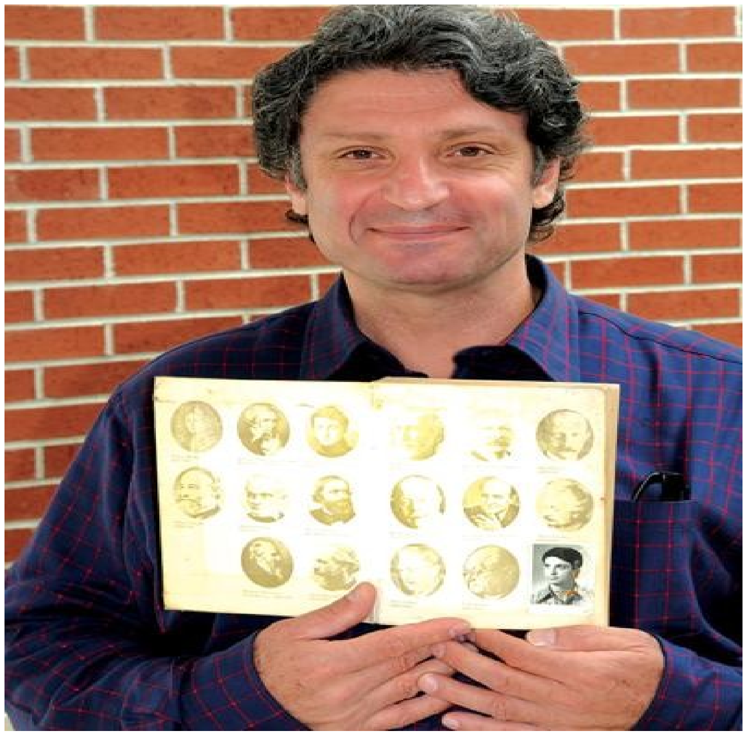


I am a real person in real space in real time in real fight with modern and Nobel

I am Joe Nahhas founder of real time astronomy July 21 1969 at age 11
I am the founder of real time mathematics July 17 1971 at age 13
I am the founder of real time physics July 4 1973 at age 15.

Modern and Nobel physicists and astronomers measure in present time (real time = measured time) and calculate in past time (event time = actual time) and puzzled by the difference between present time and past time (shift time = measured time - actual time). Shift time is the time difference between when an event happens and when an event is measured. Shift time in labs is a measurement error or visual effects that make up make - believe modern and Nobel physics and astronomy. I am not saying that modern physics and astronomy is all wrong and can be deleted but modern physics and astronomy were deleted and replaced with real time physics and astronomy on July 21 1969.

I am not only the greatest physicist of all time but the only physicist since the beginning of time because I know/knew what time it is and all others do/did not.

Humans since the beginning of time measure/measured in wrong time.

Introduction

In July 21, 1969 at age 11 and after graduating from 5th grade and on the same day a man landed a foot on the moon I watched Apollo 11 take off and disappear into the skies on its way to the moon and then saw Neil Armstrong land human's first step on the moon. I wondered how someone sees and measures distances in space and how someone sees and measures sizes of objects in space. Apollo 11 rocket looked like it is shrinking in size while moving up into the skies; not as if the rocket shrunk in size but as if the rocket visual changed in size indication a different location and not a different size. Apollo 11 looked similar to a moving car moving away and shrinking in size. I realized that objects location and size has to do with how we see things (eye as an instrument). I imagined two snap shot of Apollo 11 at different distances A and B. At snap shot distance A Apollo 11 looked like it has a size C, and at snaps shot distance B Apollo 11 looked like it has a shrunk size D as shown below:

C

D

Eye ----------------------------- A ----------------------------- B

I asked myself the question: how A, B, C, and D are related
1 = 1 is self evident; 2 = 2 is self evident
A = A is self evident

If A = A; add and subtract B; then A = B + (A - B)
Divide by B; then (A/B) = 1 + (A - B)/B

Multiply by C; then (A/B) C = C + [(A - B)/B] C   Equation - 1

Also D = D; add and subtract C; then D = C + (D - C)   Equation - 2

Comparing Equation - 1 and Equation - 2

(A/B) C = D; or, AC = BD
C = C
D - C = [(A - B)/B]

The answer is **AC = BD** = is how distances A and B related to sizes C and D
And D - C = [(A - B)/B] C = visual contraction of C when moved from A to B
AC = BD = actual distance x actual size = visual distance x visual size

The initial condition solution to AC = BD is A = B and C = D

The general solution to AC = BD = constant = actual distance x actual size

AC = BD = constant = actual distance x actual size

(Cosine ω t + í sine ω t) = $e^{i \omega t}$; (Cosine ω t - í sine ω t) = $e^{-i \omega t}$
(Cosine ω t + í sine ω t) (Cosine ω t - í sine ω t) = $e^{i \omega t} e^{-i \omega t} = 1$

AC = BD = k
Taking AC = k
Differentiating with respect to time
Then d A/ d t + d C/ d t = d k/ d t = 0
And d A/ d t = - d C/ d t = λ + í ω; method of separation of variables
A = $e^{(\lambda + i \omega t)} = e^{\lambda} e^{i \omega t} = C e^{i \omega t}$
C = $e^{-(\lambda + i \omega t)} = e^{-\lambda} e^{-i \omega t} = D e^{-i \omega t}$

A = $B e^{i \omega t}$
C = $D e^{-i \omega t}$
AC = $B e^{i \omega t} D e^{-i \omega t} = B D e^{i \omega t} e^{-i \omega t}$ = BD x 1 = **BD**

A real number C has a visual complex number D = C $e^{i \omega t}$

D along the line of sight = D_x = C cosine ω t = C - 2 C sine^2 (ω t/2)

D_x - C = - 2 C sine^2 (ω t/2)
D_x = C √ (1 - sine^2 ω t); with ω t = $\tan^{-1}$ (v/c) = aberration angle
D_x = C √ [1 - sine^2 $\tan^{-1}$ (v/c)]; (v/c) << 1

D_x = C √ [1 - $(v/c)^2$]

D_x = C cosine ω t
D_x / C = cosine ω t
And ω t= cosine^{-1} (D_x / C) = 1 - 2 sine^2 cosine^{-1} (D_x / C)
D_x / C = cosine ω t = 1 - 2 sine^2 cosine^{-1} (D_x / 2 C)
[(D_x / C) -1] = - 2 sine^2 cosine (D_x / 2 C)

D - C = [(A - B)/B] C
D - C = - 2 C sine^2 [cosine^{-1} (A / 2 B)]

In practice: physicists and astronomers measure orbits of planets around the Sun not from the Sun (distance A) but from Earth (distance B)

A = $B e^{i \omega t}$
C = $D e^{-i \omega t}$
D - C = [(A - B)/B] C
D - C = **- 2 C sine ^{2} [cosine^{-1} (A / 2 B)**]
D - C = Einstein's numbers without Einstein = Illusions

Astronomers measure planet Mercury orbit around the Sun (distance A) not from the Sun but from Earth (distance B) and that means the orbit has visually shrunk and not actually shrunk by the quantity **[(A - B)/B] C**

A = Sun - Mercury distance = 5.82×10^9 meters;
B = Sun Earth distance = 149.6×10^9 meters
Sun - Mercury Period in seconds = 88 days x 24 hours x 60 minutes x 60 seconds

Planet Mercury angular velocity around the Sun
Is $\theta_0' = 2 \times \pi/88 \times 24 \times 60 \times 60$ radians per period
Planet Mercury angular velocity around the Sun in arc second per century $\delta\theta_0'$
$= (2 \times \pi /88 \times 24 \times 60 \times 60) (180/ \pi) (36526/88) (3600)$
= 70.75 arc sec per century.
If C = $\delta\theta_0'$ = 70.75 arc sec per century measured from the Sun, then how much it is diminished if measured from Earth?
A = 5.82×10^9; B = 149.6×10^9; C = 70.75
And the answer is **[(A - B)/B] C** = $[(5.82 \times 10^9 - 149.6 \times 10^9)/ 149.6 \times 10^9] 70.75$
= 43 arc sec per/100 years same numbers as Einstein's numbers
Defining distance $r = r_x + í r_y = r_0 e^{í \omega t}$
And $r = r_0$ [cosine ω t + sine í ω t] and $r_x = r_0$ [cosine ω t
And $r_x - r_0 = r_0$ [cosine ω t - 1] = - 2 r_0 sine^2 ω t/2; ω t = cosine^{-1} (r_x/r_0)
And $[(r_x - r_0)/r_0]$ = - 2 sine^2 {[cosine^{-1} (r_x/r_0)]/2}
And $[(r_x - r_0)/r_0]$ $\delta\theta_0'$= - 2 sine^2 {[cosine^{-1} (58.2/149.6)]/2} 70.75 = 43

1 - A real object (**classical)** of size C has a visual (**quantum**) of size D = $C e^{í \omega t}$
2 - D - C = visual illusions = (Einstein's **relativity** theory)

The fight is about this

Everything modern and Nobel said in physics and astronomy is all wrong!
Modern and Nobel deletion is in progress and this book is 1st replacement

Chapter One: light signal processing

1.1 - **Light signal wave length shift**
Naming: r = Visual distance
And r_0 = actual distance
Then, $r_0 = r_0$; add and subtract visual distance r
And, $r_0 = r + (r_0 - r)$; divide by r
Then $(r_0/ r) = 1 + [(r_0 - r)/ r]$ multiply by $\delta\theta_0'$
And $(r_0 / r) \delta\theta_0' = \delta\theta_0' + [(r_0 - r)/ r] \delta\theta_0'$
Modern and Nobel error # 1 is: $[(r_0 - r)/ r] \delta\theta_0' = 70.75 [(r_0 - r)/ r]$
$= 70.75 [(58,200,000,000 - 149,600,000)/ 149,600,000] = 43$ arc sec/ 100y

