Aether Wind and Aether Inflow versus Dynamic and Static Graviton Fluxes and Their Effects on Light Speed and Time Dilation

Edward T. H. Wu

[Abstract]
Recently, two unknown particle flows named Aether Wind and Aether Inflow have been reported which can cause time dilation and change of light speed at different moving directions and speeds of an object or event (clock or light source) with respect to the local gravitational fields. However, according to Yangton and Yington Theory, photon is a free Wu's Pair traveling in vacuum space. Like other moving particles, there is no need of any carrier. Therefore, it is believed that those unknown particles (Aethers), instead of light carriers, they are actually gravitons. In fact, Aether Inflow is the Static Graviton Flux passing through the target object emitted from the parent object. Aether Wind on the other hand, is the Dynamic Graviton Flux passing through the target object due to the relative motions of the target object with respect to the gravitational field. According to Hafele-Keating's experimental results, aether wind speeds and time dilations in both east bound and west bound air flights can be interpreted by Dynamic Graviton Fluxes. Also, complying with Reginald Cahill re-analyzed Dayton Miller's interferometer experimental results, aether inflow speeds and time dilations can be explained by Static Graviton Fluxes. Furthermore, based on Graviton Radiation and Contact Interaction Theory and Gravity Affected Wu's Spacetime Shrinkage Theory, corresponding aether flow speeds, graviton fluxes and time dilations can be calculated for various target objects at different locations.

[Keywords]
Aether, Aether Wind, Aether Inflow, Graviton, Graviton Flux, Static Graviton Flux, Dynamic Graviton Flux, Yangton and Yington, Graviton Radiation and Contact Interaction, Wu's Spacetime Shrinkage Theory, Time Dilation.

I. Introduction

Recently, two unknown particle flows named Aether Wind and Aether Inflow have been reported which can cause time dilation and change of light speed at different moving directions and speeds of an object or event (clock or light source) with respect to the local gravitational fields. However, according to Yangton and Yington Theory, photon is a free Wu's Pair traveling in vacuum space. Like other moving particles, there is no need of any carrier. Therefore, it is believed that those unknown particles (Aethers), instead of light carriers, they are actually gravitons. In fact, Aether Inflow is the Static Graviton Flux passing through the target object emitted from the parent object. Aether Wind on the other hand, is the Dynamic Graviton Flux passing through the target object due to the relative motions of the target object with respect to the gravitational field. It is the purpose of this paper to explore and discuss the above proposed ideas.

II. Aether Wind

According to Hafele-Keating experiment [1] and Jeremy Fiennes analysis [2], four atomic clocks flying twice in east bound and west bound around the world, then compared to the earth bound atomic clock, the following results were obtained based on ECI reference system (Fig. 1):

1.   Earth bound clock (B) on ground at aether wind speed 0.32 km/s towards east based on earth revolution is used as reference time.
2.   Plane was flying at airspeed 0.23 km/s.
3.   East bound clock (A) at aether wind speed 0.55 km/s towards east having a time loss of 59 ns with respect to earth bound clock (B).
4.   West bound clock (C) at aether wind speed 0.09 km/s towards east having a time gain of 273 ns with respect to earth bound clock (B).

Where aether wind speed of a flying clock is defined as the vector summation of plane airspeed 0.23 km/s and earth revolution speed 0.32 km/s.
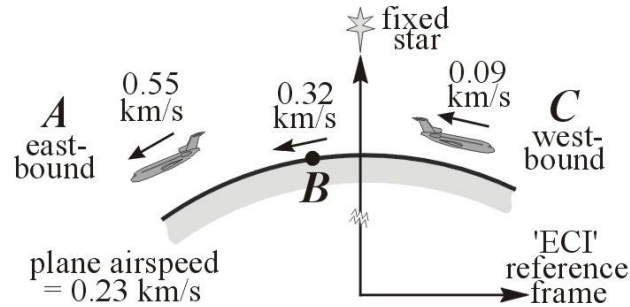
Fig. 1   Aether Winds

H&K took the airliners' mean cruising speed to be 830 km/h = 0.23 km/s. The Earth's has a circumference about 40k km, and hence a periferal speed at the equator v = 0.46 km/s. At the latitude of the flights it will be somewhat less, say v = 0.32 km/s. The aether speeds of the three clocks are then those of Fig. 1. The eastbound clock A has the highest speed of $v_a = 0.32 + 0.23 = 0.55$ km/s. The earthbound clock B is next highest: $v_b = 0.32$ km/s. The westbound clock C is the slowest at $v_c = 0.32 - 0.23 = 0.09$ km/s.

