# Relativity theory failures nail # 7 or GG Orion apsidal motion
# Year 2000 proof of "silly" general relativity theory
# Case of GG Orion binary stars apsidal motion puzzle solution

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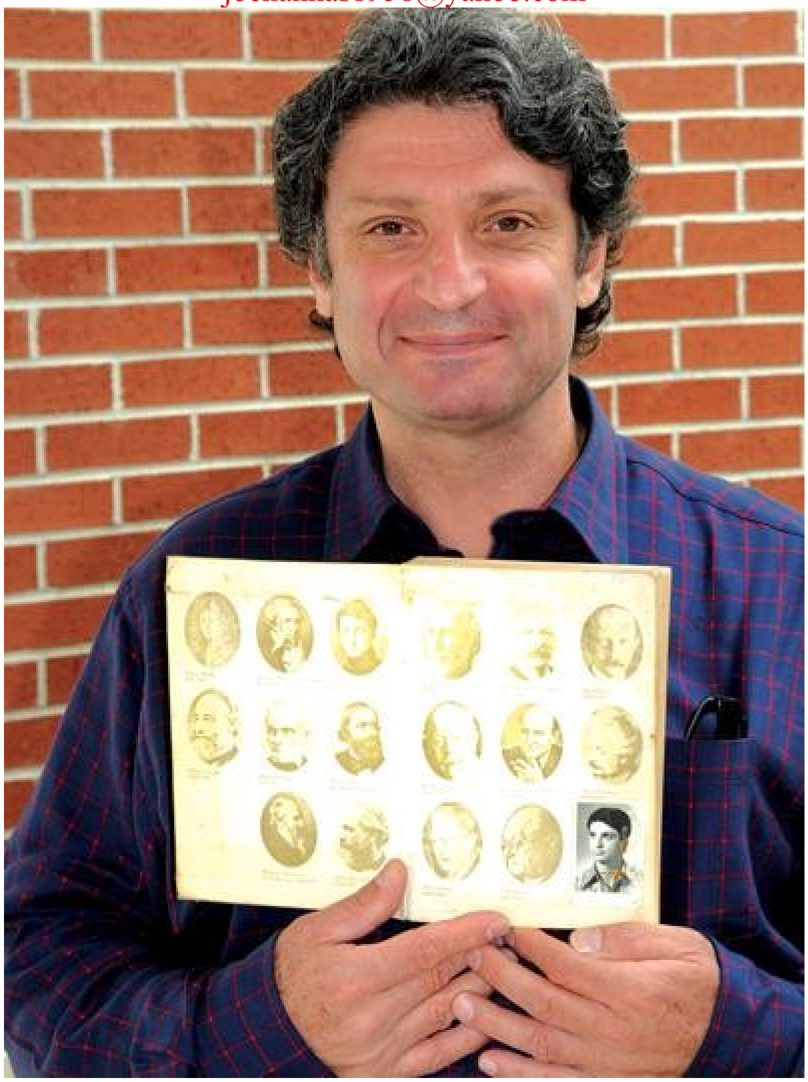

Greeting: My name is Joe Nahhas showing my picture stapled to my 1979 thermo book whispering to 350 years of physicists "It is not just Einstein is wrong but physics is wrong past 350 years starting with Newton and exploding with Einstein.

The elimination of relativity theory is a matter of time and not a matter of science. If it does not fit in three dimensions it is not physics but Royal Imperial Corporate physics with scientific value of nothing and nothing is relativity theory.

Greetings again: My name is **Joe Nahhas**. I am the founder of **real time physics** July 4th, 1973

It is the fact that not only Einstein is wrong but all 100,000 living physicists are wrong and the 100,000 passed away physicists were wrong because physics is wrong for past 350 years. This is the problem where relativity theory collapsed. The simplest problem in all of physics is the two body problem where two eclipsing stars in motion in front of modern telescopes and computerized equipment taking data and said "NO" to relativity.

