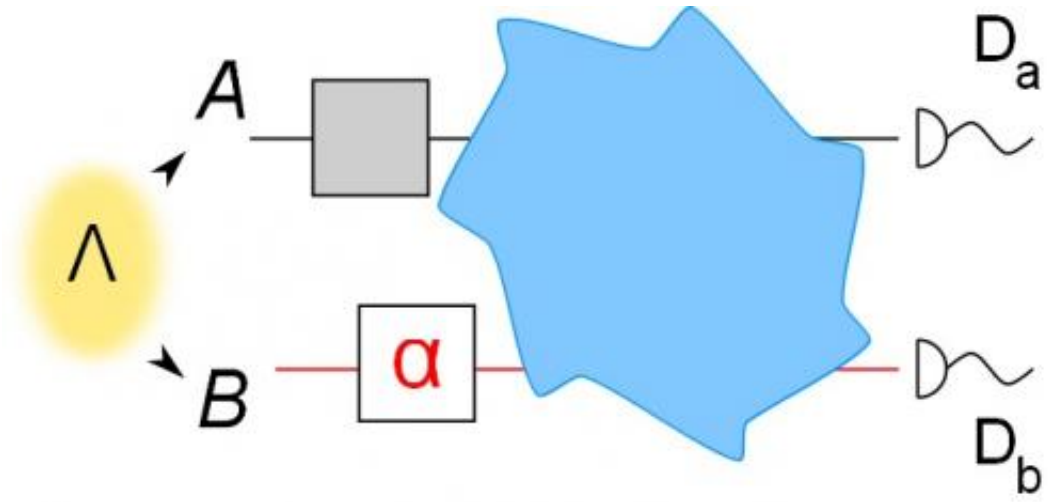
Best of Last Week–Can space travel faster than light, another planet behind the Sun and should we allow head transplants

March 2 2015, by Bob Yirka



An illustration of the delayed-choice experiment, which shows that a photon exhibits both particle and wave behaviors. The physicists used this experiment to show that seemingly reasonable classical assumptions may not be so reasonable after all. Credit: Ionicioiu, et al. ©2015 American Physical Society

(Phys.org)—It was an interesting week for physics research—most of the big news was centered around space, the cosmos or how things came to be as they are. One team of physicists offered a solution to the puzzle of the origin of matter in the universe—suggesting that matter-antimatter asymmetry could be related to the Higgs boson particle. Another team wondered, how can space travel faster than the speed of light? If nothing

can travel faster than light, they asked, how is it possible that there are parts of spacetime where the photons that make up light are forever out of our reach? And yet another team wondered if classical theory could be just as weird as quantum theory—they showed that objectivity, determinism, and independence are mutually incompatible with any theory.

In space news, a team of researchers wondered if there could be another planet behind the sun. More aptly, they used science to put the sci-fi myth to rest once and for all—no, there is not another planet just like ours hiding behind the sun. Period. Meanwhile, another team discussed Earth's other "moon" and how its crazy orbit could reveal mysteries of the solar system—3753 Cruithne orbits our planet in a horseshoe quasi-orbit, wobbling and swaying. Also, another team announced a monster black hole discovered at cosmic dawn—the brightest quasar in the early universe.

In other news, officials in California announced that construction will begin on a five mile stretch of the Hyperloop next year—it is the project conceived by Elon Musk that seeks to put passenger pods inside tubes and push them using fans and magnets at speeds up to 200mph. Also, a team of researchers found that a widely used food additive promotes colitis, obesity and metabolic syndrome—it is the emulsifiers that are used to enhance texture and prolong shelf life. And scientists in Russia announced that several "new" craters have been found in Siberia —believed to be related to global warming, the sudden appearance of such craters is causing officials to be worried about public safety.

And finally, if you have grown tired of your body, then perhaps someday soon you could get a new one as a surgeon offered ideas on a way to do human head transplants—Sergio Canavero suggests the technology may be at hand so we might want to start considering whether we ever really want to do such a thing.