

The O'Connell effect in eclipsing binaries explained by mass related light speed extinction distances (LASOF) of stars and even planets.

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Abstract.

If the orbits of close binary stars are circular, and the light speed is NOT influenced by the speed of the stars, we have to expect that the light curves are symmetrical between moments of eclipse or even conjunction.

However, This is mostly not the case and still an ongoing debate in astronomy and called the "O'Connell effect".

According to Quantum FFF Theory, however I assume that the local light speed around the stars is gravity related for a mass related distance from the source (star) called LASOF ellipsoid, (Local Asymmetrical Oscillating vacuum Frame)

As a result the so called O'Connell effect can easily be explained as a logic result of additional redshift or blueshift by the local lightspeed variation.

At the same time also planets should show such lightspeed extinction effects, which is already measured but not understood by I.I.Shapiro (see "radar astronomy" edition by Evans and Hagfors, 1964).

As a consequence, Einstein's Special relativity rules do not hold.

Introduction.

If we look at the apparent magnitude of eclipsing binary stars we can discriminate two equally spaced peak magnitudes at point 0.0, 0.5 and 1.0 (fig 1).

This is always explained by the fact that the smaller star is mostly hotter (brighter) and the result is that if the smaller star eclipses (behind the larger star) the minimum peak is larger than the following peak, which is called the Primary eclipse.

The secondary eclipse and minimal magnitude peak is of course related to the opposite eclipse situation, that the larger star is eclipsing behind the smaller star.

The O'Connell effect is related to this difference in the apparent magnitudes in between the two minimal peaks, which makes the figure asymmetric.. See Figure:1.

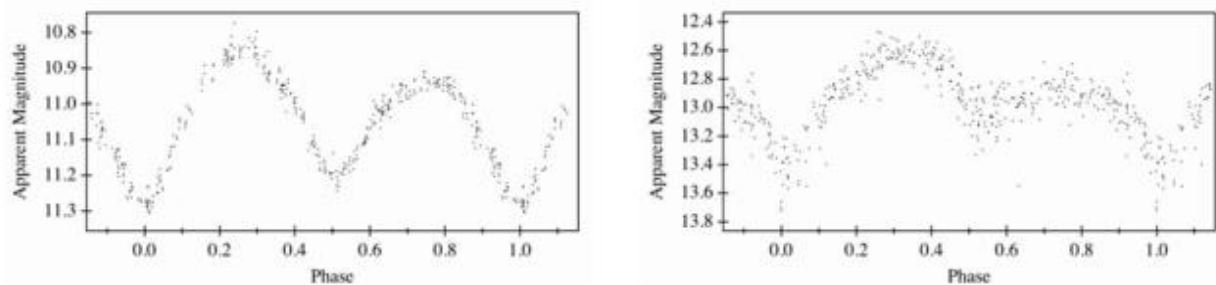
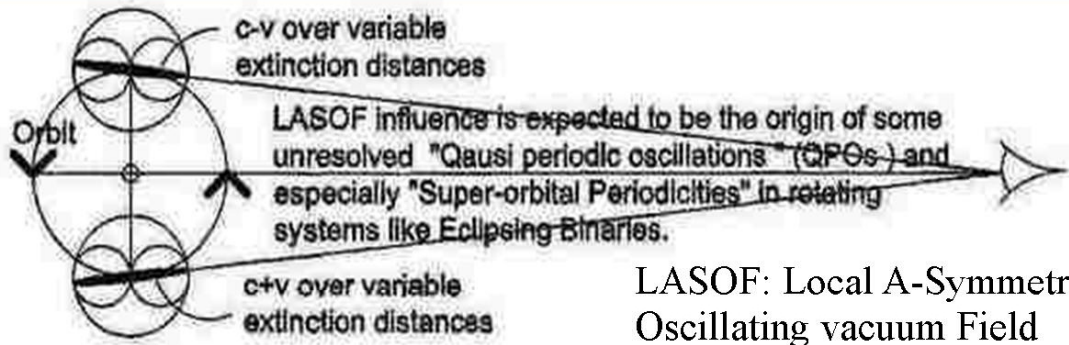


Figure 1 Two typical examples of apparent Magnitude curves of eclipsing binaries with asymmetric maxima and symmetric minima.