1.2 - **Light signal period shift**:
$T_0 = r_0/c = 58,200,000,000/300,000$ (light velocity km/sec) = 194 seconds
$T = r/c = 149,600,000/300,000 = 498.67$ seconds
Naming: T = visual time
And T_0 = actual time
Then, $T_0 = T_0$; add and subtract real time T
$T_0 = T + (T_0 - T)$; divide by T
$(T_0/ T) = 1 + [(T_0 - T)/ T]$; multiply by $\delta\theta'_0$
$(T_0 / T) \theta'_0 = \theta'_0 + [(T_0 - T)/ T] \theta'_0$
$(T_0 / T) \delta\theta'_0 = \delta\theta'_0 + [(T_0 - T)/ T] \delta\theta'_0$
Modern and Nobel error # 2 is: $[(T_0 - T)/ T] \delta\theta'_0 = 70.75 [(T_0 - T)/ T]$
$= 70.75 [(194 - 498.67)/ 498.67] = 43$ arc second per century

1.3 - Light signal argument shift; $\tan \theta_0 = v_0/c$; $\tan \theta = v/c$
Naming: v = visual velocity
And v_0 = actual velocity
Then, $v_0 = v_0$; add and subtract v
And, $v_0 = v + (v_0 - v)$; divide by v
Then $(v_0/ v) = 1 + [(v_0 - v)/ v]$ multiply by $\delta\theta'_0$
And $(v_0 / v) \delta\theta'_0 = \delta\theta'_0 + [(v_0 - v)/ v] \delta\theta'_0$
Modern and Nobel error # 3 is: Is: $70.75 [(v_0/c) - (v/c)]/ (v/c)$
$= (\tan \theta_0 - \tan \theta)/ \tan \theta = [(v_0 - v)/ v] \delta\theta'_0 = 70.75 [(v_0 - v)/ v]$
$= 70.75 [(48.1 - 29.8)/ 29.8] = 43$ arc sec/100y

1.4 - Light signal surface acceleration frequency shift; $f_0 = \gamma_0/c$; $f = \gamma /c$
Naming: $\gamma = g$ = Earth gravitational acceleration = 9.8
And $\gamma_0 = g_0$ = Mercury gravitational acceleration = 3.8
Then: $g_0 = g_0$
And $g_0 = g + (g_0 - g)$

And $(g_0 / g) = 1 + [(g_0 - g)/ g]$ multiply by $\delta\theta'_0$

And $(g_0 / g)\ \delta\theta'_0 = \delta\theta'_0 + [(g_0 - g)/ g]\ \delta\theta'_0$

And $[(g_0 /c)/ (g/c)\ \delta\theta'_0 = \delta\theta'_0 + \{(g_0/c) - (g/c)]/ (g/c)\}\ \delta\theta'_0$

And $[(f_0 - f)]/ f]\ \delta\theta'_0$

Modern and Nobel error # 4 is: $[(f_0 - f)]/ f]\ \delta\theta'_0$

$[(g_0 - g)/ g]\ \delta\theta'_0 = 70.75\ [(3.8 - 9.8)/ 9.8] = 43$ arc sec/100y

1.5 Light signal momentum P shift

With $\lambda\ p = h$; differentiating $d\ \lambda/\lambda = - d\ p/p = [(r_0 - r)/ r]$

Alfred Nobel Prize winner's and Einstein's error # 5 is: $[(f_0 - f)]/ f]\ \delta\theta'_0$
$= (70.75) \times 0.61 = 43$ arc sec/100y

1.6 Light signal Energy E shift

$E_0 = h\ f_0$; $E = h\ f$

$[(E_0 - E)/E]\ \delta\theta'_0 = [(f_0 - f)/f]\ \delta\theta'_0$

Modern and Nobel error # 6 is: $[(E_0 - E)/E]\ \delta\theta'_0$

$= [(f_0 - f)/f]\ \delta\theta'_0 = 70.75\ (0.61) = 43$ arc sec/100y

Planet	Distance/km	Signal period	Orbital period	Spin velocity	Mass	Eccentricity
Mercury	58,200,000	194 sec	88days	.003km/sec	0.33×10^{24}	0.206
Earth	149,600,000	498.67 sec	375.26	0.4651km/sec	$5.97X\ 10^{24}$	0.00167
Sun radius		$0.696x10^{6}$ km	Sun mass		$2X\ 10^{30}$	

Chapter two: Orbit processing

2.1 - Distance shift

r = Visual distance; r_0 = actual distance
Then, $r_0 = r_0$; add and subtract visual distance r
And, $r_0 = r + (r_0 - r)$; divide by r
Then $(r_0/ r) = 1 + [(r_0 - r)/ r]$ multiply by $\delta\theta_0'$
And $(r_0 / r)\, \delta\theta_0' = \delta\theta_0' + [(r_0 - r)/ r]\, \delta\theta_0'$
Modern and Nobel error # 7 is: $[(r_0 - r)/ r]\, \delta\theta_0' = 70.75\, [(r_0 - r)/ r]$
= 70.75 [(58,200,000,000 - 149,600,000)/ 149,600,000] = 43 arc sec/ 100y

2.2 - Velocity shift

Light signal argument shift; $\tan \theta_0 = v_0/c$; $\tan \theta = v/c$
Naming: v = visual velocity; v_0 = actual velocity
Then, $v_0 = v_0$; add and subtract v
And, $v_0 = v + (v_0 - v)$; divide by v
Then $(v_0/ v) = 1 + [(v_0 - v)/ v]$ multiply by $\delta\theta'_0$
And $(v_0 / v)\, \delta\theta'_0 = \delta\theta'_0 + [(v_0 - v)/ v]\, \delta\theta'_0$
Modern and Nobel error # 8 is: $[(v_0 - v)/ v]\, \delta\theta'_0 = 70.75\, [(v_0 - v)/ v]$
= 70.75 [(48.1 - 29.8)/ 29.8] = 43 arc sec/100y

2.3 - Acceleration shift

Naming: $\gamma = g$ = Earth gravitational acceleration = 9.8
And $\gamma_0 = g_0$ = Mercury gravitational acceleration = 3.8
Then: $g_0 = g_0$
And $g_0 = g + (g_0 - g)$
And $(g_0 / g) = 1 + [(g_0 - g)/ g]$ multiply by $\delta\theta'_0$
And $(g_0 / g)\, \delta\theta'_0 = \delta\theta'_0 + [(g_0 - g)/ g]\, \delta\theta'_0$
Modern and Nobel error # 9 is: $[(g_0 - g)/ g]\, \delta\theta'_0$
= 70.75 [(3.8 - 9.8)/ 9.8] = 43 arc sec/100y

2.4 - Linear distance shift

Naming: d = Real time linear distance
And d_0 = event time linear distance
Then, $d_0 = d_0$; add and subtract real time distance d
And, $d_0 = d + (d_0 - d)$; divide by d
Then $(d_0/ d) = 1 + [(d_0 - d)/ d]$; multiply by $\delta\theta'_0$
And $(d_0 / d)\, \delta\theta'_0 = \delta\theta'_0 + [(d_0 - d)/ d]\, \delta\theta'_0$
Modern and Nobel error # 10 is: $[(d_0 - d)/ d]\, \delta\theta'_0 = 70.75\, [(d_0 - d)/ d]$
With $d_0 = v_0 \tau_0$ = 47.9 x 88, and $d = v \tau$ = 29.8 x 365.26
$= 70.75\, [(v_0\, \tau_0 - v\, \tau\, /)/ v\, \tau]$
= 70.75 [(47.9 x 88 - 29.8 x 365.26)/ 29.8 x 365.26] = 43 arc sec/100y

Chapter 3: light aberrations processing

3.1 - Light signal period Aberration:

Modern and Nobel error # 11is: = $\{[\text{Tan}^{-1} (T_0/ \tau_0)/\tan^{-1} (T/ \tau)] -1\} \delta\theta'_0$

= 70.75 $\{[\text{Tan}^{-1} (194/ 88 \times 24 \times 3600)/\tan^{-1} (498.67/ 88 \times 24 \times 3600)] -1\}$

= 70.75 x 0.61 = 43 arc sec/100 y

3.2 - Light signal distance Aberration:

Modern and Nobel error # 12 is: = $\{[\tan^{-1} (r_0/ c\, \tau_0)/\tan^{-1} (r/ c\, \tau)] -1\} \delta\theta'_0$

= 70.75 $\{[\text{Tan}^{-1} (58{,}200{,}000/ 300{,}000\times 88 \times 24 \times 3600)/\tan^{-1} (149{,}600{,}000/ 88 \times 24 \times 3600)] -1\}$ = = 70.75 x 0.61 = 43 arc sec/100 y

3.3 - Light signal velocity Aberration:

Modern and Nobel error # 13 is: = $\{[\tan^{-1} (v_0/ c)/\tan^{-1} (v/ c)] -1\} \delta\theta'_0$

= 70.75 $\{[\text{Tan}^{-1} (48.1/ 300{,}000)/\tan^{-1} (29.8/300{,}000)] -1\}$

= 70.75 x 0.61 = 43 arc sec/100 y

3.4 - Light signal frequency Aberration:

Modern and Nobel error # 14 is: = $[(\tan^{-1} f_0/\tan^{-1} f) -1] \delta\theta'_0$

= $\{[\tan^{-1} (\gamma_0/ c)/\tan^{-1} (\gamma_0/ c)] -1\} \delta\theta'_0$

= 70.75 $\{[\text{Tan}^{-1} (3.8/3\times 10^8)/\tan^{-1} (9.8/3\times 10^8)] -1\}$

