

Best of Last Week—How antimatter forms, world's first super telescope and why fathers treat toddler daughters different

May 29 2017, by Bob Yirka

Three-dimensional renderings of electron trajectories in circular graphene resonators, and their projections on the horizontal plane. A weak magnetic field warps the classic type of atomic orbit (left) into the skipping type with outer loops (right). Because of the topological Berry phase inherent to electron's wavefunctions in graphene, the transition between them involves a sudden jump in the quantum-mechanical level energy. Credit: Christopher Gutiérrez, Jon Wyrick, CNST/NIST

(ScienceX)—It was another good week for physics as a team with the National Institute of Standards and Technology announced that they had developed [a magnetic switch to turn on and off a strange quantum property](#) in which an electron changes as it moves along a closed path. Also, a team at the University of Cambridge found that [a "saddle-shaped" universe could undermine general relativity](#)—or more specifically, that a naked singularity could exist in curved three-dimensional space. And a team in Austria showed that [a new blackbody force depends on spacetime geometry and topology](#)—it absorbs all incoming light and thus appears black. Also, a team of Monash researchers [uncovered new gravitational wave characteristics](#)—called orphan memory, in which parental waves are not detectable. And an international team of researchers claimed to have solved [the mystery of how most antimatter in the Milky Way forms](#)—from white dwarfs colliding.

In other news, officials with the European Southern Observatory announced that construction had begun on [the world's first super-telescope](#)—called, quite naturally, the Extremely Large Telescope, it will have a 39-meter main mirror and will be located on top of Cerro Armazones in Chili. Also, a team with NASA's Goddard Space Flight Center reported on the observation of [a collapsing star giving birth to a black hole](#)—courtesy of the Large Binocular Telescope and the Hubble and the Spitzer space telescopes. And a team at Brunel University London conducted a study and found that [muscular men are less likely to support social and economic equality](#) and are more often likely to believe that some social groups should dominate others. Also, an international team of researchers made headlines when they reported on finding [7.2-million-year-old pre-human remains in the Balkans](#)—casting doubt on the theory that great apes and humans split in Africa.

And finally, if you are a father of a toddler, you might be interested in the outcome of a new study led by Jennifer Mascaro with Emory

University—the team found that [fathers' brains respond differently to daughters than sons](#) and because of that, they actually treat them differently. Fathers of girls, for example, sang more often to them and behaved more emotionally with them.

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