LASOF Lightspeed ($c\pm v$) extinction ellipsoid around massive objects as the origin of the anomalous Quasi Periodic Oscillations and the a-symmetric light curves called the O'Connell effect. According to Quantum FFF Theory.



Eclipsing Binary Stars are observed to be alternating red- or blueshifted with a wobbling redshift if passing in front of the other and called "QUASI PERIODIC OSCILLATIONS" (↘) Just like the passing of the SUN by VENUS (see I.I.Shapiro)

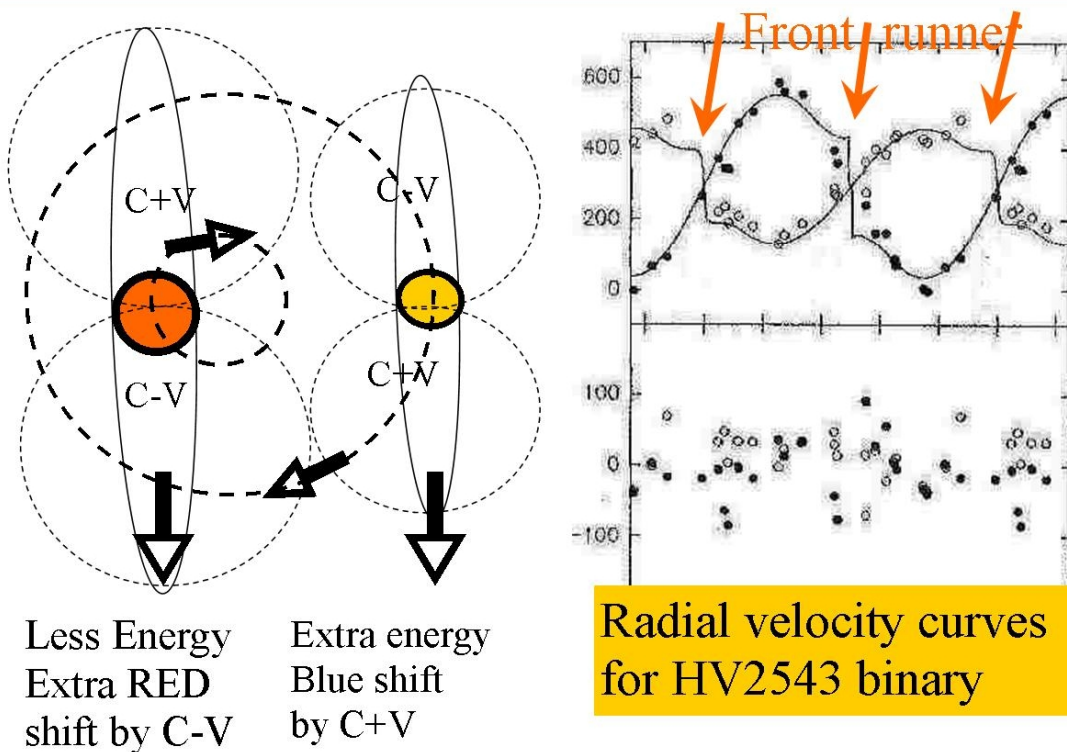


Figure 2, Quasi periodic oscillations in calculated velocities of both binary stars in HV 2543. Due to the LASOF effect it seems that the approaching star to the observer is accelerating before conjunction and decelerating after conjunction. Just as seems to be the case in figure 3 (Venus) The apparent magnitude difference is originated by the LASOF effect of the star in motion related to the observer also visible in the radial velocity curves of near binary stars and planets (Venus).

residuals. Preceding inferior conjunction the residuals are negative whereas following they become positive. This behavior is readily explained by Venus being ahead in its orbit relative to earth, since, in that case, it would be closer to earth than predicted before conjunction and further away afterwards in agreement with Fig. 3-4. Quantitatively, too, the amount seems to be in accord with the earlier determinations. Remarkably, although the residuals shown are enormous relative to the errors associated with some of the more accurate measurements, the discrepancy is caused almost entirely by an error of only 0.5 of heliocentric arc.