Based on Lorentz aether model, Hafele and Keating claimed that the time durations of the east bound clock having a time loss of t_a = - 95 ns and west bound clock having a time gain t_b = 295 ns are reasonably close to the experimental results t_a = - 59 ns and t_b = 273 ns respectively. However, the fudging of the data has raised a lot of suspicions even including the inventor of the atomic clocks Louis Essen himself.

In 2012, C.C. Su [3] studied signal propagation times for Earth-orbiting satellites and interplanetary spacecraft, finding that signal speeds are constant in ECI and heliocentric frames respectively. He therefore proposed that in a region under the influence of the gravitational field due to a massive object there forms a local aether that is stationary with respect to the gravitational potential of that object. For earthbound and interplanetary propagation the medium is stationary in a geocentric and a heliocentric inertial frame respectively. Electromagnetic waves propagate at a constant speed with respect to the associated local ether.
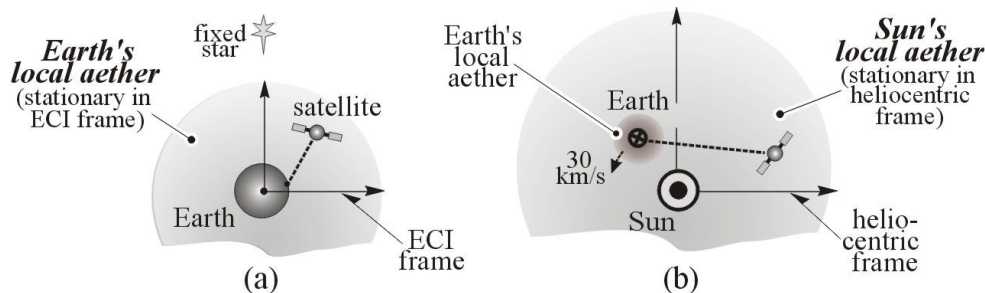

Fig. 2   Constant light speeds in local stationary aethers

In other words, in the region of the Earth where its gravitational potential dominates signals travel at a constant speed c in an Earth's local aether stationary in the ECI frame (Fig. 2a). Also, at a constant C' where the Sun's gravitational potential dominates, in a Sun's local aether stationary in the heliocentric frame (Fig. 2b). On this basis massive objects 'drag' their local aethers around with them in their orbital motion. As a result, Earth drags its own local aether through the Sun's at the Earth's orbital speed of 30 km/s.

III.   Aether Inflow

In 2003 Reginald Cahill re-analyzed Dayton Miller's interferometer results [4][2]. He found that the aether speed at the Earth's surface comprises the following components:
1.   420 km/s towards the center of the galaxy
2.   42 km/s towards the Sun
3.   11.2 km/s towards the Earth's center
4.   30 km/s due to the Earth's orbital speed
All these four components are shown in (Fig. 3). The component of 11.2 km/s into the Earth's center doesn't show in a horizontal interferometer, so this is an estimate.
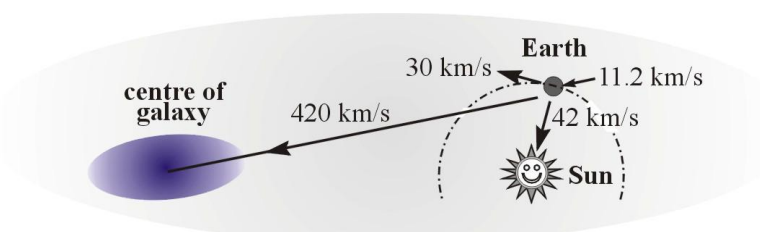
Fig. 3   Aether Inflows

The first three components suggest a relation between a gravitational potential and an aether inflow. He did some calculation and came up with a general relation as follows:

aether inflow = 1.4×10^{-3} (gravitational potential)$^{1/2}$

IV.   Questions about Aether Wind and Aether Inflow

With the above experiment results, several questions about aether wind and aether inflow are raised as follows:

1.   Aether, by definition is light (photon) carrier. Since light travels all over the universe, does it mean that Aether also exists everywhere in the universe?

2.   Why aether wind flows along the motion of the object surrounding the planet (earth)? Why the total aether wind speed is the net speed of aether wind speed and airplane air speed?

3.   Why aether inflow flows towards the center of the planet (earth, sun and Milk Way)? Why is it bigger at massive gravitational field?