For 350 years Newton's equations were solved wrong and the new solution is a real time physics solution of $r(\theta, t) = [a(1-\varepsilon^2)/(1+\varepsilon \text{ cosine } \theta)]\, e^{[\lambda(r) + i\,\omega(r)]\,t}$

That gave apsidal rate better than anything said or published in all of physics of:

$$W° (Cal) = (-720x36526/T) \{[\sqrt{(1-\varepsilon^2)}]/(1-\varepsilon)^2]\} [(v° + v^*)/c]^2 \text{ degrees/100 year}$$

**Abstract:** This is the solution to the 150 years apsidal motion puzzle solution that is not solvable by space-time physics or any said or published physics including 109 years of noble prize winner physics and 400 years of astronomy. Binary stars apsidal motion or "Apparent" rate of orbital axial rotation is visual effects along the line of sight of moving objects applied to the angular velocity at Apses. From the thousands of close binary stars astronomers picked a dozen sets of binary stars systems that would be a good test of relativity theory and collected data for all past century and relativity theory failed every one of them. It is not just about dumping relativity theory but dumping relativity theory and space-timers with it. This rate of "apparent" axial rotation is given by this new equation.

$W° (ob) = (-720x36526/T) \{[\sqrt{(1-\varepsilon^2)}]/(1-\varepsilon)^2]\} [(v° + v^*)/c]^2$ degrees/100 years

T = period; $\varepsilon$ = eccentricity; v° = spin velocity effect; v*= orbital velocity effect

In general v* = v* (p) + v*(s) and v° = v° (p) + v° (s); p = primary; s= secondary

And v* + v° = 223.335 km/sec; $\varepsilon$ = 0.2218; T = 6.6314948 days

W° (ob) = 3.45°/century = 0.0345°/year

U [years] = 360/[0.0345°/year]

U = 10,432 years Nahhas

U (observed) = 10,700+/-4500years

**Real time Universal Mechanics Solution:** For 350 years Physicists Astronomers and Mathematicians missed Kepler's time dependent equation introduced here and transformed Newton's equation into a time dependent Newton' equation and together these two equations explain apsidal motion as "apparent" light aberrations visual effects along the line of sight due to differences between time dependent measurements and time independent measurements These two equations combines classical mechanics and quantum mechanics into one Universal mechanics solution and in practice it amounts to measuring light aberrations of moving objects of angular velocity at Apses.

All there is in the Universe is objects of mass m moving in space (x, y, z) at a location **r** = **r** (x, y, z). The state of any object in the Universe can be expressed as the product

**S** = m **r**; State = mass x location:

**P** = d **S**/d t = m (d **r**/d t) + (dm/d t) **r** = Total moment

= change of location + change of mass

$= m\,v + m'\,r$; $v$ = velocity = $d\,r/d\,t$; $m'$ = mass change rate

$\mathbf{F} = d\,\mathbf{P}/d\,t = d^2\mathbf{S}/dt^2$ = Total force

$= m\,(d^2\mathbf{r}/dt^2) + 2(dm/d\,t)\,(d\,\mathbf{r}/d\,t) + (d^2m/dt^2)\,\mathbf{r}$

$= m\,\boldsymbol{\gamma} + 2m'\mathbf{v} + m''\,\mathbf{r}$; $\gamma$ = acceleration; $m''$ = mass acceleration rate

<u>In polar coordinates system</u>

We Have $\mathbf{r} = r\,\mathbf{r}_{(1)}$ ; $\mathbf{v} = r'\,\mathbf{r}_{(1)} + r\,\theta'\,\boldsymbol{\theta}_{(1)}$ ; $\boldsymbol{\gamma} = (r'' - r\theta'^2)\mathbf{r}_{(1)} + (2r'\theta' + r\,\theta'')\boldsymbol{\theta}_{(1)}$

$\mathbf{r}$ = location; $\mathbf{v}$ = velocity; $\boldsymbol{\gamma}$ = acceleration

