

Onderzoeksvraag:

Does the universe constantly loop thru its existence?

By: Dylan Pipping | 29-10-2020

Onderzoek:

There is a theory out there that states that the universe something that only occurs once, but instead the universe constantly loops thru its own existence. This is a theory that has plagued the mind of a few scientist for years and its is also a thing that fascinates me.

The theory states that that before our universe came into existence, there was another universe before and that when our universe comes to an end that it shrinks back on itself instead of expanding further. When its al collapsed into a singularity it eventually causes another big bang, which in turn creates an entirely new universe.

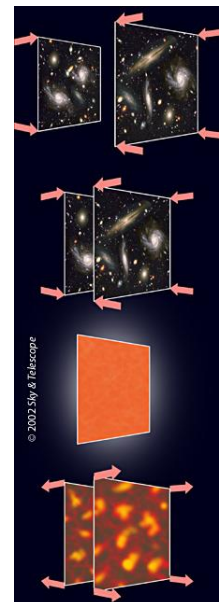
This theory is as old as the theory of the big bang, but it was not accepted because there was no evidence. So up until recent years nobody has actually tested this theory out, until Paul J. Steinhardt (from Princeton University) and Neil Turok (from Cambridge University) may have done the trick to figure it out. In there paper that was published on the 25th of April in 2003 (see references below), they have stated that they tested this theory by picturing two flat, parallel, four-dimensional spacetimes-our familiar universe and a separate "mirror" version- lying close together in a larger, fifth dimension. This outer dimension is inaccessible to us, the same way that two-dimensional creatures living in a sheet of paper could not see into the third dimension above and below their plane.

The two branes in Steinhardt and Turok's theory move together and apart in cycles perhaps many trillions of years long. When they come together and intersect, the energy of their collision fills each with the matter and energy of a new Big Bang. As they move apart, their internal contents disperse over billions of years, as observed. Eventually they become very nearly empty and their motion apart stagnates, setting the stage for them to recollide and set off a new Big Bang creation.

All this is less arbitrary than it sounds. The physics should work, Steinhardt and Turok claim, and their model explains all the observed phenomena of the cosmos in the same detail as today's standard version of the Big Bang. Turok also explains this theory on the channel of NourFoundation (see references).

So in short, after going thru researching this theory, I say that the theory may hold the evidence for the origin story of the universe and that it will explain why the universe works the way it does.

So does the universe cycle thru its existence? My answer on the theory is yes, cause in the testing done by those researcher I can see a glimpse of truth. And it may explain everything in the universe.



Source Reference:

- <http://www.physics.princeton.edu/~steinh/vaasrev.pdf>

(Paper from the Princeton University)

[Paul J. Steinhardt, Department of Physics & Princeton Center for Theoretical Physics,
Princeton University, Princeton]

- <https://cds.cern.ch/record/525422/files/0111030.pdf>

(Paper on the website of CERN)

[Paul J. Steinhardt, Joseph Henry Laboratories, Princeton University, Princeton;
Neil Turok, DAMTP, CMS, Wilberforce Road, Cambridge]

- <https://www.youtube.com/watch?v=cEijLstRLg8>

(Neil Turok explains Cyclic Universe Theory)

[An excerpt from "The Origins of the Universe: Why Is There Something Rather than Nothing?"
featuring Steve Paulson, Neil Turok, Jim Holt, and David Albert. The New York Academy of
Sciences, Tuesday, October 14, 2014]

Table of Content:

- branes = De term branes (of braan in NL) is een concept uit de snaartheorie, en heeft de betekenis van een ruimtelijk uitgestrekt object.
(<https://www.encyclo.nl/begrip/Braan>)
- Big Bang = Is de theorie van de oorsprong van het universum.