264(8): Proof that the Einstein Field Equation does Not Give a Precessing Ellipse

Consider the force law first given by von Leibniz in 1689:

$$m\frac{d^2r}{dt^2} = -\frac{mMG}{r^2} + \frac{L^2}{mr^3} \quad -(1)$$

in the usual notation of previous notes and papers. This gives the ellipse and conical sections:

$$r = \frac{\alpha}{1+\epsilon\cos\theta} \quad -(2)$$

Next consider the force law:

$$m\frac{d^2r}{dt^2} = (x^2-1)\frac{L^2}{mr^3} - \frac{x^2L^2}{\alpha mr^2} + \frac{L^2}{mr^3}$$

$$= x^2\left(-\frac{mMG}{r^2} + \frac{L^2}{mr^3}\right) \quad -(3)$$

using

$$\alpha = \frac{L^2}{m^2MG} \quad -(4)$$

Eq. (3) gives the orbit:

$$r = \frac{\alpha}{1+\epsilon\cos(x\theta)} \quad -(5)$$

Eq. (5) is the experimentally observed orbit when:

2)

$$x = 1 + \frac{3mG}{c^2 \alpha} \quad -(6)$$

Note that eq. (3) can be written as the Newtonian equation:

$$m\frac{d^2 r}{dt_1^2} = -\frac{mMG}{r^2} + \frac{L^2}{mr^3} \quad -(7)$$

when

$$\boxed{t_1 = xt.} \quad -(8)$$

So the effect of orbital precession is:

$$t \longrightarrow \frac{t}{x} = t\left(1 + \frac{3MG}{c^2 \alpha}\right)^{-1} \quad -(9)$$

$$\boxed{t \sim t\left(1 - \frac{3MG}{c^2 \alpha}\right)} \quad -(10)$$

<u>Eq. (3) is the correct force law.</u> The claim by standard physicists to produce eq. (5) is based on the force law from the Einstein field equation and Schwarzschild metric:

$$m\frac{d^2 r}{dt^2} = -\frac{mMG}{r^2} + \frac{L^2}{mr^3} - \frac{3GML^2}{mc^2 r^4} \quad -(11)$$

<u>which</u> is not the <u>correct force law (3)</u> Q.E.D.

3) It is possible to try to force eq. (11) to be the same as eq. (3) as follows:

$$A x^2 = A - \frac{3GML^2}{mc^2 r^4} \quad -(12)$$

where

$$A = -\frac{mMG}{r^2} + \frac{L^2}{mr^3} \quad -(13)$$

so

$$x^2 = 1 - \frac{3GML^2}{Amc^2 r^4} \quad -(14)$$

Obviously this "forced agreement" leads to an x that depends on r, whereas the observed x is a constant. This proves beyond doubt that the Einstein theory is incorrect.

The orbit observed experimentally is

$$\theta = \frac{1}{x} \cos^{-1}\left(\frac{1}{\epsilon}\left(\frac{\alpha}{r} - 1\right)\right) \quad -(15)$$

where

$$x = 1 + \frac{3MG}{c^2 \alpha} \quad -(16)$$

but the Einstein orbit is eq. (15) with x given by eq. (14):

$$x = \left(1 - \frac{3GML^2}{Amc^2 r^4}\right)^{1/2} \quad -(17)$$

) In order to illustrate the complete incorrectness of the Einstein theory it would be interesting to plot eq. (15) with x given firstly by eq. (16) and secondly by eq. (17) in the region of validity of the calculation:

$$\frac{3MG}{c^2} < \alpha \quad -(18)$$

where

$$\alpha = \frac{L^2}{m^2 M G} \quad -(19)$$

Therefore:

$$L^2 = m^2 M G \alpha \quad -(20)$$

For an ellipse:

$$\alpha = a(1-\epsilon^2) \quad -(21)$$

where a is the semi major axis and ϵ the eccentricity. The quantity L^2 can therefore be observed by astronomy:

$$L^2 = m^2 M G a (1-\epsilon^2) \quad -(22)$$

The quantity x in the Einstein theory is:

$$x = \left[1 - \frac{3(mMG)^2 a (1-\epsilon^2)}{A m c^2 r^4} \right]^{1/2} \quad -(23)$$

5)
where:

$$A = -\frac{mMG}{r^2} + \frac{L^2}{mr^3}$$

$$= -\frac{mMG}{r^2} + \frac{mMGa(1-\epsilon^2)}{r^3}$$

$$= -\frac{mMG}{r^2}\left(1 - \frac{a}{r}(1-\epsilon^2)\right) \quad -(24)$$

so

$$x = \left(1 - \frac{3MGa(1-\epsilon^2)}{c^2 r^2\left(1-\frac{a}{r}(1-\epsilon^2)\right)}\right)^{1/2} \quad -(25)$$

The experimentally observed x is:

$$x = 1 + \frac{3MG}{c^2\alpha} \quad -(26)$$

$$= 1 + \frac{3MG}{c^2 a(1-\epsilon^2)}$$

Eq. (25) can be simplified to:

$$x = \left(1 + \frac{3MG}{c^2}\left(1 - \frac{r}{\alpha}\right)^{-1}\right)^{1/2} \quad -(27)$$

The Einstein theory is not only incorrect, but at

$$r = \alpha \quad -(28)$$

6) the turning point of the precessing ellipse, x_1 becomes infinite:

$$x \to \infty \quad \text{at } r = \alpha \quad -(29)$$

whereas the observed x is very close to unity. This disaster for standard physics comes from trying to force the incorrect force law (11) to give the experimentally observed eq. (5). The correct force law is the quasi Newtonian eq. (3), which is the Leibniz force law of 1689 with t replaced by $t\left(1 - \frac{3MG}{c^2\alpha}\right)$.