$\mathbf{F} = m\,\boldsymbol{\gamma} + 2m'\mathbf{v} + m''\,\mathbf{r}$

$\mathbf{F} = m\,[(r''-r\theta'^2)\,\mathbf{r}_{(1)} + (2r'\theta' + r\,\theta'')\,\boldsymbol{\theta}_{(1)}] + 2m'[r'\,\mathbf{r}_{(1)} + r\,\theta'\,\boldsymbol{\theta}_{(1)}] + (m''\,r)\,\mathbf{r}_{(1)}$

$= [d^2\,(m\,r)/dt^2 - (m\,r)\,\theta'^2]\,\mathbf{r}_{(1)} + (1/mr)\,[d\,(m^2r^2\theta')/d\,t]\,\boldsymbol{\theta}_{(1)}$

$= [-GmM/r^2]\,\mathbf{r}_{(1)}$ ------------------------------- Newton's Gravitational Law

Proof**:**

First $\mathbf{r} = r\,[\text{cosine}\,\theta\,\hat{\imath} + \text{sine}\,\theta\,\hat{J}] = r\,\mathbf{r}_{(1)}$

Define $\mathbf{r}_{(1)} = \text{cosine}\,\theta\,\hat{\imath} + \text{sine}\,\theta\,\hat{J}$

Define $\mathbf{v} = d\,\mathbf{r}/d\,t = r'\,\mathbf{r}_{(1)} + r\,d[\mathbf{r}_{(1)}]/d\,t$

$= r'\,\mathbf{r}_{(1)} + r\,\theta'[-\text{sine}\,\theta\,\hat{\imath} + \text{cosine}\,\theta\hat{J}]$

$= r'\,\mathbf{r}_{(1)} + r\,\theta'\,\boldsymbol{\theta}_{(1)}$

Define $\boldsymbol{\theta}_{(1)} = -\text{sine}\,\theta\,\hat{\imath} + \text{cosine}\,\theta\,\hat{J}$;

And with $\mathbf{r}_{(1)} = \text{cosine}\,\theta\,\hat{\imath} + \text{sine}\,\theta\,\hat{J}$

Then $d\,[\boldsymbol{\theta}_{(1)}]/d\,t = \theta'\,[-\text{cosine}\,\theta\,\hat{\imath} - \text{sine}\,\theta\,\hat{J} = -\theta'\,\mathbf{r}_{(1)}$

And $d\,[\mathbf{r}_{(1)}]/d\,t = \theta'\,[-\text{sine}\,\theta\,\hat{\imath} + \text{cosine}\,\theta\,\hat{J}] = \theta'\,\boldsymbol{\theta}_{(1)}$

Define $\boldsymbol{\gamma} = d\,[r'\,\mathbf{r}_{(1)} + r\,\theta'\,\boldsymbol{\theta}_{(1)}]\,/d\,t$

$= r''\,r_{(1)} + r'd\,[\mathbf{r}_{(1)}]/d\,t + r'\,\theta'\,\mathbf{r}_{(1)} + r\,\theta''\,\mathbf{r}_{(1)} + r\,\theta'd\,[\theta_{(1)}]/d\,t$

$\boldsymbol{\gamma} = (r'' - r\theta'^2)\,\mathbf{r}_{(1)} + (2r'\theta' + r\,\theta'')\,\boldsymbol{\theta}_{(1)}$

With $d^2\,(m\,r)/dt^2 - (m\,r)\,\theta'^2 = -GmM/r^2$ Newton's Gravitational Equation (1)

And $d\,(m^2r^2\theta')/d\,t = 0$ Central force law (2)

<u>(2)</u>: $d\,(m^2r^2\theta')/d\,t = 0$

Then $m^2r^2\theta'$ = constant

$= H\,(0, 0)$

$= m^2\,(0, 0)\,h\,(0, 0)$; $h\,(0, 0) = r^2\,(0, 0)\,\theta'(0, 0)$

$= m^2\,(0, 0)\,r^2\,(0, 0)\,\theta'(0, 0)$; $h\,(\theta, 0) = [r^2\,(\theta, 0)]\,[\theta'(\theta, 0)]$