= 70.75 x 0.61 = 43 arc sec/100 y

3.5 Image processing

Orbit and planet sizes are governed by

AC = BD = constant

(A/B) -1 = (D/C) - 1

Radius of Earth is 6731 km and radius of Mercury is 2440 km

The fact we measure from Earth then velocity of earth is 29.8 km/sec

The fact that we measure Earth orbit and confused with Mercury orbit the velocity is 29.8 - 0.465 = 29.335 km/sec

The mistake astronomers are doing is taking Mercury's orbit as Earth orbit but with less orbital speed of 0.465 when they use Sun as reference point and measure from Earth. They are looking at Earth orbit and not mercury's orbit

Modern and Nobel error # 15 is: $[(D /C)(29.8/29.335) - 1] \delta\theta'_0$

$[(D \times 29.8/C \times 29.335) - 1] \delta\theta'_0$

= $[(2440 \times 29.8/6371\times 29.335) - 1] \delta\theta'_0$ = 0.61 x 70.75 = 43 arc sec/ century

Chapter four: **Mistakes of Kepler, Newton**

4.1 - Kepler's Period historical mistake

Kepler's law: $a^3/T^2 = k = \text{constant}$
Or, $a_1^3/ T_1^2 = a_2^3/ T_2^2 = k$
Or, $a_1/ a_2 = (T_1/ T_2)^{2/3}$
And $(a_1 - a_2)/ a_2 = (\tau_0/ \tau)^{2/3} - 1$
Or $(a_0 - a)/ a = (\tau_0/ \tau)^{2/3} - 1$
And $[(a_m - a_e)/ a_e]\ \delta\theta'_0$
$= [(a_0 - a)/ a]\,(v_0/r_0)\ \delta\theta'_0$
$= [(a_0 - a)/ a]\ \delta\theta'_0$
Modern and Nobel error # 16 is: $[(\tau_0/ \tau)^{2/3} - 1]\ \delta\theta'_0$
$= 70.75\ [(88/365.26)^{2/3} -1] = 43$ arc sec/100y

4.2 - Newton's distance historical mistake

Newton force is $F = k/r^2 = G\ m\ M/r^2 = m\ v^2/r$
And velocity of a celestial object measured from the sun is $= (GM/r)^{1/2}$
With $r^3{}_0 = (GM/v^2{}_0)$; $r_0 = (GM/v^2{}_0)$
And $r^3 = (GM/v^2)$; $r = (GM/v^2)$
Modern and Nobel error # 17 $[(r_0 - r)/r]\ \delta\theta'_0 = \{[(GM/v^2{}_0)/ (GM/v^2)] - 1\}\ \delta\theta'_0$
$= [(v/v_0)^2 - 1]\ \delta\theta'_0 = [(29.8/47.9)^2 - 1] \times 70.75 = 43$ arc sec/100y

4.3 - Newton's velocity historical mistake

Newton force is $F = k/r^2 = G\ m\ M/r^2 = m\ v^2/r$
And $v_0 = (GM/r_0)^{1/2}$; $v = (GM/r)^{1/2}$
Modern and Nobel error # 18 $[(v_0 - v)/v]\ \delta\theta'_0 = [(GM/r_0)^{1/2}/ (GM/r)^{1/2} -1]\ \delta\theta'_0$
$= [(r/r_0)^{1/2} - 1]\ \delta\theta'_0 = [(149.6/58.2)^{1/2} - 1] \times 70.75 = 43$ arc sec/100y

4.4 - Newton's surface gravity historical mistake

Newton force is $F = k/r^2 = G\ m\ M/R^2 = m\ g$
And $g_0 = Gm_0/R^2{}_0$; $g = Gm/R^2$
Modern and Nobel error # 19 $= [(g_0 - g)/ g]\ \delta\theta'_0$
$= \{[(Gm_0/R_0^2) - (Gm/R^2)]/ (Gm/R^2)\}\ \delta\theta'_0 = \{[(m_0/ R_0^2) - (m/R^2)]/ (m/R^2)\}\ \delta\theta'_0$
$= [(g_0 - g)/ g]\ \delta\theta'_0 = [(3.8/9.8) -1]\ 70.75 = 43$ arc sec/100 years
Note: $[(m_0/ R_0^2)/ (m/R^2)$ $\mathbf{(29.8/29.335)^2}$ $-1]\ \delta\theta'_0 = 43$ arc sec/100y

4.5 - Newton's signal time historical mistake

Newton force is $F = k/r^2 = G\ m\ M/r^2 = m\ v^2/r$; $v_0 = (GM/r_0)^{1/2}$; $v = (GM/r)^{1/2}$
Modern and Nobel error # 20 $[(r/r_0)^{1/2} - 1]\ \delta\theta'_0 = \{[(r/c)/(r_0/c)^{1/2}] - 1]\}\ \delta\theta'_0$
$= [(T/T_0)^{1/2} - 1]\ \delta\theta'_0 = 70.75\ [(498/194)^{1/2} - 1] = 43$ arc sec/100y

Chapter five: **mistakes of Le Verrier**

5.1- Le Verrier velocity historical mistake

The angular velocity of Mercury around the Sun is: $\theta_0' = v_0 / r_0$
If it is measured for planet Mercury from the sun, then $\theta_0' = v_0 / r_0$
If planet Mercury around the sun measured from earth
Then θ_m' (Earth) $= (v_0 + v)/r_0$
And θ_m' (Earth) $= v_0 / r_0 + v / r_0$; not v_0 / r_0
Le Verrier mistake is: v / r_0
The angular speed shift: v / r_0; taking into account Earth rotation v^o
Le Verrier mistake: $= [(v +/- v^o) / r_0]$
In arc second per century multiplying by $(180/\pi)(3600)(100\ \tau / \tau_0)$
$= [(v +/- v^o) / r_0] [(180/\pi)(3600)(100\ \tau / \tau_0)]$
$= [(v +/- v^o) / v_0) (v_0 / r_0)] (180/\pi)(3600)(100\ \tau / \tau_0)$
Modern and Nobel error # 21 is: $[(v +/- v^o) / v_0)]\ \delta\theta'_0$
$[(29.8 - 0.465) / 47.9)]\ 70.75 = 43$ arc sec/100y

5.2- Le Verrier distance mistake

And $v = [G M^2 / (m + M) r]^{1/2} = (G M / r)^{1/2}$; $m << M$; Solar system
And $v_0 = [G M^2 / (m_0 + M) r]^{1/2} = (G M / r_0)^{1/2}$; $m_0 << M$; Solar system
And $v = (G M / r)^{½}$; $v_0 = (G M / r_0)^{1/2}$
And $(v / v_0) = (G M / r)^{½} / (G M / r_0)^{½} = (r_0 / r)^{1/2}$
With $[(v - v^o) / v_0)]\ \delta\theta'_0 = (r_0 / r)^{1/2} [1 - (v^o/v)]\ \delta\theta'_0$
Modern and Nobel error # 22 is: $(r_0/r)^{1/2} [1 - (v^o/v)]\ \delta\theta'_0$
$= (58.2/149.6)^{1/2} \times 0.98 \times 70.75 = 0.61 \times 70.75 = 43$ arc sec/100y

5.3 - Le Verrier signal time mistake

With $(r/r_0)^{1/2} [1 - (v^o/v)]\ \delta\theta'_0 = [(r_0/c) / (r/c)]^{1/2} [(1 - (v^o/v)]\ \delta\theta'_0$
Modern and Nobel error # 23 is: $(T_0 / T)^{1/2} [(1 - (v^o/v)]\ \delta\theta'_0$
$= (194 / 498.67)^{1/2} \times 0.98 \times 70.75 = 43$ arc sec/100y

5.4 - Le Verrier orbital period mistake

Kepler's law: $a^3/T^2 = k =$ constant
Or, $r_0^3 / \tau_0^2 = r^3 / \tau^2 = k$; $r_0 / r = (\tau_0 / \tau)^{2/3}$
With $(r_0 / r)^{1/2} [(1 - (v^o/v)]\ \delta\theta'_0$
Modern and Nobel error # 24 is: $(\tau_0 / \tau)^{1/3} [(1 - (v^o/v)]\ \delta\theta'_0$
$= (88/365.26)^{1/3} \times 0.98 \times 70.75 = 43$ arc sec/100y

5.5 - Le Verrier gravity mistake

And $\gamma_0 = g_0 = Gm_0/r^2_0$; $\gamma = g = Gm/r^2$
And $(\gamma / \gamma_0) = (g/g_0) = (Gm/r^2) / (Gm_0/r^2_0) = (m\ r^2_0 / m_0\ r^2)$
And $(r_0/r) = (m_0 g/g_0 m)^{½}$; $(r_0/r)^{1/2} = (m_0 g/g_0 m)^{1/4}$
With $(r/r_0)^{1/2} [1 - (v^o/v)]\ \delta\theta'_0$
Modern and Nobel error # 25 is: $(m_0 g/g_0 m)^{1/4} [1 - (v^o/v)]\ \delta\theta'_0$
$= (0.33 \times 9.8/3.8 \times 5.97)^{1/4}\ 0.98 \times 70.75 = 43$ arc sec/100y

Chapter six: Real time Vision

6.1 Distance: AC = BD = k
Differentiation with respect to time of BD = k
Gives D (dB/d t) + B (d D/d t) = 0
And D (dB/d t) = - B (d D/d t)
And [(dB/d t)/B] = - [(d D/d t)/D] = - í ω
B = A $e^{- í \omega t}$
D = C $e^{í \omega t}$
Or, $r = r_0 e^{í \omega t}$; $r_0 = r e^{- í \omega t}$
And $r_0 = r_x + í r_y = r$ (cosine ω t + í sine ω t); ω t = $\text{cosine}^{-1} (r_x/r)$
And $r_x = r$ cosine ω t = r [1 - 2 sine^2 (ω t/2)]
And $(r_x - r)/r = - 2\ \text{sine}^2$ (ω t/2)
And $(r_x - r)/r = - 2\ \text{sine}^2 \{[\text{cosine}^{-1} (r_x/ r)]/2\}$
$= [(r_x - r)/r]\ \delta\theta'_0 = - 2\ \text{sine}^2 \{[\text{cosine}^{-1} (r_x/ r)]/2\}\ \delta\theta'_0$
Modern and Nobel error # 26 is: $- 2\ \text{sine}^2 \{[\text{cosine}^{-1} (r_x/ r)]/2\}\ \delta\theta'_0$
$= - 2\ \text{sine}^2 \{[\text{cosine}^{-1} (58.2/ 149.6)]/2\} \times 70.75 = 43$

