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A Scientific Analysis of Galaxy Tangential Speed of Revolution Curves III LAURENCE TAFF, Taff & No Associates — I last reported on my preliminary analysis of 350+ spiral, lenticular, irregular, polar ring, ring, and dwarf elliptical galaxies' tangential speed of revolution curves [TSRCs; and not rotation (*sic*) curves]. I now know that the consensus opinion in the literature—for which I can find no geometrical, numerical, statistical, nor scientific testing in 2,500+ publications—that the TSRC, $v_B(r)$, in the central bulges of these galaxies, is a linear function of the radial distance from the minor axis of symmetry r—is false. For the majority (>98%) $v_B(r)$ is rarely well represented by $v_B(r) = \omega_B r$ (for which the unique material model is an homogeneous, oblate, spheroid). Discovered via a scientific analysis of the gravitational potential energy computed directly from the observational data, $v_B(r)$ is almost exactly given by $v_B^2(r) = (\omega_B r)^2(1 + \eta r^2)$ with $|\eta| < 10^{-2}$ and frequently orders of magnitude less. The corresponding mass model is the simplest generalization: a two component homoeoid. The set of possible periodic orbits, based on circular trigonometric functions, becomes a set of periodic orbits based on the Jacobian elliptic functions. Once again it is possible to prove that the mass-to-light ratio can neither be a constant nor follow the de Vaucouleurs $R^{1/4}$ rule.

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