$= [m^2\,(\theta, 0)]\,h\,(\theta, 0)$; $h\,(\theta, 0) = [r^2\,(\theta, 0)]\,[\theta'(\theta, 0)]$

$= [m^2\,(\theta, 0)]\,[r^2\,(\theta, 0)]\,[\theta'(\theta, 0)]$

$= [m^2\,(\theta, t)]\,[r^2\,(\theta, t)]\,[\theta'\,(\theta, t)]$

$= [m^2(\theta, 0)\,m^2(0,t)][\,r^2(\theta,0)r^2(0,t)][\theta'(\theta, t)]$

$= [m^2(\theta, 0)\,m^2(0,t)][\,r^2(\theta,0)r^2(0,t)][\theta'(\theta, 0)\,\theta'\,(0, t)]$

With $m^2r^2\theta'$ = constant

Differentiate with respect to time

Then $2mm'r^2\theta' + 2m^2rr'\theta' + m^2r^2\theta'' = 0$
Divide by $m^2r^2\theta'$
Then $2 (m'/m) + 2(r'/r) + \theta''/\theta' = 0$
This equation will have a solution $2 (m'/m) = 2[\lambda (m) + ì\, \omega (m)]$
And $2(r'/r) = 2[\lambda (r) + ì\, \omega (r)]$
And $\theta''/\theta' = -2\{\lambda (m) + \lambda (r) + ì\, [\omega (m) + \omega (r)]\}$

Then $(m'/m) = [\lambda (m) + ì\, \omega (m)]$
Or $d m/m\, d t = [\lambda (m) + ì\, \omega (m)]$
And $dm/m = [\lambda (m) + ì\, \omega (m)]\, d t$
Then $m = m (0)\, e^{[\lambda (m) + ì\, \omega (m)] t}$

$m = m (0)\, m (0, t); m (0, t)\, e^{[\lambda (m) + ì\, \omega (m)] t}$

With initial spatial condition that can be taken at t = 0 anywhere then $m (0) = m (\theta, 0)$
And $m = m (\theta, 0)\, m (0, t) = m (\theta, 0)\, e^{[\lambda (m) + ì\, \omega (m)] t}$
And $m (0, t) = e^{[\lambda (m) + ì\, \omega (m)] t}$
Similarly we can get
Also, $r = r (\theta, 0)\, r (0, t) = r (\theta, 0)\, e^{[\lambda (r) + ì\, \omega (r)] t}$
With $r (0, t) = e^{[\lambda (r) + ì\, \omega (r)] t}$
Then $\theta'(\theta, t) = \{H(0, 0)/[m^2(\theta,0)\, r(\theta,0)]\}e^{-2\{[\lambda(m) + \lambda(r)] + ì\, [\omega(m) + \omega(r)]\}t}$ -----I
And $\theta'(\theta, t) = \theta' (\theta, 0)]\, e^{-2\{[\lambda (m) + \lambda(r)] + ì\, [\omega (m) + \omega (r)]\} t}$ ------------------------I
And, $\theta'(\theta, t) = \theta' (\theta, 0)\, \theta' (0, t)$
And $\theta' (0, t) = e^{-2\{[\lambda (m) + \lambda (r)] + ì\, [\omega (m) + \omega(r)]\} t}$
Also $\theta'(\theta, 0) = H (0, 0)/ m^2 (\theta, 0)\, r^2 (\theta, 0)$
And $\theta'(0, 0) = \{H (0, 0)/ [m^2 (0, 0)\, r (0, 0)]\}$

<u>With (1)</u>: $d^2 (m r)/dt^2 - (m r)\, \theta'^2 = -GmM/r^2 = -Gm^3M/m^2r^2$
And $d^2 (m r)/dt^2 - (m r)\, \theta'^2 = -Gm^3 (\theta, 0)\, m^3 (0, t)\, M/ (m^2r^2)$
Let $m r =1/u$
Then $d (m r)/d t = -u'/u^2 = - (1/u^2) (\theta')\, d u/d \theta = (- \theta'/u^2)\, d u/d \theta = -H\, d u/d \theta$
And $d^2 (m r)/dt^2 = -H\theta' d^2u/d\theta^2 = - Hu^2 [d^2u/d\theta^2]$