6.2 Time $r = r_0 e^{í \omega t}$ and r = c T and $r_0 = c T_0$
Then $T = T_0 e^{í \omega t}$; $T_0 = T$
And $T = T_x + í T_y = T_0$ (cosine ω t + í sine ω t); ω t = $\text{cosine}^{-1} (T/ T_0)$
And $T_x = T_0$ cosine ω t = T_0 [1 - 2 sine^2 (ω t/2)]
And $(T_x - T_0)/T_0 = - 2\ \text{sine}^2$ (ω t/2)
And $(T_x - T_0)/T_0 = - 2\ \text{sine}^2 \{[\text{cosine}^{-1} (T/ T_0)]/2\}$
$= [(T_x - T_0)/T_0]\ [(v_0 /r_0)]\ [(180/\pi)\ (3600)\ (100\ \tau/ \tau_0)]$
Modern and Nobel error # 27 is: $- 2\ \text{sine}^2 \{[\text{cosine}^{-1} (T_x/ T_0)]/2\}\ \delta\theta'_0$
$= - 2\ \text{sine}^2 \{[\text{cosine}^{-1} (194/ 498.67)]/2\} \times 70.75 = 43$

6.3 Velocity $v = 2 \pi r / \tau$; and $v_0 = 2 \pi r_0/ \tau_0$
Then $r = (v \tau /2 \pi)$ and $r_0 = (v_0 \tau_0/2 \pi)$
And $(r /r_0) = (v \tau /2 \pi)/ (v_0 \tau_0/2 \pi) = (v \tau)/ (v_0 \tau_0)$
$= [(r - r_0)/r_0]\ [(v_0 /r_0)]\ [(180/\pi)\ (3600)\ (100\ \tau/ \tau_0)]$
$= - 2\ \text{sine}^2 \{[\text{cosine}^{-1} (r/ r_0)]/2\}\ [(v_0 /r_0)]\ [(180/\pi)\ (3600)\ (100\ \tau/ \tau_0)]$

Modern and Nobel error # 28 is $- 2\ \text{sine}^2 \{[\text{cosine}^{-1} (v \tau)/ (v_0 \tau_0)]/2\}\ \delta\theta'_0$
$= - 2\ \text{sine}^2 \{[\text{cosine}^{-1} (48.1 \times 88/ (29.8 - 0.465) \times 365.26]/2\} \times 70.75 = 43$

6.4 Areal velocity $r\ v = h = r_0\ v_0$
The $r/r_0 = v_0/v$; taking Earth spin into account
Then $r/r_0 = (v_0 - v^0)/v$
Modern and Nobel error # 29 is: $- 2\ sine^2 \{[cosine^{-1} (v_0 - v^0)/v]/2\}\ \delta\theta'_0$
$=- 2\ sine^2 \{[cosine^{-1} (29.8 - 0.451)/48.14]/2\}\ \delta\theta'_0$

6.5 Acceleration $g = GM/r^2$; $g_0 = GM/r_0$

The $r/r_0 = (g_0/g)^{1/2}$; taking Earth spin into account
Then $r/r_0 = (g_0/g)^{½} (1 - v^0/ v)$
Modern and Nobel error # 30 : $- 2\ sine^2 \{[cosine^{-1} (g_0/g)^{½} (1 - v^0/ v)/2\}\ \delta\theta'_0$
$=- 2\ sine^2 \{cosine^{-1} \{(3.8/9.8)[1 - (0.451/29.8]\}/2\}\ 70.75 = 43$ arc sec/100y

6.6 Argument $r/r_0 = (v_0/c)/ (v/c)$ **same as Le Verrier**
The $r/r_0 = (v_0/c)/ (v/c)$; taking Earth spin into account
Then $r/r_0 = [(v_0 - v^0)/c]/ (v/c)$
Modern and Nobel error # 31: $- 2\ sine^2 \{[cosine^{-1} \{[(v_0 - v^0)/c]/ (v/c)\}/2\}\ \delta\theta'_0$
$=- 2\ sine^2 \{[cosine^{-1} \{\{[(29.8 - 0.451)]/ 3x10^8\}/ (48.14/3x10^8)]\}/2\}\ 70.75$
$= 43$ arc sec/100y

6.7 Frequency $[(g_0/c)/ (g/c)]^{½} (1 - v^0/ v)$
The $r/r_0 = v_0/v$; taking Earth spin into account
Then $r/r_0 = (v_0 - v^0)/v$
Modern and Nobel error # 32: $- 2\ sine^2 \{\{cosine^{-1} [(g_0/c)/ (g/c)]^{½} (1 - v^0/ v)\}/2\}\ \delta\theta'_0$
$=- 2\ sine^2 \{\{cosine^{-1} \{[(3.8/3x10^8)/ (9.8/3x10^8)]^{1/2} x0.98\}/2\}\}\ 70.75$
$= 43$ arc sec/100y

6.8 - Kepler's Period historical mistake II
Kepler's law: $a^3/T^2 = k =$ constant
Or, $a_1^3/ T_1^2 = a_2^3/ T_2^2 = k$
Or, $a_1/ a_2 = (T_1/ T_2)^{2/3}$
And $(a_1 - a_2)/ a_2 = (\tau_0/ \tau)^{2/3} - 1$
Or $(a_0 - a)/ a = (\tau_0/ \tau)^{2/3} - 1$
And $[(a_m - a_e)/ a_e]\ \delta\ \theta'_0$
$= [(a_0 - a)/ a] (v_0 /r_0)\ \delta\theta'_0$
= $[(a_0 - a)/ a]\ \delta\theta'_0$
Modern and Nobel error # 16 is: $[(\tau_0/ \tau)^{2/3} - 1]\ \delta\theta'_0$
$= 70.75 [(88/365.26)^{2/3} -1] = 43$ arc sec/100y
Modern and Nobel error # 33 is: $- 2\ sine^2 \{[cosine^{-1} (\tau_0/ \tau)^{2/3}]/2\}\ \delta\theta'_0$
= $- 2\ sine^2 \{[cosine^{-1} (88/365.26)^{2/3}]/2\}\ 70.75 = 43$ arc sec/100y

6.9 - Newton's distance historical mistake II
Newton force is $F = k/r^2 = G\ m\ M/r^2 = m\ v^2/r$
And velocity of a celestial object measured from the sun is = $(GM/r)^{1/2}$
With $r^3{}_0 = (GM/v^2{}_0)$; $r_0 = (GM/v^2{}_0)$
And $r^3 = (GM/v^2)$; $r = (GM/v^2)$
Modern and Nobel error # 17 = $[(r_0 - r)/r]\ \delta\theta'_0 = \{[(GM/v^2{}_0)/\ (GM/v^2)] - 1\}\ \delta\theta'_0$
$= [(v/v_0)^2 - 1]\ \delta\theta'_0 = [(29.8/47.9)^2 - 1] \times 70.75 = 43$ arc sec/100y

Modern and Nobel error # 34: = $- 2\ \text{sine}^2\ \{[\text{cosine}^{-1} (v/v_0)^2]/2\}\ \delta\theta'_0$
= $- 2\ \text{sine}^2\ \{[\text{cosine}^{-1} (v/v_0)^2]/2\}\ \delta\theta'_0$

6.10 - Newton's velocity historical mistake II
Newton force is $F = k/r^2 = G\ m\ M/r^2 = m\ v^2/r$
And $v_0 = (GM/r_0)^{1/2}$; $v = (GM/r)^{1/2}$
Modern and Nobel error # 18 = $[(v_0 - v)/v]\ \delta\theta'_0 = [(GM/r_0)^{1/2}/\ (GM/r)^{1/2} -1]\ \delta\theta'_0$
$= [(r/r_0)^{1/2} - 1]\ \delta\theta'_0 = [(149.6/58.2)^{1/2} - 1] \times 70.75 = 43$ arc sec/100y

Modern and Nobel error # 35: = $- 2\ \text{sine}^2\ \{[\text{cosine}^{-1} (r/r_0)^{1/2}]/2\}\ \delta\theta'_0$
= $- 2\ \text{sine}^2\ \{[\text{cosine}^{-1} (149.6/58.2)^{1/2}]/2\}\ 70.75 = 43$ arc sec/100y

6.11 - Newton's surface gravity historical mistake II
Newton force is $F = k/r^2 = G\ m\ M/R^2 = m\ g$
And $g_0 = Gm_0/R^2{}_0$; $g = Gm/R^2$
Modern and Nobel error # 19 = $[(g_0 - g)/\ g]\ \delta\theta'_0$
$= \{[(Gm_0/R_0{}^2) - (Gm/R^2)]/\ (Gm/R^2)\}\ \delta\theta'_0 = \{[(m_0/\ R_0{}^2) - (m/R^2)]/\ (m/R^2)\}\ \delta\theta'_0$
$= [(g_0 - g)/\ g]\ \delta\theta'_0 = [(3.8/9.8) -1]\ 70.75 = 43$ arc sec/100 years
Note: $[(m_0/\ R_0{}^2)/\ (m/R^2)$ $\mathbf{(29.8/29.335)^2}$ $-1]\ \delta\theta'_0 = 43$ arc sec/100y