4.   What are the differences between aether wind and aether inflow?

5.   Can aether wind change the light speed? How about aether inflow?

6.   Why light speed is constant in the local aether stationary to the planets (earth, sun and Milk Way)?

7.   What are the correlations between aether flows (wind and inflow) and graviton fluxes (static and dynamic)? (local aether similar to gravitational field is stationary to the object, but aether inflow is dependent on gravitational field).

8.   Can aether wind produce time dilation and what is the mechanism?

9.   Can aether inflow produce time dilation and what is the mechanism?

10.   Can relativism be used to calculate the time dilation?

11.   If not a light carrier, can aether be an independent particle such as graviton?

It is my understanding that so far there is no proper answers to the above questions regarding the existing experimental results. Therefore, it is the purpose of this paper, trying to interpret these experiments and answer the above questions based on Graviton Radiation and Contact Interaction Theory [5] and Gravity Affected Wu's Spacetime Shrinkage Theory [6].

V.   Clock Paradox

In special relativity, light speed is constant and Velocity Time Dilation can be derived as follows:

$t_2' = (1 - v^2/c^2)^{-1/2} \, t_1$

$t_1' = (1 - v^2/c^2)^{-1/2} \, t_2$

Because

$t_1 = t_1'$

Therefore,

$t_2 \neq t_2'$

Where t_1 is the clock time measured at object 1 and t_1' is the relativistic time of object 1 based on Velocity Time Dilation observed at object 2. t_2 is the clock time measured at object 2 and t_2' is the relativistic time of object 2 based on Velocity Time Dilation observed at object 2. v is the speed of object 1 measured at object 2 or vice versa. c is the constant light speed.

For the same event, there is only one time duration. The inconsistence of time ($t_2 \neq t_2'$) in special relativity is called clock paradox. As a result, because of the self conflict caused by clock paradox [7], light speed is not constant [8] and special relativity cannot be used to explain the time dilation created by aether inflow and aether wind. On the other hand, general relativity is good for time dilation only when it is caused by gravitational field but the acceleration (except that caused by gravitational field). Also, Lorentz factor $(1 - v^2/c^2)^{-1/2}$ is not a correct factor. It cannot be used to calculate time dilation and other properties related to gravitational field and aging of the universe.

VI. Graviton, Gravitational Force and Graviton Propagation

According to Yangton and Yington Theory [9], Wu's Pairs can be used to form elementary subatomic particles with string structures in a variety of shapes [10]. When two string structures come together in the same circulation direction, they can attract each other at the ends of the strings by locking the Yangton of one string to the Yington of the other string (this is known as String Force). Otherwise, there is no interaction if they are in the opposite circulation directions. However, when two string structures come together side by side, no matter the circulation direction, they can adjust themselves to attract each other as the Yangtons of one string contact the Yingtons of the other string during each cycle of the circulations. This attractive only force is known as "Gravitational Force" and the string structures that produce the gravitational force are called "Gravitons".

Furthermore, according to Graviton Radiation and Contact Interaction Theory [5], gravitational force can be propagated via graviton radiation and accomplished by contact interaction between the emitted graviton from parent object and the resident graviton on target object, such that Newton's Law of Universal Gravitation is fulfilled. In fact, gravitational field can be considered as the stationary concentration of graviton vectors or the static graviton flux (Aether Inflow)[4] emitted from the parent object to the target object. In contrast, dynamic graviton flux is the graviton flux generated by the relative motion of the object with respect to the gravitational field (Aether Wind) [1].

VII. Graviton Flux and Newton's Law

Newton's Law of Universal Gravitation only describes the phenomenon of the gravitational force between two distance objects without explaining what the process is and how it works. Particle Radiation and Contact Interaction Theory is proposed to explain the mechanism and process of the propagation of gravitational force [11].

It is obvious that the flux of the gravitons (I), the amount of the gravitons emitted from the parent object reaching the target object per unit area per unit time, should be proportional to the mass of the parent object (m_1), and also inversely proportional to the square of the distance (r) between parent object and target object. Therefore,

$$\mathbf{I} = i\, m_1/r^2\ \mathbf{r}$$

Where $\mathbf{I}$ is the graviton vector flux, i is graviton flux constant, m_1 is the mass of parent object, r is the emitting distance from m_1 and $\mathbf{r}$ is the unit vector with emitting direction away from m_1.