The fact that the residuals vanish near conjunction supports the trial values used for the AU and for the radius of Venus. Another interesting feature of the residuals shown in Fig. 3-4 is the appearance of short-period quasi-regular oscillations.

Earth-Venus Lightspeed (radar) anomalies (residuals) by I.I. Shapiro in Radar Astronomy 1964. Arrows A are pointing at the overlapping process of mutual LASOF areas of Venus and Earth. According to Quantum-FFF theory.

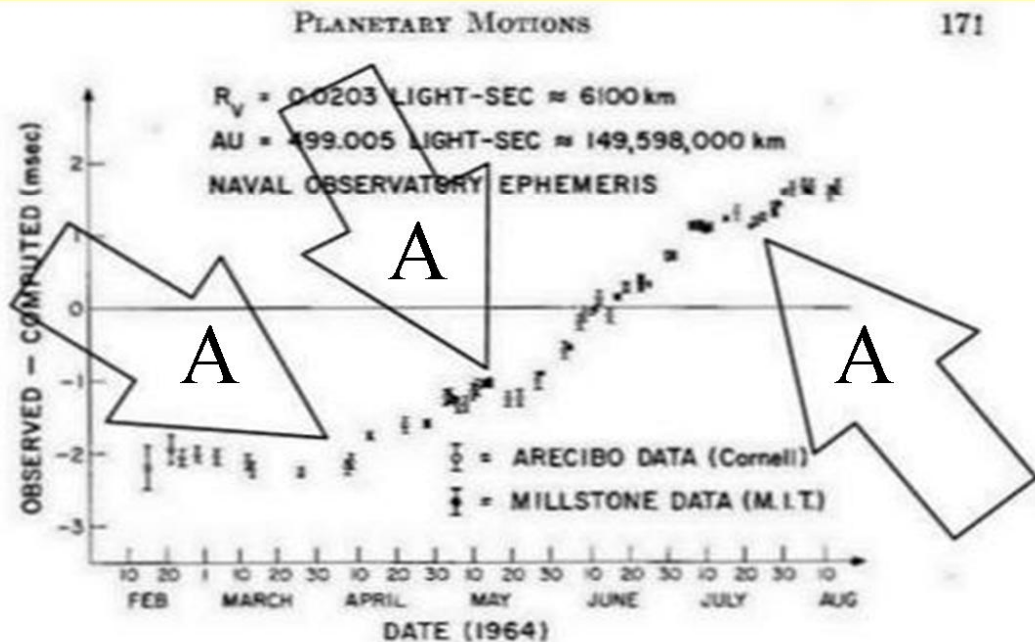


Fig. 3-4. Earth-Venus time-delay residuals resulting from comparison of radar observations with delays computed from U.S. Naval Observatory ephemeris, based on Fourier Series.

Figure 3 Quasi periodic oscillations measured by I.I. Shapiro for the time delay of the conjunction of Venus, earth and sun.