Modern and Nobel error # 36:
= $- 2\ \text{sine}^2\ \{\{\text{cosine}^{-1} [(m_0/\ R_0{}^2)/\ (m/R^2)]\}/2\}\ \delta\theta'_0$
= $- 2\ \text{sine}^2\ \{\{\text{cosine}^{-1} [(0.33/\ 2440^2)/\ (5.97/6371^2)]\}/2\}\ 70.75 = 43$ arc sec/100y

6.12 - Le Verrier mistake II
Modern and Nobel error # 21 is: $[(v +/- v^{o})\ /v_0)]\ \delta\theta'_0 = (v\ /v_0)\ [1- (v^{o}/v)]\ \delta\theta'_0$
Modern and Nobel error # 37: $- 2\ \text{sine}^2\ \{\{\text{cosine}^{-1} (v\ /v_0)\ [1- (v^{o}/v)]\}/2\}\ \delta\theta'_0$
$= - 2\ \text{sine}^2\ \{\{\text{cosine}^{-1} (29.8\ /48.14)\ [1- (0.4651/29.8)]\}/2\}\ 70.75$
$= 43$ arc sec/100y

6.12 - Le Verrier distance mistake II

And $v = [G M^2 / (m + M) r]^{1/2} = (G M / r)^{1/2}$; m <<M; Solar system

And $v_0 = [G M^2 / (m_0 + M) r]^{1/2} = (G M / r_0)^{1/2}$; m_0 <<M; Solar system

And $v = (G M / r)^{½}$; $v_0 = (G M / r_0)^{1/2}$

And $(v/ v_0) = (G M / r)^{½} / (G M / r_0)^{½} = (r_0 / r)^{1/2}$

With $[(v - v^o) /v_0)]\, \delta\theta'_0 = (r_0 / r)^{1/2} [1- (v^o/v)]\, \delta\theta'_0$

Modern and Nobel error # 22 is: $(r_0/r)^{1/2} [1- (v^o/v)]\, \delta\theta'_0$

= $(58.2/149.6)^{1/2} \times 0.98 \times 70.75 = 0.61 \times 70.75 = 43$ arc sec/100y

= 43 arc sec/100y

Modern and Nobel error # 38:- $2\, sine^2 \{\{cosine^{-1} (r_0/r)^{1/2} [1- (v^o/v)]\}/2\}\, \delta\theta'_0$

= $- 2\, sine^2 \{\{cosine^{-1} (58.2/149.6)^{1/2} [1- (0.4651/29.8)]\}/2\}\ 70.75$

= 43 arc sec/100y

6.13 - Le Verrier signal time mistake II

With $(r/r_0)^{1/2} [1- (v^o/v)]\, \delta\theta'_0 = [(r_0/c) /(r /c)]^{1/2} [(1- (v^o/v)]\, \delta\theta'_0$

Modern and Nobel error # 23 is: $(T_0 /T)^{1/2} [(1- (v^o/v)]\, \delta\theta'_0$

$= (194 /498.67)^{1/2} \times 0.98 \times 70.75 = 43$ arc sec/100y

Modern and Nobel error # 39:- $2\, sine^2 \{\{cosine^{-1} (v /v_0) [1- (v^o/v)]\}/2\}\, \delta\theta'_0$

$= - 2\, sine^2 \{\{cosine^{-1} (194 /498.67)^{1/2} \times 0.98\}/2\} \times 70.75$

13.14 - Le Verrier orbital period mistake

Kepler's law: $a^3/T^2 = k$ = constant

Or, $r_0^3/ \tau_0^2 = r^3/ \tau^2 = k$; $r_0/ r = (\tau_0 / \tau)^{2/3}$

With $(r_0 /r)^{1/2} [(1- (v^o/v)]\, \delta\theta'_0$

Modern and Nobel error # 24 is: $(\tau_0 / \tau)^{1/3} [(1- (v^o/v)]\, \delta\theta'_0$

$= (88/365.26)^{1/3} \times 0.98 \times 70.75 = 43$ arc sec/100y

Modern and Nobel error # 40:

$= - 2\, sine^2 \{\{cosine^{-1} (\tau_0 / \tau)^{1/3} [(1- (v^o/v)\}\}/2\}\ 70.75$

$= - 2\, sine^2 \{\{cosine^{-1} (88 / 149.6)^{1/3} [(1- (0.4561/29.8)\}\}/2\}\ 70.75$

= 43 arc sec/100y

13.15 - Le Verrier gravity mistake

And $\gamma_0 = g_0 = Gm_0/r^2_0$; $\gamma = g = Gm/r^2$

And $(\gamma / \gamma_0) = (g/g_0) = (Gm/r^2)/ (Gm_0/r^2_0) = (m\, r^2_0/ m_0\, r^2)$

And $(r_0/r) = (m_0g/g_0m)^{½}$; $(r_0/r)^{1/2} = (m_0g/g_0m)^{1/4}$

With $(r/r_0)^{1/2} [1- (v^o/v)]\, \delta\theta'_0$

Modern and Nobel error # 24 is: $(m_0g/g_0m)^{1/4} [1- (v^o/v)]\, \delta\theta'_0$

$= (0.33 \times 9.8/3.8 \times 5.97)^{1/4}\ 0.98 \times 70.75 = 43$ arc sec/100y

Modern and Nobel error # 41:

$=- 2\, sine^2 \{\{cosine^{-1} (m_0g/g_0m)^{1/4} [1- (v^o/v)]/2\}\, \delta\theta'_0$

$= - 2 \text{ sine}^2 \{\{\text{cosine}^{-1} (0.33 \times 9.8/ /3.8 \times 5.97)^{1/4} [(1- (0.4561/29.8)\}\}/2\} 70.75$
= 43 arc sec/100y

Chapter 7: Fourier Light motion visual analysis

$r = r_0 e^{i \omega t}$

Distance r in real time is $r = r_0 e^{i (\theta + \omega t)}$

With $r^2\theta' = h = r_0{}^2\theta'_0$; $\theta' = \theta'_0 e^{-2 i (\theta + \omega t)}$

At $\theta = 0$; Perihelion

$r = r_0 e^{i \omega t}$

Taking $r = c t$ and $r_0 = c t_0$

Then $(t/t_0) = e^{i \omega t}$

And the Fourier transform is:

$\Gamma = (1/2 \pi) \{_{-\infty}\int^{\infty} e^{i \omega t} d t\}$

And $\Gamma = (1/2 \pi) {}_0\int^{\tau_0} e^{i \omega t} d t$

$\Gamma = (1/2 \pi) [e^{i \omega \tau_0} -1]/ i \omega$

$= (1/2 \pi) [\text{cosine } \omega \tau_0 + i \text{ sine } \omega \tau_0 - 1]/ i \omega$

Along the line of sight

$\Gamma_x = (1/2 \pi) [\text{sine } \omega \tau_0]/ \omega$

$\Gamma_x [100 \tau / \tau_0] = (100 \tau /2 \pi) [\text{sine } \omega \tau_0 / \omega \tau_0]$ per 100τ

With $\omega \tau_0 = \text{arc tan } (v_0/c)$; $100 \tau = 1$ century = 36526 days

$\Gamma_x [100 \tau / \tau_0]$ per century

$= (100 \tau /360) \{\text{sine } [\text{arc tan } (v_0/c)] / [\text{arc tan } (v_0/c)]\}$

$\Gamma_x [100 \tau / \tau_0]$ per century

= (36526days /360degrees) $\{\text{sine } [\text{arc tan } (v_0/c)] / [\text{arc tan } (v_0/c)]\}$

In arc seconds per century:

$\Gamma_x [100 \tau / \tau_0]$ per century

$= (36526 \times 24 \times 3600 /360 \times 3600) \{\text{sine } [\text{arc tan } (v_0/c)] / [\text{arc tan } (v_0/c)]\}$

$\Gamma_x [100 \tau / \tau_0]$ per century

$= (36526 \times 24 \times 3600/360 \times 3600) \{\text{sine } [\text{arc tan } (v_0/c)] / [\text{arc tan } (v_0/c)]\}$

Where $v_0 = 47.9$ km/second; $c = 300{,}000$ km/second

Modern and Nobel error # 42:

$\Gamma_x [100 \tau / \tau_0] = (36526 /15) \{\text{sine } [\text{arc tan } (47.9/300{,}000)] / [\text{arc tan } (47.9/300{,}000)]\}$

= 42.5 arc seconds per century

Modern and Nobel error # 43:

$\Gamma_x [100\,\tau/\,\tau_0]$ = (36526 /15) {sine [arc tan (29.8/300,000)] / [arc tan (29.8/300,000)]}
= 42.5 arc seconds per century

Angular velocity θ' in real time is $\theta' = \theta'_0\, e^{-2i(\theta + \omega t)}$
Taking $\theta' = 2\pi f$ and $\theta'_0 = 2\pi f_0$
Then $(f/f_0) = e^{-2i(\theta + \omega t)}$
At θ = 0; Perihelion
And $(f/f_0) = e^{-2i\omega t}$

And the Fourier transform is:

$\Gamma = (1/2\pi)\{_{-\infty}\int^{\infty} e^{-2i\omega t}\, d\,t\}$

And $\Gamma = (1/2\pi)\ {}_0\int^{\tau_0} e^{-2i\omega t}\, d\,t$

$\Gamma = (1/2\pi)\,[e^{-2i\omega t} - 1]/ -2\,í\,\omega$
$= (1/2\pi)$ [cosine $2\,\omega\,\tau_0$ + í sine $2\,\omega\,\tau_0$ - 1]/ -2 í ω

Along the line of sight
$\Gamma_x = -\,(1/2\pi)$ [sine $2\omega\,\tau_0$]/ 2ω

$\Gamma_x [100\,\tau / \tau_0] = (100\,\tau / 2\pi)$ [sine $2\,\omega\,\tau_0 / 2\,\omega\,\tau_0$] per 100 τ

