Does Dark Energy Exist?

New cosmological model suggests 'probably not'

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A TEAM of scientists from the University of Canterbury in Christchurch, New Zealand, have proposed a new theoretical framework to describe the universe, called the *timescape* cosmological model. Unlike the currently favoured model, Lambda Cold Dark Matter (ΛCDM), this new model doesn't require the existence of so-called 'dark energy' to explain the observations.

ΛCDM is increasingly out of line with observations, which show that the distribution of the universe's matter (i.e., planets, stars, and galaxies) is lumpier (more unevenly distributed) than once thought.[1] This 'lumpiness' challenges the *cosmological principle,* which assumes that the universe is smooth (*homogeneous*) on the large scale—and has no centre or preferred direction (i.e., is *isotropic*). This principle is one of the bedrock assumptions of modern cosmology.[2]

Dark energy was initially proposed as a type of weak, anti-gravity force that accelerates the expansion of the universe to faster rates as it ages. It is assumed to have a very low density yet have profound effects because of being widely distributed throughout the universe. Dark energy is claimed to comprise about two-thirds of the universe's entire mass-energy density.

The tension in cosmology

The Cosmic Microwave Background (CMB) is radiation coming from all directions, from far out in the universe. Assuming big bang cosmology, one can use observations of the CMB to calculate the expansion rate of the early universe and predict what it should be today. However, redshift data indicate that today's rate is significantly faster than predicted—a major and unresolved dilemma known as the 'Hubble tension.'

Further questions have arisen following analysis of data from the Dark Energy Spectroscopic Instrument (DESI),[3] which has produced the most detailed 3D map of the universe. Effectively, the ΛCDM model does not fit the observed data as well as models which allow the acceleration factor to change with time.

All this has led to this new timescape model.[4] General relativity infers that higher gravity has a slowing effect on time, so that clocks would tick faster in the voids of empty space compared to inside galaxies. For example, inside the Milky Way, gravity would cause a clock to run 35% slower than in a distant cosmic void. This implies that billions of years less time would pass than in the void (assuming deep time).

The paper's lead academic, Professor David Wiltshire, stated that:

> Our findings show that we do not need dark energy to explain why the Universe appears to expand at an accelerating rate. Dark energy is a misidentification of variations in the kinetic energy of expansion, which is not uniform in a Universe as lumpy as the one we actually live in.[1]

Creation scientists have for some time explored models that use this relativistic time dilation effect to explain starlight from billions of light-years away in a recently created universe.[5] It is interesting that secular researchers are here considering the impact that general relativity's time dilation (in this case the differences in time dilation between different regions of the universe, due to its 'lumpiness') has on our understanding of the cosmos. ■

References and notes

1. Royal Astronomical Society, Dark energy may be an illusion: scientists uncover a "lumpy" universe, scitechdaily.com, 1 Jan 2025.
2. Hartnett, J., Dark energy and the elusive chameleon—more darkness from the dark side, creation.com/dark-energy-elusive, 8 Oct 2015.
3. It utilizes the Mayall 4-metre telescope at Kitt Peak National Observatory, Arizona.
4. Seifert, A. *et al.*, Supernovae evidence for foundational change to cosmological models, *Monthly Notices of the Royal Astro. Soc. Let.* **537**(1):L55–L60, 2025.
5. See Chapter 5, *The Creation Answers Book*, creation.com/cab5.

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> "It is he who made the earth by his power, who established the world by his wisdom, and by his understanding stretched out the heavens" (Jeremiah 10:12).