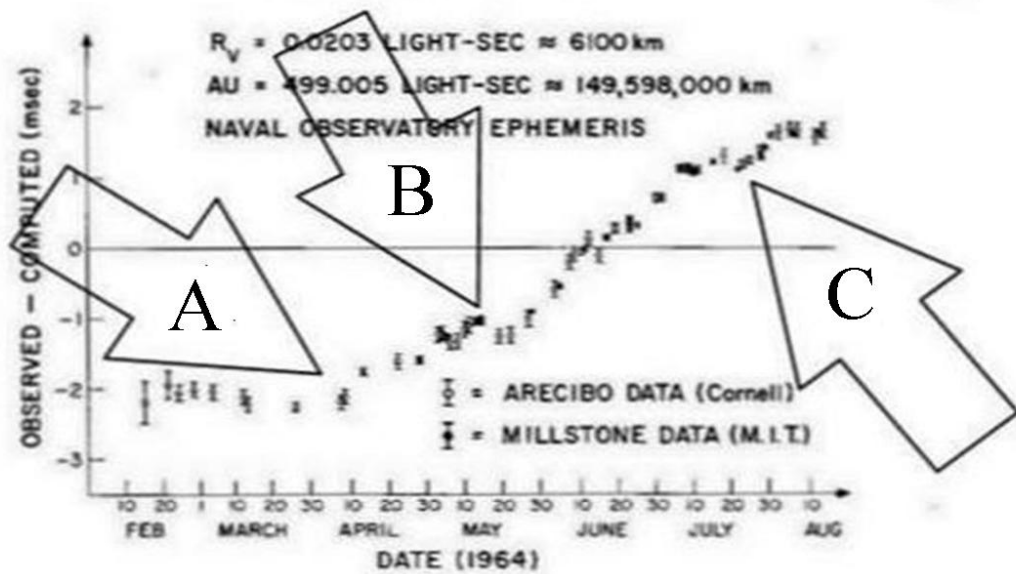


Fig. 3-4. Earth-Venus time-delay residuals resulting from comparison of radar observa-

Bumps in time delay are related to moments of overlap of both LASOFs (Venus and Earth): 10 April (A): start firm overlap, 10 May (B): start Earth LASOF overlap of planet Venus, 10 July (C): start exit overlap of planet Venus

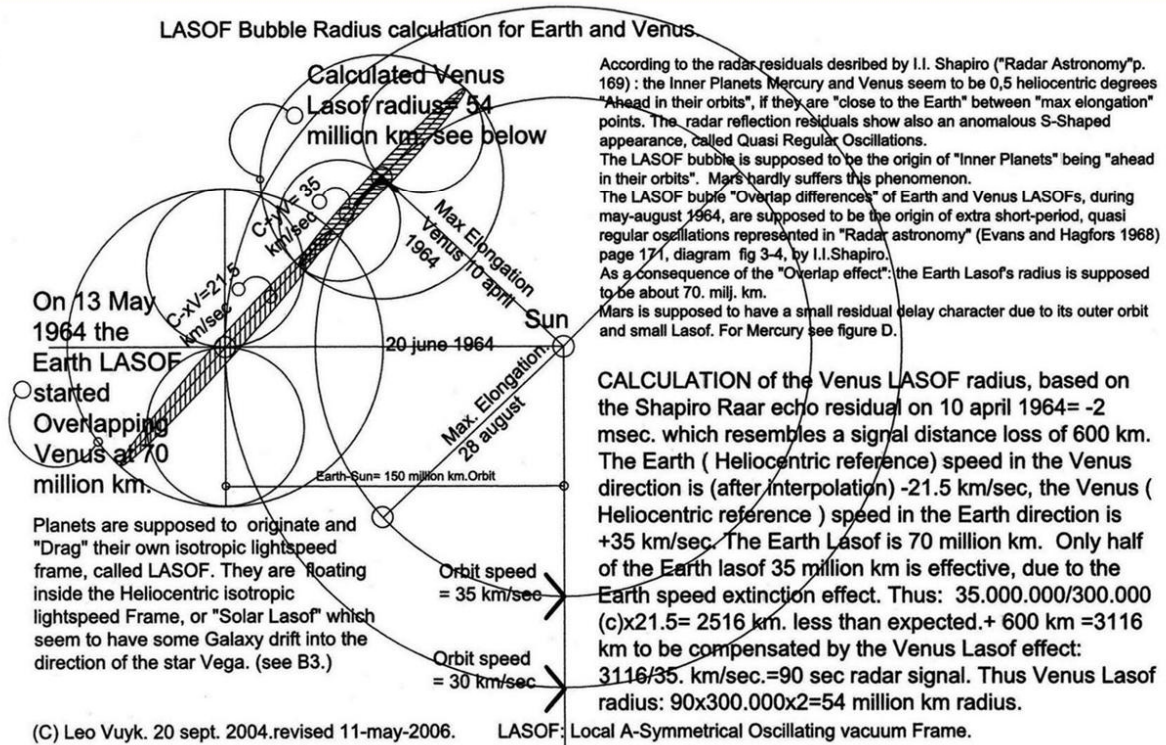
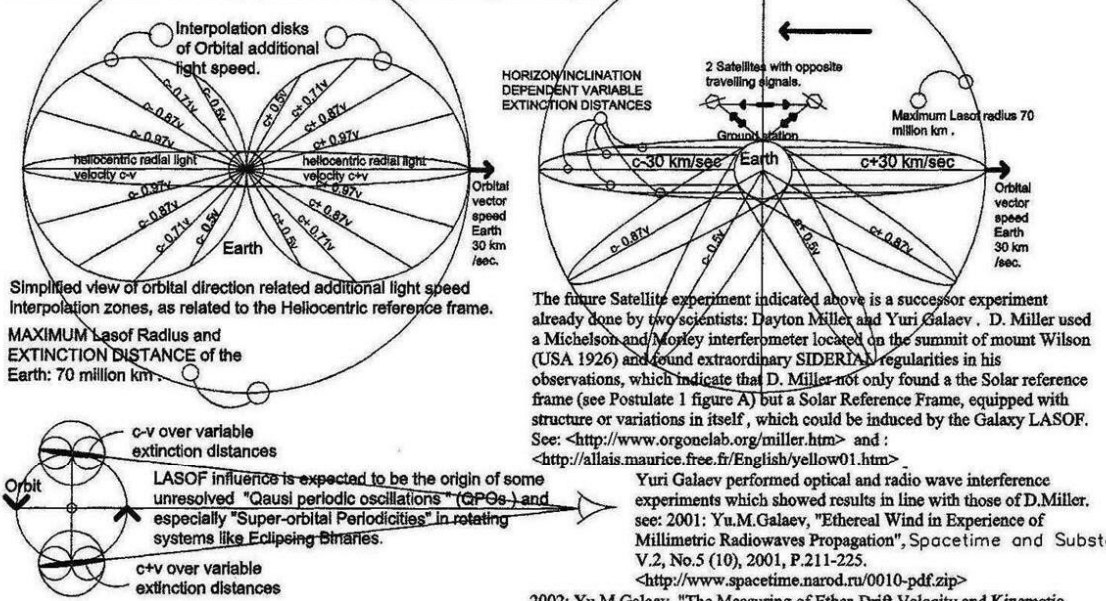