Furthermore, the total gravitational force (F) generated by contact interaction between the gravitons emitted from the parent object to the target object and the gravitons on the target object should be proportional to both the flux of the gravitons (I) emitted from the parent object to the target object and the total amount of the gravitons on the target object which is proportional to the mass of the target object (m_2). Therefore,

$$\mathbf{F_{12}} = j\,(i\, m_1/r^2)\, m_2\, \mathbf{S}$$

Where $\mathbf{F_{12}}$ is the gravitational force applied on to target object m_2 by parent object m_1, j is graviton contact interaction constant, i is graviton flux constant, m_1 is the mass of parent object and m_2 is the mass of target object, r is the distance between m_1 and m_2 and $\mathbf{S}$ is the unit vector with direction from m_2 to m_1.

Furthermore, because ij = ji, therefore gravitational force $\mathbf{F_{12}}$ applied on to target object m_2 by parent object m_1 is identical to the gravitational force $\mathbf{F_{21}}$ applied on to parent object m_1 by target object m_2.

As a result, given G = ij, Newton's Law of Universal Gravitation can be derived as follows:

$$\mathbf{F} = G\,(m_1 m_2/r^2)\, \mathbf{S}$$

Where $\mathbf{F}$ is the gravitational force, G is the gravitational constant 6.674×10^{11} N m^2 kg^{-2}, m_1 is the mass of parent object and m_2 is the mass of target object, r is the distance between m_1 and m_2 and $\mathbf{S}$ is the unit vector with direction from m_2 to m_1.

VIII. Gravitational Field, Graviton Concentration and Graviton Flux

Gravitational field by definition is the total gravitational forces generated from all the objects in the universe applied onto a unit mass (1 Kg) at a point in space. According to Particle Radiation and Contact Interaction Theory, gravitational field is proportional to the summation of the graviton fluxes emitted from all the parent objects in the universe to a point in space. Therefore,

$$\mathbf{F_g} = \sum G\,(M/r^2)\, \mathbf{S}$$

Where $\mathbf{F_g}$ is the gravitational field, G is the gravitational constant 6.674×10^{11} N m^2 kg^{-2}, M is the mass of a parent object, r is the distance from the parent object to the point and $\mathbf{S}$ is the unit vector with direction from the point to the parent object.

Since the graviton flux from each parent object to the point is constant, therefore the concentration of graviton vectors (graviton with direction) emitted from each parent object onto the point is also constant, and they are proportional to each other.

$$c \propto M/r^2$$

Because

$$\mathbf{F_g} = \sum G \, (M/r^2) \, \mathbf{S}$$

Therefore,

$$\mathbf{F_g} = \sum K \, c \, \mathbf{S}$$

Where $\mathbf{F_g}$ is the gravitational field, K is the concentration constant, c is the concentration of the graviton vectors and $\mathbf{S}$ is the unit vector with direction from the point to the parent object.

As a result, gravitational field represents not only the total flux of graviton vectors, but also the total concentration of graviton vectors at a point in space [11].

Similar to gravitational field, the electrical field is defined as the electrical force applied from all charged particles in the universe onto a single positive charge at a point in space. Therefore, electrical field also represents not only the total flux of electron (positron) vectors, but also the total concentration of electron (positron) vectors at a point in space.

Furthermore, because both gravitational and electrical fields can be considered as the total fluxes of graviton and electron vectors, and to be derived from "Particle Radiation and Contact Interaction Theory", also with a linear relationship to the total concentrations of graviton vectors and electron vectors respectively at a point in space, therefore, Particle Radiation and Contact Interaction Theory can be considered as the foundations of Quantum Field Theory, Quantum Gravity Theory and Unified Field Theory.

IX. Wu's Spacetime Shrinkage Theory

When the universe becomes older, based on Five Principles of The Universe [12] and complying with Cosmic Microwave Background Radiation (CMB) [13], the speed of Yangton and Yington circulation is getting faster which can make Wu's Unit Length and Wu's Unit Time smaller due to the attraction caused by Force of Creation in Wu's Pairs. This phenomenon is named "Aging Affected Wu's Spacetime Shrinkage Theory" [6]. Furthermore, in compliance with Principle of Parallelism, dimension and duration of an object or event should become smaller with aging of the universe. In other words, dimension (size) should become smaller and duration (time) should become faster with aging of the universe. Also, wavelength should decrease with aging of the universe ($\lambda \propto l_{yy}$), such that Cosmological Redshift can be observed.