With $\omega\,\tau_0$ = arc tan (v_0/c); 100 τ = 1 century = 36526 days

$\Gamma_x [100\,\tau / \tau_0]$ per century

= (100 τ /360) {sine 2 [arc tan (v_0/c)] / [arc tan (v_0/c)]}

$\Gamma_x [100\,\tau / \tau_0]$ per century
= (36526days /360degrees) {sine2 [arc tan (v_0/c)] / 2 [arc tan (v_0/c)]}
In arc seconds per century:

$\Gamma_x [100\,\tau / \tau_0]$ per century
= (36526x 24 x 3600 /360 x 3600) {sine 2[arc tan (v_0/c)] / 2[arc tan (v_0/c)]}
Where v_0 = 47.9 km/second; c = 300,000 km/second

Modern and Nobel error # 44:

$\Gamma_x [100\,\tau / \tau_0]$ = (36526 /15) {sine 2[arc tan (47.9/300,000)] / 2[arc tan (47.9/300,000)]}
= 42.5 arc seconds per century

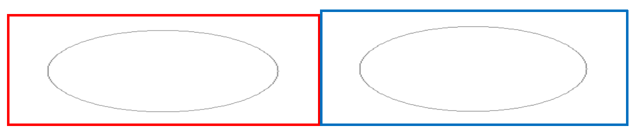
Modern and Nobel error # 45:

$\Gamma_x [100 \tau / \tau_0]$ = (36526 /15) {sine 2[arc tan (29.8/300,000)] / 2[arc tan (29.8/300,000)]}
= 42.5 arc seconds per century

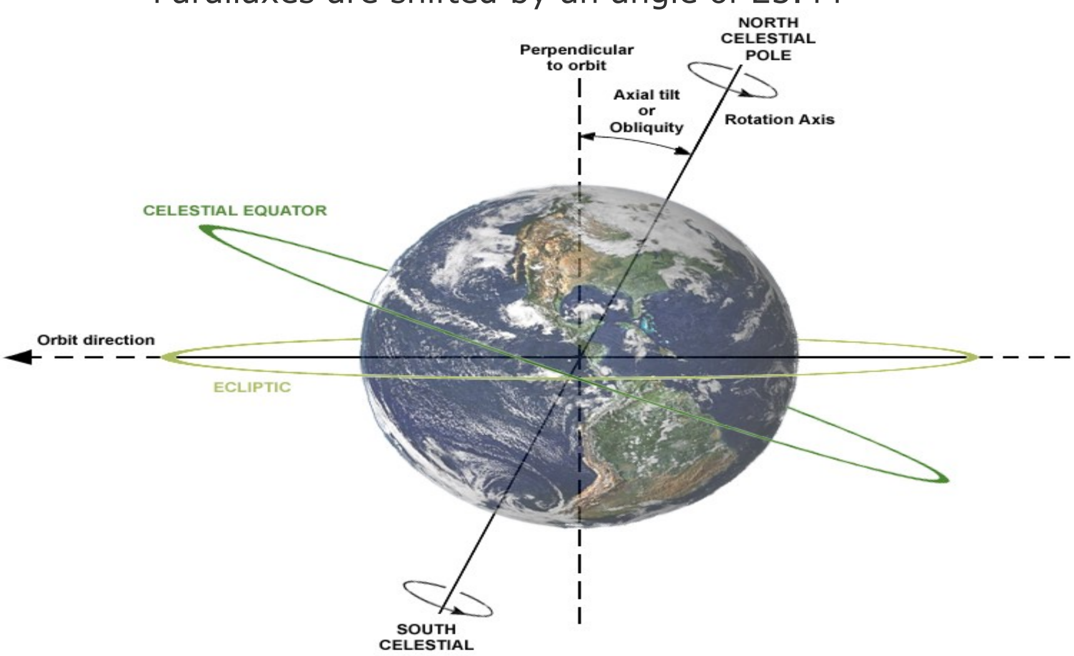
Chapter 8: Axial tilt processing

In Chapter 7 Fourier analysis said that planet Mercury's Perihelion has nothing to do with planet Mercury but has something to do with Earth.

Astronomers measure with an axial tilt of 23.44^0 because they measure from Earth and use the Sun as reference point



Parallaxes are shifted by an angle of 23.44^0



Meaning measurements are shifted by a factor of: $(1 - \text{sine } 23.44^0)$
Modern and Nobel error # 46: $(1 - \text{sine } 23.44^0)\ \delta\theta'_0$
$= (1 - \text{sine } 23.44^0)\ 70.75 = 43$ arc sec/ 100y

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Chapter ten: Descartes and LaGrange failures

10.1 $\Gamma = \Gamma_x + \Gamma_y = \Gamma_0 e^{í \omega t}$
Along the line of sight
$\Gamma_x = \Gamma_0$ cosine ωt
Then $\Delta \Gamma_x$ (seconds) $= \Gamma_x - t$
$= - 2 t \text{ sine}^2 \{[\arc \tan (V_{rm} - V_{re})/ (\sqrt{2}c)]/ 2\} = 43$
And in arc $\Delta \Gamma_x$ (arc seconds) $= \Gamma_x - t$

$= - 30 t \text{ sine}^2 \{[\arc \tan (V_{rm} - V_{re})/ (\sqrt{2}c)]/ 2\} = 43$
Where $r' = V_r$; and $r \theta' = V_\theta$; and $V_r{}^2 = 2 \gamma_r r$; and $V_\theta{}^2 = r \gamma_\theta$

The confusion is and was $\gamma_r = \gamma_\theta$; $V_r{}^2 = 2 V_\theta{}^2$; and taking $V_r = (\sqrt{2}) V_\theta$
And taking $V_r = V_r(\text{Mercury}) - V_r(\text{Earth}) = V_{rm} - V_{re}$
And $V_\theta = V_r / \sqrt{2}$

Modern and Nobel error # 47: $\Delta \Gamma_x$ (Arc second) $= \Gamma_x - \Gamma_0$
$= - 30 t \text{ sine}^2 \{[\arc \tan (V_{rm} - V_{re})/ (\sqrt{2}c)]/ 2\} = 43$ arc second /century

10.2 La Grange historical mistake

Angular velocity with respect to center of mass $\theta'_{cm} = v_{cm}/r$
Angular velocity with respect to Sun $\theta'_s = v_s/r$
And Astronomers observed: $\theta'_s = v_s/r$
Angular velocity with to the sun
And $v_{cm} = \sqrt{[GM^2/ (m + M) a]}$; $m = 0.32 \times 10^{24}$ kg; and $M = 2.0 \times 10^{30}$ kg
And $v_s = \sqrt{(GM/a)}$
And $(\theta'_{cm} - \theta'_s) / \theta'_s = [(2 \pi/T_{cm}) - (2 \pi /T_s)]/ (2 \pi /T_s)$
$= (T_{cm}/T_s) - 1 = (v_s/v_{cm}) - 1$
$= [\sqrt{(GM/a)}] / \{\sqrt{[(m + M) a/ GM^2]}\} - 1$
$= \sqrt{[(m + M)/M]} - 1$
$= \sqrt{[1 + (m/M)]} - 1$
$\approx 1 + (m/2 M) - 1 \approx m/2 M$

And $(\theta'_{cm} - \theta'_s)/\theta'_s \approx (m/2M)$; and $(\theta'_{cm} - \theta'_s) = (2\pi/T_s)(m/2M)$
And $(\theta'_{cm} - \theta'_s) T_s = (2\pi + \delta\theta - 2\pi) = \pi m/M$; $\delta\theta = \pi m/M$
Multiplying by $[(180/\pi)(3600)(26526/\tau_0)]$

Modern and error # 48 $= \pi (m/M) [(180/\pi)(3600)(26526/\tau_0)] = 43$
$= \pi (0.32 \times 10^{24}/2 \times 10^{30}) [(180/\pi)(3600)(26526/\tau_0)] = 43$

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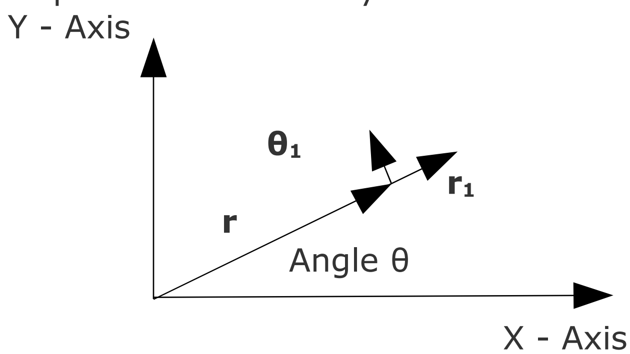
Chapter 9: Newton's equation was/is solved wrong for 350 years

All there is in the Universe is objects of mass m moving in space (x, y, z) at a location
$\mathbf{r} = \mathbf{r}(x, y, z)$. The state of any object in the Universe can be expressed as the product
$\mathbf{S} = m\,\mathbf{r}$; State = mass x location:
$\mathbf{P} = d\mathbf{S}/dt = m(d\mathbf{r}/dt) + (dm/dt)\mathbf{r}$ = Total moment
= change of location + change of mass
$= m v + m' r$; v = velocity $= dr/dt$; m' = mass change rate
$\mathbf{F} = d\mathbf{P}/dt = d^2\mathbf{S}/dt^2$ = Total force
$= m(d^2\mathbf{r}/dt^2) + 2(dm/dt)(d\mathbf{r}/dt) + (d^2m/dt^2)\mathbf{r}$
$= m\gamma + 2m'\mathbf{v} + m''\mathbf{r}$; γ = acceleration; m'' = mass acceleration rate
In polar coordinates system