Figure 4, the effect of overlapping LASOFs of earth and venus.

Figure B1: GRAVITY DIRECTION DEPENDENT LIGHT SPEED FRAME DRAGGING by LASOF (Local Anti-Symmetrical Oscillating vacuum Frame). Planetary LASOF Bubble structure of the Earth with proposals for a future two way TRIANGLE satellite signal interference experiment and for "Quasi Periodic Oscillations" of rotating systems like Eclipsing Binaries. (see also fig. B2)



LASOF: Local Anti-Symmetrical Oscillating vacuum Frame.(C) Leo Vuyk, 20 sept.2004. revised: 14-jan-05.

The future Satellite experiment indicated above is a successor experiment already done by two scientists: Dayton Miller and Yuri Galaev . D. Miller used a Michelson and Morley interferometer located on the summit of mount Wilson (USA 1926) and found extraordinary SIDERIAN regularities in his observations, which indicate that D. Miller not only found a the Solar reference frame (see Postulate 1 figure A) but a Solar Reference Frame, equipped with structure or variations in itself, which could be induced by the Galaxy LASOF. See: <<http://www.orgonelab.org/miller.htm>> and : <<http://allais.maurice.free.fr/English/yellow01.htm>>

Yuri Galaev performed optical and radio wave interference experiments which showed results in line with those of D.Miller. see: 2001: Yu.M.Galaev, "Etheral Wind in Experience of Millimetric Radiowaves Propagation", Spacetime and Substance, V.2, No.5 (10), 2001, P.211-225. <<http://www.spacetime.narod.ru/0010-pdf.zip>>

2002: Yu.M.Galaev, "The Measuring of Ether-Drift Velocity and Kinematic Ether Viscosity Within Optical Waves Band", (in English) Spacetime and Substance Vol.3, No.5 (15), 2002, P.207-224. <<http://www.spacetime.narod.ru/0015-pdf.zip>>

SEE ALSO: "Local Ether Theory" C.C.Su, (Taiwan) <http://qem.ec.nthu.edu.tw/>

Gravity direction dependent Lightspeed Frame Dragging by the LASOF asymmetric Vacuum.