On the other hand, at large gravitational field, because of the heavy graviton bombardment caused by massive gravitational field based on Graviton Radiation and Contact Interaction Theory, the speed of Yangton and Yington circulation is getting slower which can make Wu's Unit Length and Wu's Unit Time bigger. This phenomenon is named "Gravity Affected Wu's Spacetime Shrinkage Theory" [6]. Furthermore, in compliance with Principle of Parallelism, dimension and duration of an object or event should become bigger at massive gravitational field. In other words, dimension (size) should become bigger and duration (time) should become slower at massive gravitational field. Also, wavelength should increase at massive gravitational field ($\lambda \propto l_{yy}$), such that Gravitational Redshift can be observed.

X. Static Graviton Flux and Dynamic Graviton Flux

Static Graviton Flux is the graviton flux generated and emitted from parent object towards target object while both parent object and target project are stationary to each other based on Graviton Radiation and Contact Interaction Theory which results in Newton's Law of Universal Gravitation. On the other hand, Dynamic Graviton Flux is the additional graviton flux passing through the target object due to the relative motions of the target object with respect to the parent object. Dynamic graviton flux moves in the opposite direction to the motion of the target object with an intensity increases with the moving speed of the target object. Also, dynamic graviton fluxes are the net graviton fluxes caused by various motions of the target object.

Based on Gravity Affected Wu's Spacetime Shrinkage Theory, both Wu's Unit Length (diameter) and Wu's Unit Time (period) of Wu's Pairs in the target object increase with local gravitational field due to the bombardment of gravitons emitted from the parent objects, where the local gravitational field is proportional to the static graviton fluxes generated by the parent objects. However, under dynamic situation, graviton bombardment can be generated by both static graviton flux and dynamic graviton flux, such that they can both contribute to the changes of Wu's Unit Length and Wu's Unit Time of Wu's Pairs in the target object as well as the dimension (size) and duration (time) of the target object.

XI. Aether Inflow and Aether Wind versus Static and Dynamic Graviton Fluxes

Aether inflow is compatible to static graviton flux, because they both increase with gravitational field. On the other hand, aether wind is compatible to dynamic graviton flux, because they both are generated by the relative motions of the target object with respect to the parent object. However, aether inflow moves inwards from target object to parent object as is gravitational field, but static graviton flux emits outwards from parent object to target object. Also, aether wind moves along with the target object, but dynamic graviton flux moves against the target object. Furthermore, wavelength increases while light speed and time decrease with increasing aether inflow and aether wind, as that of static graviton flux and dynamic graviton flux.

Graviton has a string structure composed of Wu's Pairs and a gravitational force that is induced by Force of Creation. Also, graviton force can be propagated through graviton flux based on Graviton Radiation and Contact Interaction Theory. In addition, based on Gravity Affected Wu's Spacetime Shrinkage Theory, wavelength increases while light speed and time dilation decrease with increasing gravitational field. In contrast, the structure and the mechanisms of aether inflow and aether wind are unknown. In addition, how the time dilation and light speed are affected by aether inflow and aether wind is also not clear. Furthermore, it is doubtful that aether inflow moves at a much smaller speed than that of static graviton flux presumably at light speed.

XII.   Aether Inflow and Static Graviton Flux

Aether inflow and gravitational field are correlated to static graviton flux. Aether wind on the other hand is correlated to dynamic graviton flux, which is generated by the relative motion of the target object with respect to the parent object. In addition, according to Wu's Spacetime Shrinkage Theory, both dimension and duration of an object or event, as well as light speed and time dilation can be affected by local gravitational field (more correctly the total graviton fluxes), therefore, it is believed that the same effects can also apply to aether inflow and aether wind.
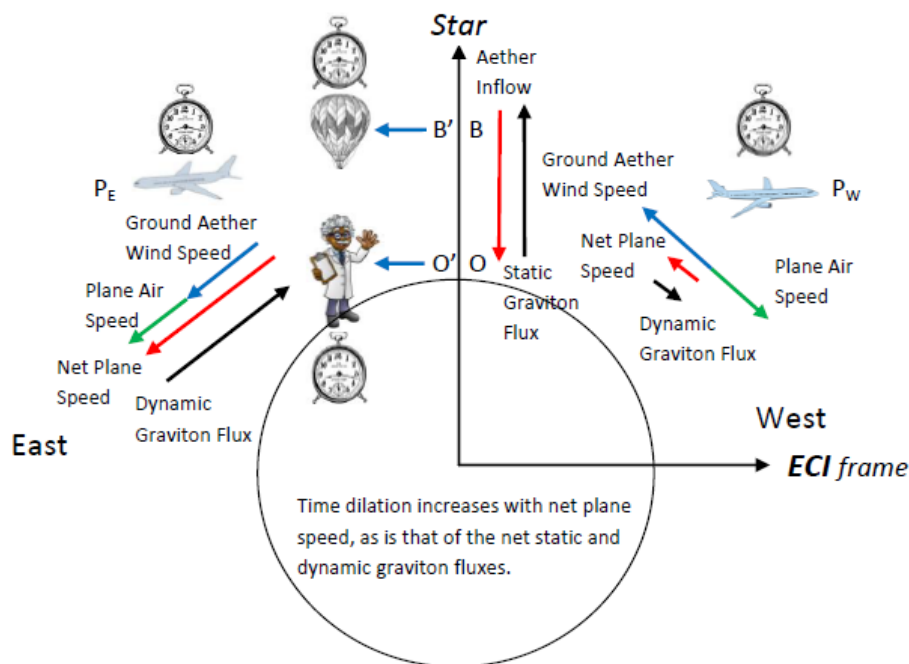

