



Fundamental Physics and Cosmology



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Peter Anteater

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How old is the universe?

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Cosmology

What is the evidence for dark matter?

Answer:

Below, I list the historical and strongest evidence for dark matter. A nice overview of dark matter (and dark energy) is shown in this clip from the Hayden Planetarium's show on the Dark Universe, narrated by Niel Degrasse Tyson.

Clip From "Dark Universe" | Hayden Planetarium,
American Museum of Natural History

from BillMoyers.com



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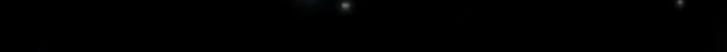
Cosmology

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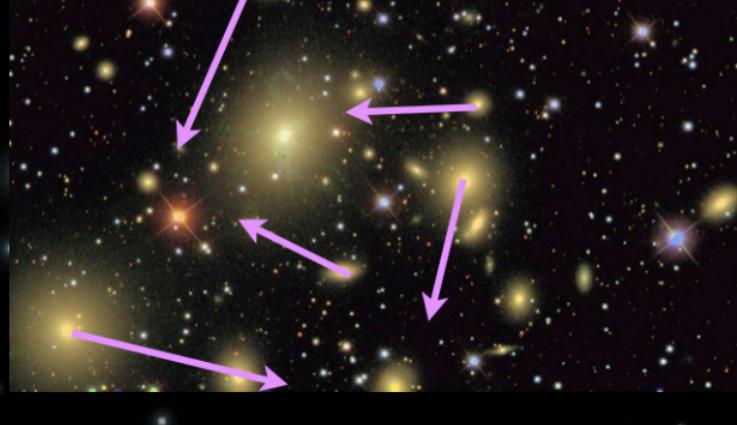
Clip From "Dark Universe" | Hayden Planetarium,
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Galaxy Clusters

The first evidence for dark matter was detected in 1933 by Fritz Zwicky, a swiss astronomer looking at velocities of galaxies in clusters of galaxies, like this



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Cosmology

- **What is the evidence for dark matter?**
- **How big is the Universe?**
- **What is the difference between dark matter and dark energy?**
- **What is dark energy?**
- **What is dark matter?**

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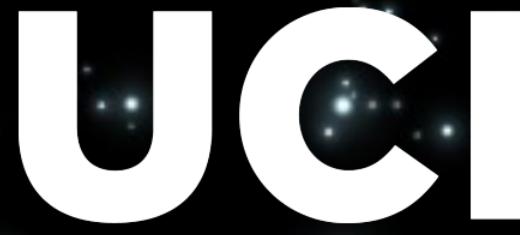
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The questions posted here originate from questions on fundamental physics and cosmology that have arisen from high school instructors and undergraduate students that have not had advanced courses. The answers are meant to be sufficiently non-technical so that they should be comprehensible to a person with high-school level physics and math.



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Cosmology

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- [How big is the Universe?](#)
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Name: Peter Anteater

Email: panteater@uci.edu

Question: How old is the universe?

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