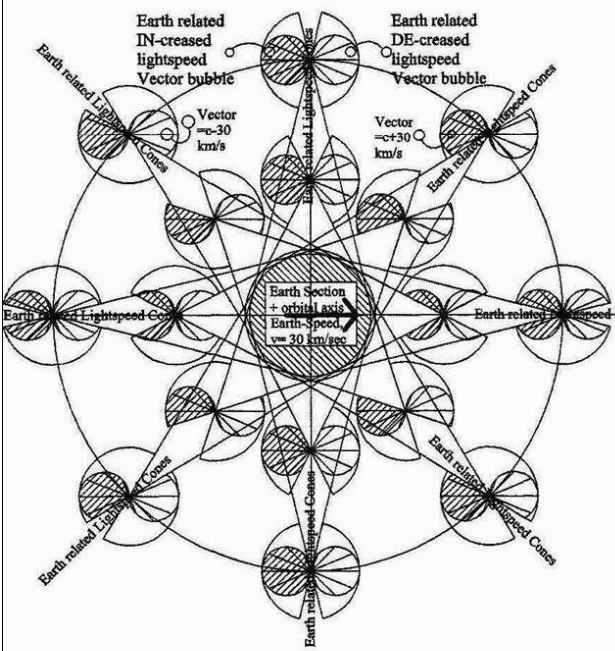


Figure B2. GRAVITY DIRECTION DEPENDENT LIGHT SPEED FRAME DRAGGING. date: 14-jan 2005. Author: Leo Vuyk. UNUSUAL variations in JASON-1 Satellite measurements are supposed to be an indication of this variable light speed. IF-----The speed of light in vacuum is dependent on the emitting body motion, only for a distance of extinction, which is limited by the state of motion, mass and density (or surface gravity) of the body. (Fig A, B1.) -----THEN as a secondary result: -----The speed of light emitted by Small Mass Bodies, -like GPS satellites- is in addition ONLY adapted to the Large Mass Body (Earth) Reference Frame, into- and away from the SURFACE of the Large Mass Body. (see also Fig. B3).

This should lead to: a Complex Geometry of Earth Inertial Frame related ADDITIONAL signal speed bubbles of signal emitting (GPS) Satellites at different altitudes from the Earth. (see Fig. B2).

This complex system (Fig. B2) is supposed to be the origin of the HIGH accuracy of GPS reading ONLY ON EARTH, even obtained for relatively "low horizon elevation" GPS signals. HOWEVER, this is in contrast with the VARIABLE accuracy of "onboard" SPACEBORN or AIRBORN GPS receivers, which are supposed to be vulnerable for LIGHT SPEED VARIATIONS of low horizon elevation GPS satellite signals. see also figure B1 and B3.

Only Earth's orbital speed influences are depicted in the figure. (B2) Possible additional Galaxy vacuum drift influences as measured by Dayton Miller (1926) and described in detail by Maurice Allais and James DeMeo, are not incorporated see Fig. B3. and Below. <http://www.orgonelab.org/MillerReich.htm> <http://allais.maurice.free.fr/English/media16-1.htm>

CONCLUSION: LEO Satellite "Onboard" Black Jack LOW ELEVATION GPS measurements should be ANALYZED ON ANOMALOUS DELAY in stead of PUT ASIDE as Outlier, to be able to determine GRAVITY DIRECTION DEPENDENT LIGHT SPEED FRAME DRAGGING.

Figure 5, the LASOF principle depicted .

Simplified view of Earth's orbital motion related additional and only ininitial light speeds, as experienced from the Heliocentric reference frame.

Interpolation disks (based on cosine function) of ininitial additional /subtractional light speeds (v) only for signals GENERATED on Earth.