First $\mathbf{r} = r\,\mathbf{r_1} = r\,[\text{cosine}\,\theta\,\hat{\mathbf{i}} + \text{sine}\,\theta\,\hat{\mathbf{j}}]$
Define $\mathbf{r_1} = \text{cosine}\,\theta\,\hat{\mathbf{i}} + \text{sine}\,\theta\,\hat{\mathbf{j}}$
Define $\mathbf{v} = d\mathbf{r}/dt = (dr/dt)\,r'\,\mathbf{r_1} + r\,(d\mathbf{r_1}/dt) = r'\,\mathbf{r_1} + r\,(d\mathbf{r_1}/dt)$
$= r'\,\mathbf{r_1} + r\,\theta'[-\text{sine}\,\theta\,\hat{\mathbf{i}} + \text{cosine}\,\theta\,\hat{j}]$
$= r'\,\mathbf{r_1} + r\,\theta'\,\boldsymbol{\theta_1}$
Define $\boldsymbol{\theta_1} = -\text{sine}\,\theta\,\hat{i} + \text{cosine}\,\theta\,\hat{j}$;
And with $\mathbf{r_1} = \text{cosine}\,\theta\,\hat{i} + \text{sine}\,\theta\,\hat{j}$
Then $d\boldsymbol{\theta_1}/dt = \theta'[-\text{cosine}\,\theta\,\hat{i} - \text{sine}\,\theta\,\hat{j} = -\theta'\,\mathbf{r_1}$
And $d\mathbf{r_1}/dt = \theta'(-\text{sine}\,\theta\,\hat{i} + \text{cosine}\,\theta\,\hat{j}) = \theta'\,\boldsymbol{\theta_1}$
Define $\gamma = d(r'\,\mathbf{r_1} + r\,\theta'\,\boldsymbol{\theta_1})/dt$
$= r''\,\mathbf{r_1} + r'(d\mathbf{r_1}/dt) + r'\,\theta'\,\boldsymbol{\theta_1} + r\,\theta''\,\boldsymbol{\theta_1} + r\,\theta'(d\boldsymbol{\theta_1}/dt)$

$= (r'' - r\theta'^2)\, \mathbf{r_1} + (2r'\theta' + r\,\theta'')\, \boldsymbol{\theta}$ (1)

$r = r\, r_1;\ v = r'\, r_1 + r\,\theta'\,\theta_1;\ \gamma = (r'' - r\theta'^2)\, r_1 + (2r'\theta' + r\,\theta'')\,\theta_1$

r = location; **v =** velocity; γ **=** acceleration

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

$\mathbf{F} = m\,[(r'' - r\theta'^2)\,\mathbf{r_1} + (2r'\theta' + r\,\theta'')\,\boldsymbol{\theta_1} + + 2m'(r'\,\mathbf{r_1} + r\,\theta'\,\boldsymbol{\theta_1}) + (m''\,r)\,\mathbf{r_1}$

$= [d^2 (m\,r)/dt^2 - (m\,r)\,\theta'^2]\,\mathbf{r_1} + (1/m\,r)\,[d\,(m^2 r^2 \theta')/d\,t]\,\boldsymbol{\theta_1}$

With $d^2 (m\,r)/dt^2 - (m\,r)\,\theta'^2 = F\,(r)$

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

If light mass m = constant, then

With $m\,[d^2 r/dt^2 - r\,\theta'^2] = F\,(r)$ Eq-1

And $d\,(r^2\theta')/d\,t = 0$ Eq-2

A - Newton's gravitational classical or past time solution

Newton took m = constant

Then $\mathbf{F} = m\,\gamma$

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

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

Then $m\,(d^2 r/dt^2 - r\,\theta'^2) = -\,G\,m\,M/r^2$ Eq-1

And $d\,(r^2\theta')/d\,t = 0$ Eq-2

From Eq-2: $d\,(r^2\theta')/d\,t = 0$

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

With $d^2 r/dt^2 - r\,\theta'^2 = 0$

Let $u = 1/r;\ r = 1/u;\ r^2\theta' = h = \theta'/u^2$

And $d\,r/d\,t = (d\,r/ d\,u)\,(d\,u /d\,\theta)\,(d\,\theta/ d\,t) = (-\,1/u^2)\,(\theta')\,(d\,u/ d\,\theta)$

$= -\,h\,(d\,u/ d\,\theta)$

And $d^2 r/ d\,t^2 = -\,h\,(\theta')\,(d^2 u/ d\,\theta^2)$

$= (-\,h^2/r^2)\,(d^2 u/ d\,\theta^2)$

$= -\,h^2 u^2\,(d^2 u/ d\,\theta^2)$

With $d^2 r/dt^2 - r\,\theta'^2 = -\,G\,M/r^2$ E q – 1

And $-\,h^2 u^2\,(d^2 u/ d\,\theta^2) - (1/u)\,(h\,u^2)^2 = -\,G\,M\,u^2$

Then $(d^2 u/ d\,\theta^2) + u = G\,M/h^2$

And $u = G\,M/h^2 + A$ cosine θ

The $r = 1/u = 1/\,(G\,M/h^2 + A$ cosine $\theta)$; divide by $G\,M/h^2$

And $r = (h^2/G\,M)/\,[1 + (A\,h^2/G\,M)$ cosine $\theta]$

With; $h^2/G\,M = a\,(1 - \varepsilon^2)$; $(A\,h^2/G\,M) = \varepsilon$

Or, $r = a\,(1 - \varepsilon^2)/\,(1 + \varepsilon$ cosine $\theta)$; definition of an ellipse

This is Newton's equation classical solution

Measuring planetary orbit in real time using Newton's equation classical solution does not match Newton's equation classical solution but solving Newton's equation

in real time or solving Newton's equation in present time will match measurements of planetary orbits in real time. Solving an equation in real or present time is solving it in complex numbers system. Solving Newton's equation in complex numbers produces quantum mechanics solution. The difference between real numbers classical solution and real time or complex numbers solution will produce relativistic effects as visual effects. In short:
Real (Complex numbers solution) = real numbers solution + relativistic effects

B - Real time solution or complex numbers solution of Newton's equation is:

$$\mathbf{F} = m\,[(r'' - r\theta'^2)\,\mathbf{r_1} + (2r'\theta' + r\,\theta'')\,\boldsymbol{\theta_1} + + 2m'(r'\,\mathbf{r_1} + r\,\theta'\,\boldsymbol{\theta_1}) + (m''\,r)\,\mathbf{r_1}$$
$$= [d^2 (m\,r)/dt^2 - (m\,r)\,\theta'^2]\,\mathbf{r_1} + (1/m\,r)\,[d\,(m^2r^2\theta')/d\,t]\,\boldsymbol{\theta_1}$$

With $d^2 (m\,r)/dt^2 - (m\,r)\,\theta'^2 = F(r) = -\,G\,m\,M/r^2$ E q - 1
And $d\,(m^2r^2\theta')/d\,t = 0$ E q - 2

From E q - 2; $d\,(m^2r^2\theta')/d\,t = 0$
Then $m^2r^2\theta'$ = constant
$= H$
$= m^2\,h;\ h = r^2\,\theta'$

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 $2\,(m'/m) = 2(\lambda_m + \grave{i}\,\omega_m)$
And $2(r'/r) = 2(\lambda_r + \grave{i}\,\omega_m)$
And $\theta''/\theta' = -2[\lambda_m + \lambda_r + \grave{i}\,[\omega_m + \omega_r)]$

Then $(m'/m) = (\lambda_m + \grave{i}\,\omega_m)$
Or $d\,m/m\,d\,t = (\lambda_m + \grave{i}\,\omega_m)$
And $dm/m = (\lambda_m + \grave{i}\,\omega_m)\,d\,t$
Then $m = m_0\,e^{(\lambda_m + \grave{i}\,\omega_m)\,t}$
And $m = m(\theta, 0)\,m(0, t);\ m_0 = m(\theta, 0)$
And $m = m(\theta, 0)\,e^{(\lambda_m + \grave{i}\,\omega_m)\,t}$
And $m(0, t) = e^{(\lambda_m + \grave{i}\,\omega_m)\,t}$

Finally, $m = m_0\,e^{(\lambda_m + \grave{i}\,\omega_m)\,t}$

Similarly we can get $(r'/r) = (\lambda_r + \grave{i}\,\omega_r)$
Or $d\,r/r\,d\,t = (\lambda_r + \grave{i}\,\omega_r)$
And $d\,r/r = (\lambda_r + \grave{i}\,\omega_r)\,d\,t$
Then $r = r_0\, e^{(\lambda_r + \grave{i}\,\omega_r)\,t}$
And $r = r(\theta, 0)\, r(0, t);\ r_0 = r(\theta, 0)$
And $r = r(\theta, 0)\, e^{(\lambda_r + \grave{i}\,\omega_r)\,t}$
And $r(0, t) = e^{(\lambda_r + \grave{i}\,\omega_r)\,t}$

Finally, $r = r_0\, e^{(\lambda_r + \grave{i}\,\omega_r)\,t}$

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And $\theta'(\theta, t) = \theta'(\theta, 0)]\, e^{-2\,[(\lambda_m + \dot{i}\,\omega_m) + (\lambda_r + \dot{i}\,\omega_r)]\,t}$

And, $\theta'(\theta, t) = \theta'(\theta, 0)\,\theta'(0, t)$
And $\theta'(0, t) = e^{-2\,[(\lambda_m + \lambda_r) + \dot{i}\,(\omega_m + \omega_r)]\,t}$

Also $\theta' = H / m^2 r^2$

From (1): $d^2 (m\,r)/dt^2 - (m\,r)\,\theta'^2 = - G\,m\,M/r^2$
$= -G\,M\,m^3/m^2r^2$
$= - G\,M\,m^3\,u^2$
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 $d^2 (m\,r)/dt^2 = -H\,\theta' d^2u/d\theta^2 = - Hu^2\,[d^2u/d\theta^2]$