$-Hu^2 [d^2u/d\theta^2] - (1/u) (Hu^2)^2 = -Gm^3 (\theta, 0)\, m^3 (0, t)\, Mu^2$
$[d^2u/ d\theta^2] + u = Gm^3 (\theta, 0)\, m^3 (0, t)\, M/ H^2$

$t = 0; m^3 (0, 0) = 1$
$u = Gm^3 (\theta, 0)\, M/ H^2 + A \text{ cosine } \theta =Gm (\theta, 0)\, M (\theta, 0)/ h^2 (\theta, 0)$

And $m r = 1/u = 1/ [Gm (\theta, 0)\, M (\theta, 0)/ h (\theta, 0) + A \text{ cosine } \theta]$
$= [h^2/ Gm (\theta, 0)\, M (\theta, 0)]/ \{1 + [Ah^2/ Gm (\theta, 0)\, M (\theta, 0)] [\text{cosine } \theta]\}$
$= [h^2/Gm (\theta, 0)\, M (\theta, 0)]/ (1 + \varepsilon \text{ cosine } \theta)$

Then $m (\theta, 0)\, r (\theta, 0) = [a (1-\varepsilon^2)/ (1+ \varepsilon \text{ cosine } \theta)]\, m (\theta, 0)$
Dividing by $m (\theta, 0)$

Then $r(\theta, 0) = a(1-\varepsilon^2)/(1+\varepsilon \text{ cosine } \theta)$

This is Newton's Classical Equation solution of two body problem which is the equation of an ellipse of semi-major axis of length a and semi minor axis $b = a\sqrt{(1-\varepsilon^2)}$ and focus length $c = \varepsilon a$

And $m r = m(\theta, t)\, r(\theta, t) = m(\theta, 0)\, m(0, t)\, r(\theta, 0)\, r(0, t)$

Then, $r(\theta, t) = [a(1-\varepsilon^2)/(1+\varepsilon \text{ cosine } \theta)]\, e^{[\lambda(r) + i\,\omega(r)]t}$ --------------------------- II

This is Newton's time dependent equation that is missed for 350 years

If $\lambda(m) \approx 0$ fixed mass and $\lambda(r) \approx 0$ fixed orbit; then

Then $r(\theta, t) = r(\theta, 0)\, r(0, t) = [a(1-\varepsilon^2)/(1+\varepsilon \text{ cosine } \theta)]\, e^{i\,\omega(r)t}$

And $m = m(\theta, 0)\, e^{+i\,\omega(m)t} = m(\theta, 0)\, e^{i\,\omega(m)t}$

We Have $\theta'(0, 0) = h(0, 0)/r^2(0, 0) = 2\pi ab/Ta^2(1-\varepsilon)^2$

$= 2\pi a^2[\sqrt{(1-\varepsilon^2)}]/T a^2(1-\varepsilon)^2$

$= 2\pi[\sqrt{(1-\varepsilon^2)}]/T(1-\varepsilon)^2$

Then $\theta'(0, t) = \{2\pi[\sqrt{(1-\varepsilon^2)}]/T(1-\varepsilon)^2\}\, \text{Exp}\{-2[\omega(m) + \omega(r)]t$

$= \{2\pi[\sqrt{(1-\varepsilon^2)}]/(1-\varepsilon)^2\}\, \{\text{cosine } 2[\omega(m) + \omega(r)]t - i \sin 2[\omega(m) + \omega(r)]t\}$

$= \theta'(0, 0)\, \{1 - 2\sin^2[\omega(m) + \omega(r)]t\}$

$- 2i\, \theta'(0, 0) \sin[\omega(m) + \omega(r)]t \text{ cosine } [\omega(m) + \omega(r)]t$

