Review of: "Planetary relationship as a key signature from the dark sector"

Leandros Perivolaropoulos[1]

1 University of Ioannina

Potential competing interests: No potential competing interests to declare.

This paper by Konstantin Zioutas et al. explores an intriguing hypothesis in cosmology, connecting planetary relationships to dark matter (DM) through gravitational lensing. While the concept is innovative, the paper exhibits significant shortcomings that undermine its scientific validity.

1. Lack of Empirical Evidence:
The paper's central claim is the gravitational lensing effect of planets on dark matter streams, influencing solar and terrestrial phenomena. However, it fails to provide robust empirical evidence supporting this claim. The coincidental alignment of planetary cycles with solar activities, such as the 11-year solar cycle, is intriguing but not conclusively indicative of a dark matter influence. In cosmology and astrophysics, coincidences, especially in complex systems, can often arise without direct causal relationships. The absence of clear, alternative observational effects that should accompany the proposed phenomena (like detectable gravitational anomalies or specific patterns in cosmic background radiation) leaves the hypothesis largely speculative.

2. Qualitative Arguments vs. Quantitative Analysis:
The paper predominantly relies on qualitative descriptions and lacks rigorous quantitative mathematical calculations. In the realm of theoretical physics, especially when dealing with concepts as elusive as dark matter, it is crucial to support hypotheses with detailed mathematical modeling. The absence of such calculations makes the paper's conclusions appear conjectural and insufficiently substantiated.

3. Theoretical Integration and Contextualization:
The paper insufficiently engages with the broader context of dark matter research. While it proposes a novel mechanism for dark matter detection, it does not thoroughly integrate this mechanism within the existing theoretical frameworks or models of dark matter. This lack of integration with current understanding and models in cosmology limits the paper's contribution to the field.

4. Methodological Concerns:
The methodology, primarily observational correlation, is a weak foundation for such a groundbreaking claim. The paper would benefit from a more robust methodological approach, incorporating simulations, predictions, and more rigorous statistical analysis to substantiate its hypotheses.

Conclusion:

While the paper by Zioutas et al. presents a thought-provoking idea, its lack of empirical evidence, reliance on qualitative arguments over quantitative analysis, insufficient theoretical integration, and weak methodological approach significantly detract from its scientific impact. It remains an interesting but highly speculative contribution to the field of cosmology and dark matter research.