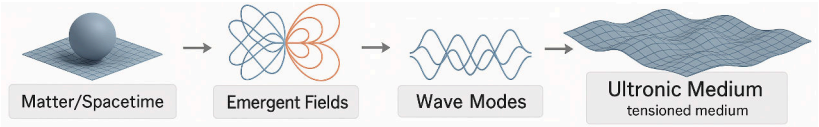

Ultronic Medium Hypothesis (UMH): Edges out ΛCDM with Pantheon+

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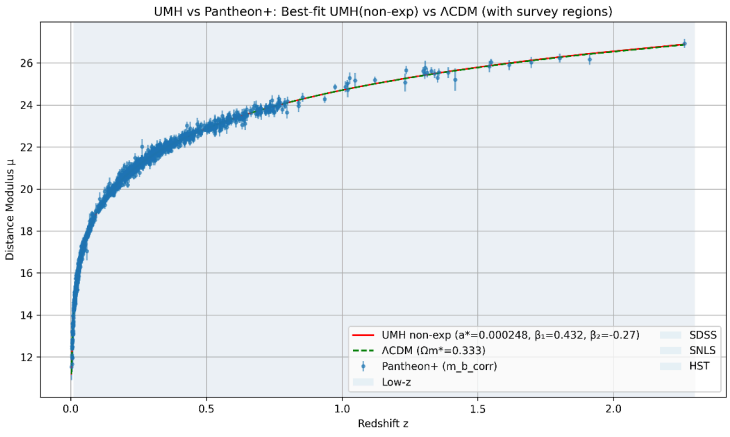
Version 1.0 - August 2025

What's the headline?

UMH **reproduces the Pantheon+ Hubble diagram with *No Dark Energy* and just one knob — the profiled absolute magnitude M — and achieves a better fit as ΛCDM, which requires two knobs (Ω_m + profiled M).**

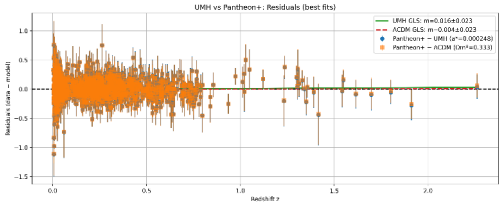
One–sentence summary. *The **Ultronic Medium Hypothesis (UMH)**[1] models spacetime as a mechanically real, Lorentz-invariant, tensioned wave medium; all observables — particles, fields, forces, and curvature — are coherent oscillations (propagating or self-trapped) of this medium, with light speed the mechanical wave speed $c = \sqrt{T_u/\rho_u}$, gravity arising from strain-energy gradients, quantization from stable nonlinear standing waves (solitons), gauge behavior from phase invariances, and no preferred frame because the governing wave equation is relativistic.*

Status of the UMH—Pantheon+ test. *I have a working end-to-end Pantheon+ pipeline (full STAT+SYS covariance): the UMH non-expansion model fits $N = 1624$ SNe with $\chi^2 = 1456.8$ using a single profiled intercept M (no shape freedom), shows no residual trends and near-Gaussian whitened residuals, and is statistically indistinguishable from flat ΛCDM (best $\Omega_m \approx 0.333$, $\chi^2 \approx 1457.0$). AIC/BIC slightly favor UMH due to fewer cosmology d.o.f. Therefore, Type Ia SNe alone does not require dark energy when UMH's endpoint redshift law is used.*



UMH vs Pantheon+: Best-fit UMH (non-expansion) vs ΛCDM.

Distance modulus μ versus redshift z for the Pantheon+ SNe (blue points with errors). Solid red — UMH non-expansion fit with $a = 0.000248$, $\beta_1 = 0.432$, $\beta_2 = -0.27$; dashed green — flat ΛCDM with $\Omega_m = 0.333$. Shaded bands mark Low-z, SDSS, SNLS, and HST survey regions. The two models produce nearly indistinguishable Hubble diagrams across $0 < z < 2.3$.



Pantheon+ residuals vs. redshift for UMH and ΛCDM.

Points show $\mu_{data} - \mu_{model}$ for the 1624 Pantheon+ SNe Ia after profiling a single intercept M. Blue circles: residuals relative to the best-fit UMH non-expansion model with $a = 0.000248$; orange squares: residuals relative to flat ΛCDM with $\Omega_m = 0.333$. Error bars are 1σ (STAT+SYS), and the dashed line marks zero. Residuals are centered on zero with no significant redshift trend, and the two models are visually indistinguishable across $0 < z < 2.3$.

Why this matters? *This is not built off the data: UMH derives the distance-redshift law from medium mechanics and — with one calibration — reproduces Pantheon+, then stakes falsifiable cross-probe predictions that distinguish it from ΛCDM.*

Contact: For questions, collaboration, or access to the simulation platform, contact the author at:
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[1] Main UMH Document and Simulation Code: https://github.com/UltronicPhysics/UMH