IS THE UNIVERSE INFINITE?

Hypothesis

If the universe keeps expanding then it is infinite because there is no boundaries to how big the universe is.

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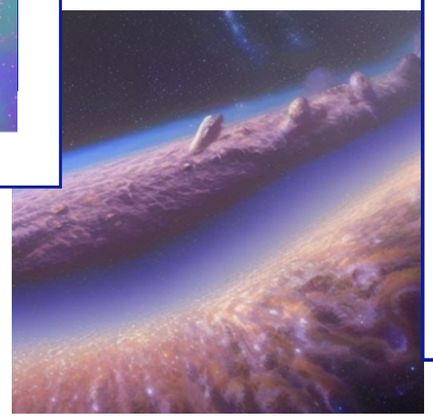
Introduction

There are many ways to see the universe. The universe encompasses everything in existence. While the universe may be vast and complex, scientists have been studyin it for centuries, and our understanding of continues to evolve over time. Many theories on the universe are yet to be proven and are still being tested today. Such theories include the Big Bang Theory the Cosmic Inflation Theory, and the Finite Theory. The question of whether the universe is infinite or not is a large scientific debate and investigation. Regardless of whether the universe is infinite, there is still so much we have yet t discover and understand about it. However, we believe that if the universe continues to expand it should be infinite.



Supporting Theories

The Big Bang is an event that describes how the universe expanded from an initial state of high density and temperatures.

The Cosmic Inflation theory suggests the universe may be infinite. This theory presents the idea that the universe had an exponential expansion of space in the early universe following the Big Bang. This theory suggests that the universe may be much larger than what we can currently observe, and may extend infinitely beyond the observable universe.

The Finite Universe theory suggests that the universe may be finite in size but still lack a boundary. The idea of a "closed" universe, in which space is finite but curves back on itself in a way that allows for infinite extension, is a possibility.

Methods & Findings

Physicist and Cosmologist Alan Guth was the father of this Cosmic Inflation theory. It was used to further investigate the Big Bang Theory.

The Universe extends 46 billion light years that is in every direction from us. Findings state that the universe is 13.8 billion years old, the observable universe can extend further since it keeps expanding. Each of the galaxies could be getting further and further from each other.

The No Boundary Proposal is a way of tracing the origins of the universe in reverse. The universe is constantly expanding, but by following this process in reverse, you would see the universe get smaller and smaller until it was at a subatomic level.

Limitations

There were many different opinions on the topic. Many researchers had different methods to the question. When approaching the question we accounted the more prominent theories. Though there were very limited data on the universe itself. Beyond the observable universe, it is currently not known whether the universe is infinite or not.

Results

If the universe is infinite we would not notice anything for a long period of time. There is really no expansion occurring within our local galaxy which is about 10 million light-years across. This means it would be millions of years before we would see any change in expansion for anything outside our local galactic cluster.

Conclusion

While the question of whether the universe is infinite or not is still an open scientific question. Current evidence suggests that the observable universe as a whole may be infinite. We know as a fact that the universe is expanding. The limitation to what its expanding to is still up for debate. We have have concluded that the universe Is Infinate.

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