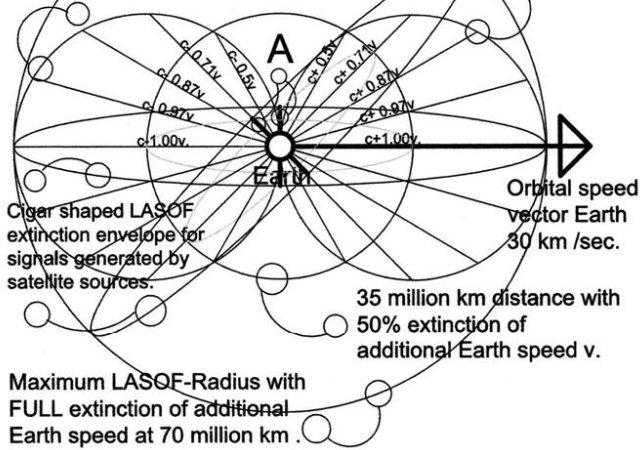


Figure B1a: GRAVITY DEPENDENT LIGHT SPEED FRAME DRAGGING by globular and cigar shaped LASOF (Local Anti-Symmetrical Oscillating vacuum Frame) lightspeed extinction envelopes. The globular LASOF is related to Earth bound sources. The cigar shaped LASOF is related to satellite sources. The major axis of the Cigar shaped LASOF envelopes, is supposed to coincide with the Satellite-Earth axis. Future satellite-GPS distance reading variations should give information about the minor axis (A) of the cigar shaped LASOF envelope.

Author: Leo Vuyk, 20 sept.2004. revised: 29-10-07.

Lightspeed variability between massive objects like Venus and the Earth by the LASOF Vacuum.

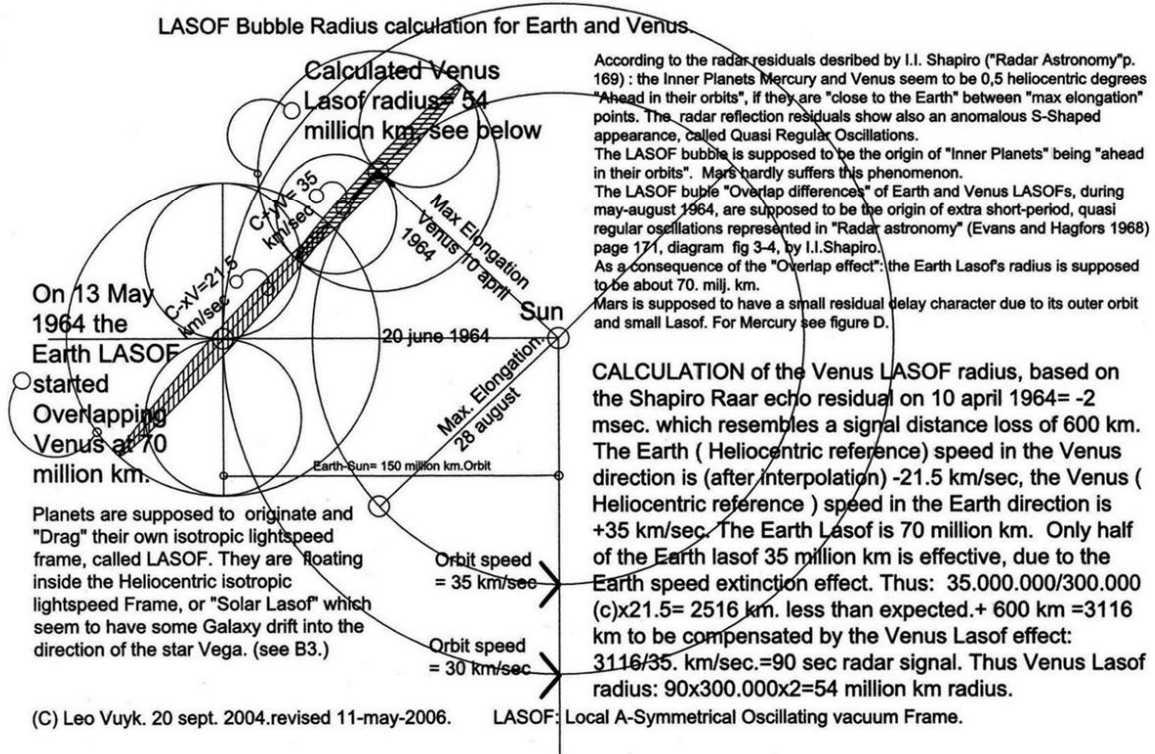


Figure 6, Simplified LASOF around the earth and the relation with Venus LASOF.

A clear example of GPS failure for sat-sat signals at higher altitudes (CHAMP: 430 km, GPS: 20.000km) Kinematic orbit solution comparison showing GPS data outliers up to 180 meters, (2x) during a CHAMP flight long 24 hours with 15 earth revolutions in 2003.

