

Things Questionable about the Universe

Preamble

It is fair to assume that ancient humans viewed the world around them and the skies above in the same way as the lower animals view them even today. With no tools at their disposal, the thinking must have been that there are forces at play which are way beyond their understanding.

Having been blessed with more complex brains, evolving humans were able to think about these matters and come up with explanations many of which were based on the theory that more powerful beings – supernatural beings – were at work in the universe.

Let There be Religion.

Ancient civilizations spread across the globe seem to have all developed theistic explanations - initially polytheistic and eventually monotheistic. However, the simplicity of a monotheistic explanation does not provide a reasonable explanation of the complexities, and even with a single deity, three separate components were crafted to achieve a better explanation. For example, the Christian religion believes in God the Father, God the Son and The Holy Ghost.

Render unto Scientists the things that are Scientific

Initially, religious thinking dominated. However, as more tools were developed and more educational material - including books - became available to the wider population, other explanations became available.

Not surprisingly, a schism developed between the Religious establishment and the Scientific establishment, with the latter developing rules which today can be described as follows:

Stage (1) – Theory. Here, a problem is identified with the current explanation(s) of a phenomenon and a better explanation is proposed as a theory.

Stage (2) – Testing. Here the new theory has to be subject to testing. Indeed, without testing it is very difficult to have the new work published. Ironically, the more complex the problem the more are the theories competing for acceptance.

Naturally, earth-based problems are easier to test. Testing the theories of the evolution of the Universe are difficult and time-consuming, hence are likely to remain as theories.



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We are now left with a Philosophical conundrum – having veered away from religious beliefs, Cosmologists seem to be choosing an alternative belief system. Hence the question: "What does it take to be a believer in Cosmology?"

Stage (3) – Accepted Law. Here, the theory is supported by rigorous testing and it becomes a Law.

Even if a law is not used to describe the solution, everyone will understand that a difficult problem has been resolved. Medical and Technological advances are good examples of problem solving.

Disclosure

The facts presented in these pages have been compiled from sources considered to be reliable. The questions posed are those of the author who is seeking clarification when assumptions and claims seem to be questionable.

All opinions expressed are those of the author and do not in any way represent the opinion of any members of his Alma Mater.

The Evolution of the Universe

The advanced technology which enables scientists to study the entire cosmos is creating new information which results in new theories which may not be easily tested. One of the best overview articles was addressing the question:

Just How Many Galaxies Are in the Universe?

It was written by Craig Freudenrich, Ph.D. and published in HowStuffWorks, Wed, November 8, 2023. A long read but highly recommended.

Key Takeaways

The article shows that Astronomers are working with these facts:

- 1) The sun is just one of about 200 billion stars in the Milky Way our home Galaxy. That is 2×10^{11} in scientific notation,
- There could be as many as 2 trillion galaxies in the Universe. That is 2 x 10¹² in scientific notation.

We humans can safely conclude that our sun is like a grain of sand at the sea shore.



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Additional and Obvious Facts:

- 1) All scientific knowledge originated from studying events occurring on Earth.
- To come up with theories to explain celestial events, scientists naturally extrapolated and applied those laws to explain extraterrestrial processes – with considerable success - as in the case of space travel.
- 3) Now, the observed fact that the universe was expanding, led to the extrapolation backwards in time (assumed linear) leading to what should be a "point" – which is impossible, so it was called a "mathematical singularity".
- 4) The assumption that the universe began as a singularity allowed the Big Bang Cosmology theory to show that it all started **13.8 billion years ago**.
- 5) Most theories about the early universe assume that it was filled with Hydrogen and Helium and that some areas were denser than others, causing the accumulation of gas and dust.

More Facts Needed

It is too early to reach a verdict which will settle this complex issue. We will therefore move on to address:

1) The composition of **Our Solar System**, with this article entitled:

The Solar System: Planets and Formation Explained

Published in HowStuffWorks , Aug 4, 2023 and

2) the situation on **Planet Earth** with this is an article entitled:

Earth: A Primer on the Third Rock From the Sun

Published in HowStuffWorks, Oct 20, 2023.

Also Note:

The, Oct 20 article was updated in conjunction with **AI technology**, then fact-checked and edited by a HowStuffWorks editor.



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References

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