

Dark Energy v. The Void: What if Copernicus was Wrong?

September 26 2008

Dark energy is at the heart of one of the greatest mysteries of modern physics, but it may be nothing more than an illusion, according to physicists at Oxford University. The problem facing astrophysicists is that they have to explain why the universe appears to be expanding at an ever increasing rate. The most popular explanation is that some sort of force is pushing the accelerating the universe's expansion. That force is generally attributed to a mysterious dark energy.

Although dark energy may seem a bit contrived to some, the Oxford theorists are proposing an even more outrageous alternative. They point out that it's possible that we simply live in a very special place in the universe - specifically, we're in a huge void where the density of matter is particularly low. The suggestion flies in the face of the Copernican Principle, which is one of the most useful and widely held tenants in physics.

Copernicus was among the first scientists to argue that we're not in a special place in the universe, and that any theory that suggests that we're special is most likely wrong. The principle led directly to the replacement of the Earth-centered concept of the solar system with the more elegant sun-centered model.

Dark energy may seem like a stretch, but it's consistent with the venerable Copernican Principle. The proposal that we live in a special place in the universe, on the other hand, is likely to shock many scientists. The maverick physicists at Oxford conclude their paper by

pointing out that forthcoming tests of the Copernican principle should help us sort out the mystery in the next few years.

Citation: Timothy Clifton, Pedro G. Ferreira, and Kate Land, *Physical Review Letters* (Phys. Rev. Lett. 101, 131302 (2008))

Source: American Physical Society

Citation: Dark Energy v. The Void: What if Copernicus was Wrong? (2008, September 26)
retrieved 26 April 2024 from

<https://phys.org/news/2008-09-dark-energy-void-copernicus-wrong.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.