Fig. 4   The correlations between air flow, plane flow, aether wind, aether inflow, static graviton flux and dynamic graviton flux and their effects on time dilations.

Fig. 4 shows the correlation between aether inflow and static graviton flux, and their effects on time dilation. According to Cahill's analyses, aether inflow increases with gravitational field in the direction of attraction towards the center of parent object (Fig. 3), such as 420 km/s towards the center of the galaxy, 42 km/s towards the Sun and 11.2 km/s towards the Earth's center. In addition, based on Graviton Radiation and Contact Interaction Theory, static graviton flux also increases with gravitational field caused by the mass of parent object, but in the opposite direction which is apart from the center of parent object. In result, aether inflow and static graviton flux are very similar to each other, they both increase with gravitational field, except in opposite directions.

XIII.   Aether Wind and Dynamic Graviton Flux

Furthermore, in compliance with Wu's Spacetme Shrinkage Theory, time dilation can be generated by graviton bombardment and increases with the total amount of static graviton flux and dynamic graviton flux. Similarly, time dilation can also be generated by aether flows and increases with the total amount of aether inflow and aether wind, as that of static graviton flux and dynamic graviton flux.

Fig. 4 also shows the correlation between aether wind and dynamic graviton flux, and their effects on time dilation. With an assumption of linear relationships, based on Hafele-Keating experiment and Gravity Affected Wu's Spacetime Theory, the aether wind speed, total graviton fluxes and corresponding time dilation of an object at various locations and speeds can be calculated as follows:

Table 1.   Correlations between Aether Wind Speed, Total Graviton Fluxes and Time Dilation of an object at various locations and speeds

Location and Speed	Aether Wind Speed	Graviton Fluxes	Time Dilation
Experimental Data			
O (Stationary Origin)		g	
O'(Earth Origin)		g + x	
B (Stationary Balloon)		g + h	
B'(Earth Balloon)		(g + h) + x	
O' - O	0.32 km/s	(g + x) - g	
B' - B	0.32 km/s	(g + h + x) - (g + h)	
A_e - B'	0.23 km/s	y	
A_e (East Bound Flight)	0.55 km/s	(g + h) + x + y	
A_w (West Bound Flight)	0.09 km/s	(g + h) + x - y	
A_e - O'		h + y	-59 ns
A_w - O'		h - y	+273 ns
Calculated Results			
B' - O'	- 0.15 km/s	h = [(h + y) + (h - y)]/2	107 ns
A_e - B'	0.23 km/s	y = [(h + y) - (h - y)]/2	-166 ns
O' - O	0.32 km/s	x = y (0.32/0.23)	-231 ns
O_e - O_∞	11.2 km/s	g = x (11.2/0.32)	- 8,085 ns
O_s - O_∞	42 km/s	g_s = g (42/11.2)	-30,319 ns
O_m - O_∞	420 km/s	g_m = g (420/11.2)	-303,188 ns

Definitions of the terminologies based on ECI reference system:

O   Stationary object at the starting point of the flights.

O'   Earth object at the starting point of the flights following earth rotation.

B   Stationary balloon at the attitude of the flights above the starting point of the flights.

B'   Earth balloon at the attitude of the flights above the starting point of the flights following earth rotation.

A_e East bound flight at the attitude of the flights flowing east following earth rotation.