Then $\theta'(0, t) = \theta'(0, 0)\, \{1 - 2\text{sine}^2[\omega(m)t + \omega(r)t]\}$

$- 2i\, \theta'(0, 0) \sin[\omega(m) + \omega(r)]t \text{ cosine } [\omega(m) + \omega(r)]t$

$\Delta\theta'(0, t) = \text{Real } \Delta\theta'(0, t) + \text{Imaginary } \Delta\theta(0, t)$

$\text{Real } \Delta\theta(0, t) = \theta'(0, 0)\, \{1 - 2\text{ sine}^2[\omega(m)t\, \omega(r)t]\}$

Let $W(\text{cal}) = \Delta\theta'(0, t)(\text{observed}) = \text{Real } \Delta\theta(0, t) - \theta'(0, 0)$

$= -2\theta'(0, 0)\, \text{sine}^2[\omega(m)t + \omega(r)t]$

$= -2[2\pi[\sqrt{(1-\varepsilon^2)}]/T(1-\varepsilon)^2]\, \text{sine}^2[\omega(m)t + \omega(r)t]$

And $W(\text{cal}) = -4\pi[\sqrt{(1-\varepsilon^2)}]/T(1-\varepsilon)^2]\, \text{sine}^2[\omega(m)t + \omega(r)t]$

<u>If this apsidal motion is to be found as visual effects</u>, then

With, $v°$ = spin velocity; $v^*$ = orbital velocity; $v°/c = \tan \omega(m) T°$; $v^*/c = \tan \omega(r) T^*$

Where $T°$ = spin period; $T^*$ = orbital period

And $\omega(m) T° = \text{Inverse tan } v°/c$; $\omega(r) T^* = \text{Inverse tan } v^*/c$

$W(\text{ob}) = -4\pi[\sqrt{(1-\varepsilon^2)}]/T(1-\varepsilon)^2]\, \text{sine}^2[\text{Inverse tan } v°/c + \text{Inverse tan } v^*/c]$ radians

Multiplication by $180/\pi$

$W(\text{ob}) = (-720/T)\, \{[\sqrt{(1-\varepsilon^2)}]/(1-\varepsilon)^2\}\, \text{sine}^2\{\text{Inverse tan } [v°/c + v^*/c]/[1 - v°\, v^*/c^2]\}$ degrees and multiplication by 1 century = 36526 days and using T in days

$W°(\text{ob}) = (-720\text{x}36526/T\text{days})\, \{[\sqrt{(1-\varepsilon^2)}]/(1-\varepsilon)^2\}$ x

$\text{sine}^2\{\text{Inverse tan } [v°/c + v^*/c]/[1 - v°\, v^*/c^2]\}$ degrees/100 years

Approximations I

With $v° << c$ and $v^* << c$, then $v° v^* <<< c^2$ and $[1 - v° v^*/c^2] \approx 1$
Then $W° (ob) \approx (-720x36526/Tdays) \{[\sqrt{(1-\varepsilon^2)}]/ (1-\varepsilon)^2\}$ x sine² Inverse tan $[v°/c + v^*/c]$ degrees/100 years

Approximations II
With $v° << c$ and $v^* << c$, then sine Inverse tan $[v°/c + v^*/c] \approx (v° + v^*)/c$
$W° (ob) = (-720x36526/Tdays) \{[\sqrt{(1-\varepsilon^2)}]/ (1-\varepsilon)^2\} \times [(v° + v^*)/c]^2$ degrees/100 years
This is the equation that gives the correct apsidal motion rates -----------------------III

The circumference of an ellipse: $2\pi a (1 - \varepsilon^2/4 + 3/16(\varepsilon^2)^2 - --.) \approx 2\pi a (1-\varepsilon^2/4)$; $R = a (1-\varepsilon^2/4)$
Where $v (m) = \sqrt{[GM^2/ (m + M) a (1-\varepsilon^2/4)]}$
And $v (M) = \sqrt{[Gm^2 / (m + M) a (1-\varepsilon^2/4)]}$
Looking from top or bottom at two stars they either spin in clock (↑) wise or counter clockwise (↓)
Looking from top or bottom at two stars they either approach each other coming from the top (↑) or from the bottom (↓)
Knowing this we can construct a table and see how these two stars are formed. There are many combinations of velocity additions and subtractions and one combination will give the right answer.