$- Hu^2\,[d^2u/d\theta^2] - (1/u)\,(Hu^2)^2 = -G\,M\,m^3\,u^2$
And $(d^2u/ d\theta^2) + u = G\,M\,m^3/ H^2$

And $[d^2u\,(\theta, 0)/ d\theta^2] + u\,(\theta, 0) = G\,M\,(\theta, 0)\,m^3\,(\theta, 0)/ H^2\,(\theta, 0)$
Then $u\,(\theta, 0) = G\,M\,m^3\,(\theta, 0)/ H^2\,(\theta, 0) + A$ cosine θ
$= G\,m_0\,M_0/ h^2 + A$ cosine θ

And $m_0\,r = 1/u\,(\theta, 0) = 1/ [G\,m_0\,M_0/ h^2 + A$ cosine $\theta]$
Or, $r = 1/ [G\,M_0/ h^2 + A$ cosine $\theta]$
And $r = h^2/ G\,M_0/ [1 + (Ah^2/ G\,M_0)$ cosine $\theta]$

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

This is Newton's gravitational law classical 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 $c = \varepsilon a$

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

This is real time solution or present solution of Newton's equation

It is the math formula that matches astronomical measurements

If time is frozen that is t = 0

Then $r(\theta, 0) = a(1-\varepsilon^2)/(1+\varepsilon \text{ cosine } \theta)$ or classical or event time solution -- II

Relativistic is the difference between Real I and II

And it is the visual difference motion and motion measurement

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The difference between and event and its measurement in real time

Real time solution = Event time solution + time shift solution

Real of a complex orbit solution = real numbers orbit solution + shift solution

We Have $\theta'(0, 0) = h(0, 0)/r^2(0, 0) = 2\pi ab/\tau_0 a^2(1-\varepsilon)^2$

$= 2\pi a^2[\sqrt{(1-\varepsilon^2)}]/\tau_0 a^2(1-\varepsilon)^2]$

$= 2\pi[\sqrt{(1-\varepsilon^2)}]/\tau_0(1-\varepsilon)^2]$

Then $\theta'(0, t) = 2\pi\sqrt{[(1-\varepsilon^2)/\tau_0(1-\varepsilon)^2]}\, e^{-2[(\lambda_m + \lambda_r) + i(\omega_m + \omega_r)]t}$

Assuming that $\lambda_m + \lambda_r = 0$; or $\lambda_m = \lambda_r = 0$

Then $\theta'(0, t) = 2\pi\sqrt{[(1-\varepsilon^2)/\tau_0(1-\varepsilon)^2]}\, e^{-2i(\omega_m + \omega_r)t}$

$= 2\pi\sqrt{[(1-\varepsilon^2)/\tau_0(1-\varepsilon)^2]}\,[\text{cosine } 2(\omega_m + \omega_r)t - i \text{ sine } 2(\omega_m + \omega_r)t]$

Real $\theta'(0, t) = 2\pi\sqrt{[(1-\varepsilon^2)/\tau_0(1-\varepsilon)^2]} \text{ cosine } 2(\omega_m + \omega_r)t$

Real $\theta'(0, t) = 2\pi\sqrt{[(1-\varepsilon^2)/\tau_0(1-\varepsilon)^2]}\,[1 - 2\text{sine}^2(\omega_m + \omega_r)t]$

Naming $\theta' = \theta'(0, t)$; $\theta'_0 = 2\pi\sqrt{[(1-\varepsilon^2)/\tau_0(1-\varepsilon)^2]}$

Then $\theta' = 2\pi\sqrt{[(1-\varepsilon^2)/\tau_0(1-\varepsilon)^2]}\,[1 - 2\text{ sine}^2(\omega_m + \omega_r)t]$

And $\theta' = \theta'_0[1 - 2\text{sine}^2(\omega_m + \omega_r)t]$

And $\theta' - \theta'_0 = -2\theta'_0 \text{sine}^2(\omega_m + \omega_r)t]$

$= -2\{2\pi\sqrt{[(1-\varepsilon^2)/\tau_0(1-\varepsilon)^2]}\} \text{ sine}^2(\omega_m + \omega_r)t]$

And $\theta' - \theta'_0 = -4\pi\sqrt{[(1-\varepsilon^2)/\tau_0(1-\varepsilon)^2]} \text{ sine}^2(\omega_m + \omega_r)t]$

If this apsidal motion is to be found as visual effects, then

With, $v°$ = spin velocity; v_0 = orbital velocity; τ_0 = orbital period

And $\omega_m \tau^0 = \tan^{-1} (v°/c)$; $\omega_r \tau_0 = \tan^{-1} (v_0/c)$

$\Delta \theta' = \theta' - \theta'_0$

$= - 4 \pi \surd [(1-\varepsilon^2)]/ \tau_0 (1-\varepsilon)^2]$ sine² $[\tan^{-1} (v°/c) + \tan^{-1} (v_0/c)]$ radians per τ_0

In degrees per period is multiplication by $180/ \pi$

$\Delta \theta' = (-720) \surd [(1-\varepsilon^2)/ \tau_0 (1-\varepsilon)^2]$ sine² $\{\tan^{-1} [(v°+ v_0)/c]/ [1 - v° v_0/c^2]\}$

The angle difference in degrees per period is:

$\Delta \theta = (\Delta \theta') \tau_0$

$\Delta \theta = (-720) \surd [(1-\varepsilon^2)/ (1-\varepsilon)^2]$ sine² $\{\tan^{-1} [(v°+ v_0)/c]/ [1 - v° v_0/c^2]\}$ calculated in degrees per century is multiplication $= 100 \tau$; τ = Earth orbital period = 100 x 365.26 = 36526 days and dividing by using τ_0 in days

$\Delta \theta (100 \tau / \tau_0) = \Delta \theta$ in degrees per century

$= (-72000 \tau / \tau_0) \surd [(1-\varepsilon^2)/ (1-\varepsilon)^2]$ sine² $\{\tan^{-1} (v°+ v_0)/c]/ [1 - v° v_0/c^2]\}$

In arc second per century is multiplying by 3600

$\Delta \theta = - 3600 \times 720 (100 \tau / \tau_0) \surd [(1-\varepsilon^2)/ (1-\varepsilon)^2] \times$

Sine² $\{\tan^{-1} [(v°+ v_0)/c]/ [1 - v° v_0/c^2]\}$

Approximations I

With $v° << c$ and $v_0 << c$, then $v° v_0 <<< c^2$ and $[1 - v° v*/c^2] \approx 1$

$\Delta \theta \approx - 3600 \times 720 (100 \tau / \tau_0) [\surd (1-\varepsilon^2)]/ (1-\varepsilon)^2]$ Sine² $\tan^{-1} [(v°+ v_0)/c]$

Arc second per century

Approximations II

With $v° << c$ and $v* << c$

Then Sine² $\tan^{-1} [(v°+ v_0)/c] \approx (v° + v_0)/c$

$\Delta \theta$ (Calculated **i**n arc second per century)

$= (-720 \times 36526 \times 3600/ \tau_0$ days$) \surd [(1-\varepsilon^2)/ (1-\varepsilon)^2] [(v° + v_0)/c]^2$

Approximations III

The circumference of an ellipse

Is: $2 \pi a (1 - \varepsilon^2/4 + 3/16(\varepsilon^2)^2 - --.) \approx 2 \pi a (1- \varepsilon^2/4)$; $r_0 = a (1- \varepsilon^2/4)$

From Newton's laws for a circular orbit:

$F = [M/m F = - Gm M/r_0^2 = m v_0^2/ r_0$

Then $v_0^2 = GM/ r_0$

For planet Mercury

And $v_0 = \surd [GM/ r] = \surd [GM/a (1-\varepsilon^2/4)]$

$G = 6.673 \times 10^{-11}$; $M = 2 \times 10^{30}$ kg; $a = 58.2 \times 10^9$ meters; $\varepsilon = 0.206$

Then $v_0 = \surd [6.673 \times 10^{-11} \times 2 \times 10^{30} /58.2 \times 10^9 (1- 0.206^2/4)]$

And $v_0 = 48.14$ km/sec [Mercury]; $c = 300,000$

$\Delta \theta$ (Calculated **i**n arc second per century)

$= (-720 \times 36526 \times 3600/ \tau_0$ days$) \surd [(1-\varepsilon^2)/ (1-\varepsilon)^2] [(v° + v_0)/c]^2$

With $\varepsilon = 0.206$; $\surd [(1-\varepsilon^2)/ (1-\varepsilon)^2] = 1.552$; $v° = 3$ meters per second

$\Delta \theta = (-720 \times 36526 \times 3600/88)\ 1.552\ (48.143/300,000)^2$

$\Delta \theta = 43$ arc second per century

Modern Nobel error # 49:

$= (-720 \times 36526 \times 3600/\ \tau_0 \text{ days}) \sqrt{[(1-\varepsilon^2)/ (1-\varepsilon)^2]}\ [(v° + v_0)/c]^2$

$= (-720 \times 36526 \times 3600/88)\ 1.552\ (48.143/300{,}000)^2$

= 43 arc second per century

With $\theta' = \theta'_0\, e^{-2i\,\omega\,t}$

Then $\tau = \tau_0\, e^{2i\,\omega\,t}$; $\Delta\,\tau = -\,2\,\tau_0\, \text{sine}^2 \text{ arc tan } (v/c)$

Modern and Nobel error # 50 is

$\Delta\,\theta$ (per century) = $-\,2 \times 15\,\tau_0\, \text{sine}^2$ arc tan (v/c); τ_0 = 100 years

$= -\,30\,(100 \times 36526 \times 24 \times 3600)\ \text{sine}^2 \tan^{-1}(48.14/300{,}000)$ = 43 arc sec/100y