A_w West bound flight at the attitude of the flights flowing west against earth rotation.

g   Static graviton flux flowing through the stationary object at the starting point of the flights O and all the objects on or above earth such as O', B, B', A_e and A_w.

h   Static graviton flux flowing through the stationary balloon at the attitude of the flights above the starting point of the flights B and all the objects at the attitude of the flights such as B', A_e and A_w.

x   Dynamic graviton flux flowing through O', B', A_e, A_w and all the objects following earth rotation at a speed 32 km/s.

y   Dynamic graviton flux flowing through A_e and A_w at an airspeed 23 km/s.

A.   East Bound Flight A_e

$F_e = (g + h) + x + y$

$F_{o'} = g + x$

$F_e - F_{o'} = h + y$

Where F_e is the total fluxes flowing through the east bound flight A_e. $F_{o'}$ is the total fluxes flowing through O'.

B.   West Bound Flight A_w

$F_w = (g + h) + x - y$

$F_{o'} = g + x$

$F_w - F_{o'} = h - y$

Where F_w is the total fluxes flowing through the west bound flight A_w, $F_{o'}$ is the total fluxes flowing through O'. -y is the dynamic graviton flux flowing through the west bound flight A_w against earth rotation.

C.   Static graviton flux, aether inflow and time dilation caused by attitude

Because of the time dilation of east bound flight is -59 ns and the time dilation of west bound flight is 273 ns (Table 1), also the linear relationship between graviton flux and time dilation,

h + y = a (-59ns)

h - y = a (273 ns)

And a is the correlation constant between graviton flux and time dilation

Therefore,

h = a (107 ns)

Also,

107 km/s x (0.23 ns/-166 ns) = - 0.15 km/s

As a result, comparing B' to O', the time dilation caused by altitude of flight is 107 ns and the corresponding aether inflow is - 0.15 km/s (Table 1).

D.   Dynamic graviton flux and time dilation caused by airspeed of flight (23 km/s)

Because

h + y = a (-59ns)

h - y = a (273 ns)
Therefore,
y = a (-166 ns)
As a result, comparing A_e to B', the time dilation caused by airspeed of flight 23 km/s is -166 ns (Table 1).
E.   Dynamic graviton flux and time dilation caused by rotation speed of earth (0.32 km/s)
Because
x = y [(0.32 km/s)/(0.23 km/s)]
Therefore,
x = -166 ns [(0.32 km/s)/(0.23 km/s)] = -231 ns
As a result, comparing O' to O, the time dilation caused by rotation speed of earth 32 km/s is -231 ns (Table 1).
F.   Static graviton flux and time dilation caused by gravity of earth
Because
g = h [(11.2 km/s)/(-0.15 km/s)]
Therefore,
g = 107 ns [(11.2 km/s)/(-0.15 km/s)] = -8.0 μs
As a result, comparing earth to infinitive, the time dilation caused by aether inflow to the center of earth 11.2 km/s is -8.0 μs (Table 1).
G.   Static graviton flux and time dilation caused by gravity of sun
Because
g_s = g [(42 km/s)/(11.2 km/s)]
Therefore,
g_s = -8.0 μs [(42 km/s)/(11.2 km/s)]= -30.0 μs
As a result, comparing sun to infinitive, the time dilation caused by aether inflow to the center of sun 42 km/s is -30.0 μs (Table 1).
H.   Static graviton flux and time dilation caused by gravity of Milk Way
Because
g_m = g [(420 km/s)/(11.2 km/s)]
Therefore,
g_m = -8.0 μs [(420 km/s)/(11.2 km/s)]= -300.0 μs
As a result, comparing Milky Way to infinitive, the time dilation caused by aether inflow to the center of Milky Way 420 km/s is -300.0 μs (Table 1).

XIV.   Aether Wind and Light Speed
Because aether wind is caused by the rotation of planet, also aether wind is proportional to the dynamic graviton flux except in opposite direction, therefore, aether wind speed is the same as that of the rotation of planet, also dynamic graviton flux is proportional to aether wind speed except in opposite direction. In addition, according to Equation of Light Speed that Normal Light Speed is a vector summation of Absolute Light Speed and Inertia Light Speed, therefore, in an inertia system, Normal Light Speed is only dependent on the Absolute Light Speed. Furthermore, Absolute Light Speed is dependent on the gravitational field which is the total amount of net static and dynamic graviton fluxes. Because dynamic graviton flux is constant due to the constant rotation speed of the planet, therefore, Absolute Light Speed is only dependent on the static graviton flux of the planet. As a result, Normal Light Speed is dependent on the static graviton flux of the light source on the planet in an inertia system. Despite the changes of static graviton flux caused by the altitude of the object on a planet, Absolute Light speed of a planet is constant subject to the static graviton flux on the surface of the planet. This agrees with the claim made by C. C. Liu that light speed is constant due to the stationary aether on the planet.

