

Best of Last Week – quantum information accurately transfered, better wind turbines and study of porn's impact on brain

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Artistic impression of quantum teleportation of a spin state between two distant diamonds.

(Phys.org) —It's been a remarkable week for physics work—first a



research team claims to have accurately 'teleported' quantum information ten feet, and report that they did so with 100 percent accuracy. If the claims turn out to be true, this could mark the beginning of real-world quantum computers or networks. Equally exciting, researchers at Lawrence Berkeley National Laboratory's have found that combining lasers could shrink particle accelerators from kilometers to meters. Imagine the cost savings—such a development would allow more scientists access to such research, perhaps opening the door to a flood of new discoveries. And imagine also, a space-based experiment that could test gravity's effects on quantum entanglement—and in so doing, make inroads toward creating a unifying theory between the theory of relativity and quantum theory.

It's been a pretty busy week for technology development also: A <u>Dutch company launched new-generation urban wind turbines</u>—they're a lot quieter than conventional turbines and take up much less space. And, a team at MIT has announced a <u>new breed of solar cells: Quantum-dot photovoltaics set a new record for efficiency in such devices</u>—another step toward a new generation of cells that last a lot longer and can be manufactured under ordinary temperatures.

In the biological sciences, a <u>study shows environmental influences may cause autism in some cases</u>—a finding that could help explain why it is that babies born to older mothers have an increased risk of developing the disorder. Another team is reporting a <u>breakthrough that shows how DNA is 'edited' to correct genetic diseases</u>. It's a step forward in understanding how enzymes impact genes to prevent <u>genetic diseases</u>, and maybe leading to a way to improve the process.

In otherworldly news, a <u>pair of researchers suggest black holes at center of galaxies might instead be wormholes.</u> It may sound a bit far-fetched, but a new addition to a telescope in Chili could prove them right or wrong, in just a couple of years. Also, researchers working with NASA's



Swift satellite report a <u>cosmic explosion spotted in neighboring galaxy</u>. They're not sure what happened, but suspect it was two neutrons stars colliding.

And finally, food for thought: <u>Does porn affect the brain? Scientists urge more study</u>. Preliminary research indicates heavy users have less grey matter. But was porn the cause, or was it a condition that led to the behavior? More research will have to be done to find out. In the meantime, the team at Max Planck Institute isn't making any recommendations.

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