What does this mean for cosmology? Ralph B. Hill, 1-2021, v2

This is just unfolding. Expect a period of robust discussion as current theory has been relying on a different methodological path which has been based on a quantitative model of expansion that has been assumed to represent reality. The new findings, by contrast, demonstrate that the current standard model of cosmology with its widely applied model of a kinetic expansion as formulated in the Friedmann equations is fundamentally wrong and quantitatively invalid. That model implied that an unexplained process has accelerated positive masses in a big bang, in directions, I may add, that cannot be defined. In this model the assumed kinetic inertia of theses masses provides the base component for an expansion which is subject to the slowing effects from attractive gravity from positive mass densities and from accelerating effects due to a 'mysterious' dark energy that remained unexplained. The new findings, however, demonstrate that cosmic expansion is not a kinetic process of accelerated positive masses. Shockingly, the main quantitative tool of cosmology as described by the Friedmann equations is found to be invalid. The evolution of the Hubble parameter over time instead depends on actual dynamic processes in the universe and there is no simple mathematical model for this.

The truly amazing news is that we now gain unprecedented and immediate insight into the fundamental physical behavior of our universe. We can now understand the fundamental physical processes of origin and expansion. We realize that the universe is necessarily flat, that it should contain equal amounts of negative and positive energy and we can conclude that it will not re-collapse. However, the new findings also show that the incredible precision suggested by the standard model in the quantitative determination of cosmic parameters from the dark matter content to the age of the universe has been unrealistic. The basis for a huge swath of works that have been dominating cosmological research falls away. The interpretation of information from CMB measurements is to be reconsidered and it is questionable if any requirements for dark matter remain. Obtaining new quantitative values, particularly for the age of the universe and its earlier expansion history, will require comprehensive new efforts in a new cosmological approach. It requires improved observation of the younger universe which may be facilitated by the upcoming James Webb Space Telescope. It may eventually benefit from a completely novel type of astrophysical survey to determine energies generated by gravity.