XV.   Conclusion
It is proposed that Aethers, instead of light carriers, they are actually gravitons. Aether Inflow is the Static Graviton Flux passing through the target object emitted from the parent object. Aether Wind on the other hand, is the Dynamic Graviton Flux passing through the target object due to the relative motions of the target object with respect to the gravitational field. According to Hafele-Keating's experimental results, aether wind speeds and time dilations in both east bound and west bound air flights can be interpreted by Dynamic Graviton Fluxes. Also, complying with Reginald Cahill re-analyzed Dayton Miller's interferometer experimental results, aether inflow speeds and time dilations can be explained by Static Graviton Fluxes. Furthermore, based on Graviton Radiation and Contact Interaction Theory and Gravity Affected Wu's Spacetime Shrinkage Theory, corresponding aether flow speeds, graviton fluxes and time dilations can be calculated for various target objects at different locations.

[References]

[1]. Hafele, J. C.; Keating, R. E. (July 14, 1972). "Around-the-World Atomic Clocks: Predicted Relativistic Time Gains" (PDF). Science. 177 (4044): 166–168. Bibcode:1972Sci...177..166H. doi:10.1126/science.177.4044.166. PMID 17779917. S2CID 10067969.

[2]. Jeremy Fiennes, https://www.researchgate.net/publication/351391075_The_Aether-Gravity_relation.

[3]. Ching-Chuan Su, "Local-Ether Wave Equation of Electric Field and Interferometry Experiments with Moving Medium and Path" arXiv:physics/0208082v1 [physics.gen-ph] 23 Aug. 2002.

[4]. Reginald Cahill, https://www.academia.edu/23783359/ The_Dynamical_Velocity _Superposition_Effect_in_the_Quantum_Foam_InFlow_Theory_of_Gravity.

[5]. Edward T. H. Wu. "Gravitational Waves, Newton's Law of Universal Gravitation and Coulomb's Law of Electrical Forces Interpreted by Particle Radiation and Interaction Theory Based on Yangton & Yington Theory". American Journal of Modern Physics. Vol. 5, No. 2, 2016, pp. 20-24. doi:10.11648/j.ajmp.20160502.11.

[6]. Edward T. H. Wu. "Time, Space, Gravity and Spacetime Based on Yangton & Yington Theory, and Spacetime Shrinkage Versus Universe Expansion". American Journal of Modern Physics. Vol. 5, No. 4, 2016, pp. 58-64. doi: 10.11648/j.ajmp.20160504.13.

[7]. Edward T. H. Wu. "Special Relativity and Velocity Time Dilation – An Imagination or Just a Pure Mathematical Definition?." IOSR Journal of Applied Physics (IOSR-JAP), 13(2), 2021, pp. 38-43.

[8]. Edward T. H. Wu. "What If Light Speed Is Not Constant." IOSR Journal of Applied Physics (IOSR-JAP), 13(5), 2021, pp. 52-68.

[9]. Edward T. H. Wu, "Yangton and Yington–A Hypothetical Theory of Everything", Science Journal of Physics, Volume 2015, Article ID sjp-242, 6 Pages, 2015, doi: 10.7237/sjp/242.

[10]. Edward T. H. Wu. "Subatomic Particle Structures and Unified Field Theory Based on Yangton and Yington Hypothetical Theory". American Journal of Modern Physics. Vol. 4, No. 4, 2015, pp. 165-171. doi: 10.11648/j.ajmp. 20150404.13.

[11]. Edward T. H. Wu. "What Are the Truths of Gravity and General Relativity." IOSR Journal of Applied Physics (IOSR-JAP), 14(01), 2022, pp. 25-51.

[12]. Edward T. H. Wu" Five Principles of The Universe and the Correlations of Wu's Pairs and Force of Creation to String Theory and Unified Field Theory." IOSR Journal of Applied Physics (IOSR-JAP), vol. 10, no. 4, 2018, pp. 17-21.

[13]. Penzias, A. A.; Wilson, R. W. (1965). "A Measurement of Excess Antenna Temperature at 4080 Mc/s". The Astrophysical Journal. 142 (1): 419–421. Bibcode: 1965ApJ… 142..419P. doi:10.1086/148307.