1- Advance of Perihelion of mercury. [No spin factor] Because data are given with no spin factor

$G=6.673x10^{-11}$; $M=2x\ 10^{30}$kg; $m=.32x10^{24}$kg; $\varepsilon = 0.206$; T=88days
And c = 299792.458 km/sec; a = 58.2km/sec; $1-\varepsilon^2/4 = 0.989391$
With $v° = 2$meters/sec
And $v^* = \sqrt{[GM/a (1-\varepsilon^2/4)]} = 48.14$ km/sec
Calculations yields: $v = v^* + v° = 48.14$km/sec (mercury)
And $[\sqrt{(1- \varepsilon^2)}] (1-\varepsilon)^2 = 1.552$
$W'' (ob) = (-720x36526x3600/T) \{[\sqrt{(1-\varepsilon^2)}]/ (1-\varepsilon)^2\} (v/c)^2$
$W'' (ob) = (-720x36526x3600/88) \times (1.552) (48.14/299792)^2 = 43.0$"/century

This is the rate of for the advance of perihelion of planet mercury explained as "apparent" without the use of fictional forces or fictional universe of space-time confusions of physics of relativity.

**Venus Advance of perihelion solution:**

$W'' (ob) = (-720x36526x3600/T) \{[\sqrt{(1-\varepsilon^2)}]/ (1-\varepsilon)^2\} [(v°+ v^*)/c]^2$ seconds/100 years

Data: T=244.7days $v°= v° (p)] = 6.52$km/sec; $\varepsilon = 0.0.0068$; $v^*(p) = 35.12$
Calculations

$1-\varepsilon = 0.0068$; $(1-\varepsilon^2/4) = 0.99993$; $[\sqrt{(1-\varepsilon^2)}] / (1-\varepsilon)^2 = 1.00761$

$G=6.673 \times 10^{-11}$; $M_{(0)} = 1.98892 \times 19^{30}$kg; $R = 108.2 \times 10^{9}$m

$V^*(p) = \sqrt{[GM^2/(m + M) a (1-\varepsilon^2/4)]} = 41.64$ km/sec
Advance of perihelion of Venus motion is given by this formula:

$W''(ob) = (-720 \times 36526 \times 3600/T) \{[\sqrt{(1-\varepsilon^2)}]/(1-\varepsilon)^2]\} [(v° + v^*)/c]^2$ seconds/100 years

$$W''(ob) = (-720 \times 36526 \times 3600/T) \{[\sqrt{(1-\varepsilon^2)}]/(1-\varepsilon)^2\} \text{ sine}^2 [\text{Inverse tan } 41.64/300{,}000]$$
$$= (-720 \times 36526 \times 3600/224.7)(1.00762)(41.64/300{,}000)^2$$

