon landing. The volunteers will remain in the lab for approximately 200 days. Also, a combined team of researchers from the University of Bonn and The Hebrew University of Jerusalem reported that they had found that cannabis reverses aging processes in the brain—at least in test mice.

And finally, if you have been fretting about your hair going gray or lost your hair altogether, you might be interested in a study by a team at the University of Texas, Southwestern Medical Center—they found the skin cells that cause balding and gray hair, which, they suggest, means it might be possible in the near future to reverse both problems with a special type of skin cream.

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