My suggestion of the discovery of new dual-energy physics is based on a comprehensive set of evidence. For specific details you may also want to check the <u>side-by-side comparison</u> or the full science paper. The set of evidence includes:

- 1. A unique **proof for a dual-energy mechanism as the energy source in gravity** where I demonstrate that neither 'gravitational potential energy' nor the gravitational field qualify as physical energy source.
- 2. The ability of the new theory to demonstrate a coherent bottom-up physical model of the universe that comprehensively explains the fundamental cosmological behavior and properties of our universe and solves an unprecedented range of current problems in cosmology. The ability to explain the physics of origin, expansion and structure of the universe emerges as the direct consequence of dual-energy physics without any additional assumptions.
- 3. The **fundamental inability** of its alternative, the **current cosmology** of a 'single-energy' world of positive energy only, **to naturally address the fundamental behavior of our expanding universe**.
- 4. Current 'single-energy' theory requires a broad range of exceedingly deliberate assumptions outside known laws of physics to avert its fundamental unfitness to model our expanding universe. This includes the assumption of a positive form of energy (dark energy) that acts like negative energy with no basis in known laws of physics. It requires assumptions of random chance events outside known laws of physics to cause cosmological phenomena (energy arising in a big bang, flatness of space) where no physical mechanisms are identified. 5. Current cosmology is in contradiction with known laws of physics. These contradictions have long remained unresolved. As they are naturally resolved under the new theory they can no longer be ignored. Current cosmology implies an initial singularity that expands in contradiction with known laws of physics. It also implies an unexplained acceleration event of positive masses at the beginning of a big bang that cannot provide coherent directional definition for expansion in 3D space.

In weighing the evidence, it needs to be kept in mind that the new theory of energy demonstrates a comprehensive alternative to current single-energy physics. It constitutes a **binary alternative** that may be right or wrong. Therefore, **characteristic elements of evidence that disprove single-energy theory are proof for dual-energy physics**. We need dual-energy theory to understand an origin of energy without an initial singularity. We need dual-energy theory to understand direction in cosmic expansion. We need dual-energy theory to understand what the physical cause for the phenomenon of 'dark energy' actually is, why this form of energy has repulsive effects and through what mechanism it can increase over time. These problems are artificial systemic problems of single-energy theory. There is no reason to expect that these problems can be resolved on the basis of single energy theory without the introduction of further contrived assumptions.

This is unrelated with the familiar standard for statistical proof for a discovery in particle physics of 5-sigma. 5-sigma relates to a chance of 1 in 3.5 million for a positive result to be caused by a statistical fluke in data sets. This is appropriate for particle physics which seeks patterns in statistical noise and had suggested false positives at the 3-sigma level before. Here, we are looking at a binary alternative of fundamental physics. Disproof of the current single-energy model follows directly from its demonstrated contradictions with the cosmological behavior of the universe.

I suggest the new theory establishes hard evidence for dual-energy physics.

As a nod to the expectation for testable predictions I have identified the <u>suggestion of an older age of</u> <u>the universe</u> than the value suggested by the application of the standard model of around 13.8 billion years.