**W" (observed) = 8.2"/100 years; observed 8.4"/100years**

| Primary → Secondary ↓ | v°(p) ↑ v* (p)↑ | v° (p) ↑v* (p)↓ | v° (p) ↓ v* (p) ↑ | v° (p) ↓V* (p) ↓ |
|---|---|---|---|---|
| v°(s) ↑ v* (s)↑ | Spin=[↑,↑] [↑,↑]=orbit | [↑,↑][↓,↑] | [↓,↑][↑,↑] | [↓,↑][↓,↑] |
| Spin results | v°(p) + v°(s) | v°(p) + v°(s) | - v°(p) + v°(s) | -v°(p) + v°(s) |
| Orbit results | v*(p) + v*(s) | -v*(p) + v*(s) | v* (p) + v*(s) | -v* (p) + v* (s) |
| Examples | GG Orion | | | |
| v° (s) ↑v* (s)↓ | [↑,↑][↑,↓] | [↑,↑][↓,↓] | [↓,↑][↑,↓] | [↓,↑][↓,↓] |
| Spin results | v°(p) + v°(s) | v°(p) + v°(s) | -v°(p) + v°(s) | -v°(p) + v°(s) |
| Orbit results | v*(p) - v*(s) | -v*(p) - v*(s) | v*(p) - v*(s) | -v* (p) - v* (s) |
| Examples | | | | |
| v° (p) ↓ v*(s) ↑ | [↑,↓][↑,↑] | [↑,↓][↓,↑] | [↓,↓][↑,↑] | [↓,↓][↓,↑] |
| Spin results | v°(p) - v°(s) | v°(p) - v°(s) | -v°(p) - v°(s) | -v°(p) - v°(s) |
| Orbit results | v*(p) + v*(s) | -v*(p) + v*(s) | v*(p) + v*(s) | -v* (p) + v* (s) |
| Examples | | | | |
| v° (s) ↓V*(s) ↓ | [↑,↓][↑,↓] | [↑,↓][↓,↓] | [↓,↓][↑,↓] | [↓,↓][↓,↓] |
| Spin results | v°(p) - v°(s) | v°(p) - v°(s) | -v°(p) - v°(s) | -v°(p) - v°(s) |
| Orbit results | v*(p) - v*(s) | -v*(p) - v*(s) | v*(p) - v*(s) | -v* (p) - v* (s) |
| Examples | | | | GG Orion |

<u>Data:</u> T=6.6314948; $m = 2.342\, M_{(0)}$; $M = 0.2338\, M_{(0)}$; $R_{(1)} = 1.852\, R_{(0)}$; $R_{(2)} = 1.830$
$\varepsilon = 0.2218$; $1 - \varepsilon = 0.7782$; $r_{(1)} = 0.0746$; $r_{(2)} = .988\, r_{(1)}$; $m + M = 4.68\, M_{(0)}$
And [v° (p); v° (s)] = [16 +/- 1; 16 +/- 1]; [v° (p); v° (s)] = [25 +/- 3; 24 +/- 3];
<u>U = 10700 +/- 4500 years</u>
<u>Calculations</u>
$(1-\varepsilon^2/4) = 0.9877$; $[\sqrt{(1-\varepsilon^2)}]/(1-\varepsilon)^2 = 1.57$
$G=6.673 \times 10^{-11}$; $M_{(0)} = 1.98892 \times 19^{30}$kg; $R_{(0)} = 0.696 \times 10^{9}$m

<u>Calculations</u>
With $v^*(p) = \sqrt{[GM^2/(m + M) a (1-\varepsilon^2/4)]} = 95.6$ km/sec
And $v^*(s) = \sqrt{[Gm^2/(m + M) a (1-\varepsilon^2/4)]} = 95.735$ km/sec

And $v°$ (p) = 16 km/sec; $v°$ (s) = 16 km/sec
Then $v^*$ (p) + $v^*$ (s) + $v°$ (p) + $v°$ (s) = 223.335 km/sec

Apsidal motion is given by this formula:

**$W°$ (ob) = $(-720 \times 36526/T) \{[\sqrt{(1-\varepsilon^2)}]/(1-\varepsilon)^2]\} [(v° + v^*)/c]^2$ degrees/100 years**

$W°$ (ob) = $(-720 \times 36526/6.6314948)(1.57)[223.335/300{,}000]^2$ degrees/100 years
$W°$ (ob) = 3.45°/century = 0.0345°/year

U [years] = 360/[0.0345°/year]

**U = 10,432 years Nahhas**
**U (observed) = 10700+/-4500years**

References: Absolute dimensions and apsidal motion of eclipsing binary GG Orion
Dr Lacy; Dr Torres; Dr Claret; Dr Sabby: 2000

The time has come to send relativity theories and all four-dimensional space-time confusion of physics to the...

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