THE UNIVERSE SHOULD NOT ACTUALLY EXIST, CERN SCIENTISTS DISCOVER

BY HANNAH OSBORNE ON 10/25/17 AT 9:11 AM

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The universe as we know it should not exist, scientists working at CERN, the European Organization for Nuclear Research, have said.

After performing the most precise experiments on antiprotons that have ever been carried out, researchers have discovered a symmetry in nature that they say just shouldn't be possible.

One of the big questions about the universe is how the first matter formed after the Big Bang. Because particles and antiparticles annihilate one another when they come into contact, if there were exactly equal measures of both, the universe wouldn't exist—at least not in the form we see it today. As such, there must be an imbalance between particles and antiparticles, even if it is only by the tiniest fraction.

But this is not the case. All experiments designed to find this asymmetry have come up blank. This is also true of the latest, which were recently carried out at CERN by an international team of researchers. The findings from the BASE (Baryon Antibaryon Symmetry Experiment) are published in the journal *Nature*.

The Milky Way and Andromeda galaxies.

NASA

"All of our observations find a complete symmetry between matter and antimatter, which is why the universe should not actually exist," first author Christian Smorra, from Japan's RIKEN institute, said in a statement.

In the study, researchers used antiprotons that had been isolated in 2015. The antiprotons were measured using the interaction of two traps that use electrical and magnetic fields to capture them. The team was able to measure the magnetic force of the antiproton to a level that is 350 times more precise than ever before.

If there was an imbalance between protons and antiprotons, this level of precision would be the best bet for finding it. "At its core, the question is whether the antiproton has the same magnetism as a proton," said Stefan Ulmer, spokesperson of the BASE group. "This is the riddle we need to solve."

"The measurement of antiprotons was extremely difficult and we had been working on it for 10 years. The final breakthrough came with the revolutionary idea of performing the measurement with two particles."

After finding no asymmetry between particles and antiparticles, the researchers will now work to develop even higher-precision measurements of protons and antiprotons to improve on the

latest findings. "An asymmetry must exist here somewhere but we simply do not understand where the difference is. What is the source of the symmetry break?" Smorra said.

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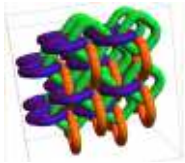

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