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A New Model Predicts Supernova Ia without Dark Energy CHARLES B. LEFFERT, Wayne State University — A new model of cosmology with four spatial dimensions will be described. The predicted values of the present cosmological parameters are in agreement with WMAP measurements except for the present value of the deceleration parameter. That present value, predicted to be near zero, also predicts the expansion rate of our universe is not accelerating. The present unknown mass called dark matter is replaced by a different 4-D substance, for which the new model predicts about the same mass. This new 4-D x-stuff scales with the expansion different than matter, but it and a new space-time dynamic, called spatial condensation, drives the expansion rate towards a constant value. The entire model and all of its predictions flow from a new dimensionless universal constant, $\kappa = G\rho t^2$. Neither the cosmological constant nor dark energy is needed to predict good agreement with supernova measurements, but a new procedure of analyzing the data shows much larger inherent scatter, for which the new model also explains.

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