(a): Orbital Refutation of Line Element G.R.

Consider the line element:

$$ds^2 = c^2 d\tau^2 = m(r)\, c^2 dt^2 - \frac{dr^2}{m(r)} - r^2 d\theta^2 \quad -(1)$$

then

$$\left(\frac{dr}{d\theta}\right)^2 = r^4\left(\frac{1}{b^2} - m(r)\left(\frac{1}{a^2} + \frac{1}{r^2}\right)\right) \quad -(2)$$

where

$$b = \frac{Lc}{E}, \quad a = \frac{L}{mc}. \quad -(3)$$

However, the observed solar system orbit is the precessing ellipse:

$$r = \frac{\alpha}{1 + \epsilon\cos(x\theta)} \quad -(4)$$

so from eq. (4):

$$\left(\frac{dr}{d\theta}\right)^2 = \left(\frac{x\epsilon}{\alpha}\right)^2 r^4 \sin^2(x\theta) \quad -(5)$$

so

$$m(r) = \frac{A}{B + \frac{1}{r^2}} \quad -(6)$$

where

$$A = \left(\frac{E}{Lc}\right)^2 - \left(\frac{x\epsilon}{\alpha}\right)^2 \sin^2(x\theta) \quad -(7)$$

$$B = \left(\frac{mc}{L}\right)^2 \quad -(8)$$

Obviously,

$$m(r) \neq 1 - \frac{r_0}{r} \quad -(8)$$

This is a very clear refutation of almost all of Einsteinian general relativity.

2) In addition:

$$\sin^2(x\theta) = 1 - \cos^2(x\theta) \quad -(9)$$

$$\cos^2(x\theta) = \frac{1}{\epsilon^2}\left(\frac{\alpha}{r} - 1\right)^2 \quad -(10)$$

so:

$$A = \left(\frac{E}{Lc}\right)^2 - \left(\frac{x\epsilon}{\alpha}\right)^2\left[1 - \frac{1}{\epsilon^2}\left(\frac{\alpha}{r} - 1\right)^2\right] \quad -(11)$$

Also:

$$m(r) = \frac{1}{2}\left(\frac{E}{mc^2}\right)^2\left(1 \pm \left(1 - 4\left(\frac{mc^2}{E}\right)\frac{v^2}{c^2}\right)^{1/2}\right) \quad -(12)$$

From eqs. (6) and (12)

$$\frac{A}{B + \frac{1}{r^2}} - \frac{1}{2}\left(\frac{E}{mc^2}\right)^2 = \pm\frac{1}{2}\left(1 - 4\left(\frac{mc^2}{E}\right)\frac{v^2}{c^2}\right)^{1/2} \quad -(13)$$

This equation does not reduce to special relativity:

$$E \underset{r \to \infty}{\not\rightarrow} \gamma mc^2 \quad -(14)$$

where

$$\gamma = \left(1 - \frac{v^2}{c^2}\right)^{-1/2} \quad -(15)$$