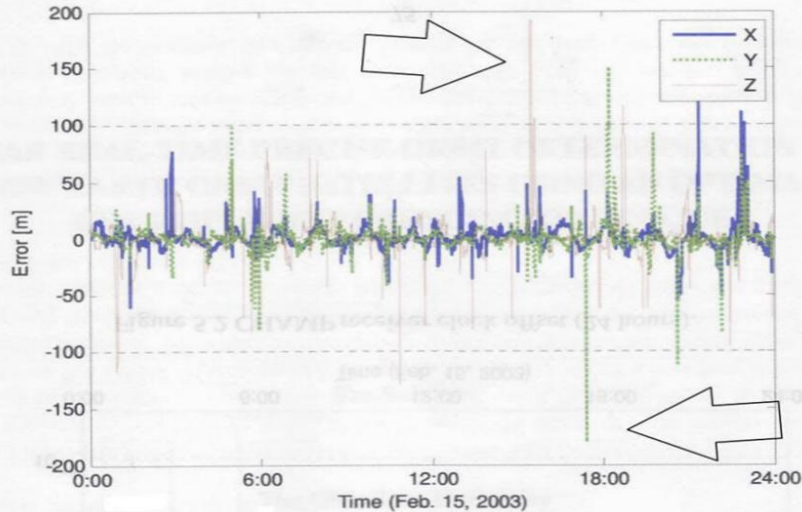


Figure 5.3 Comparison of the absolute kinematic orbit solution, w.r.t. RSO.

Estimation of the LASOF ellipsoid minor axis based on maximum outliers (180m) found in Champ satellite GPS distance measurements. According to Quantum FFF theory.

Calculation of the MINOR AXIS (11821 km) of the LASOF ellipsoid based on CHAMP max outliers of 180 m. measured in 2003. author: Leo Vuyk.

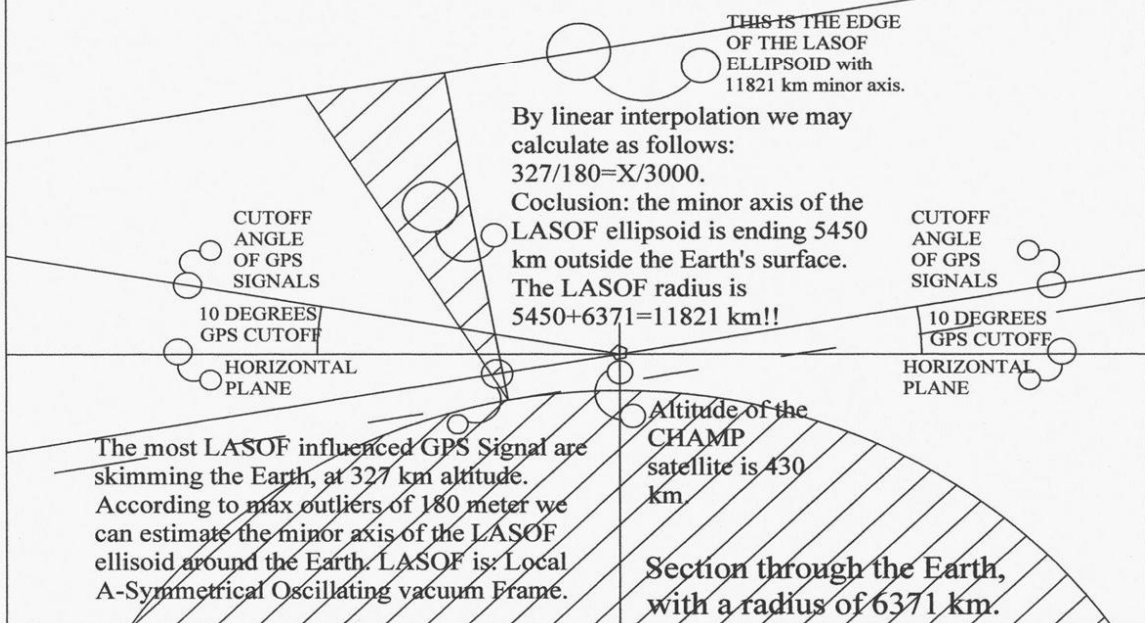
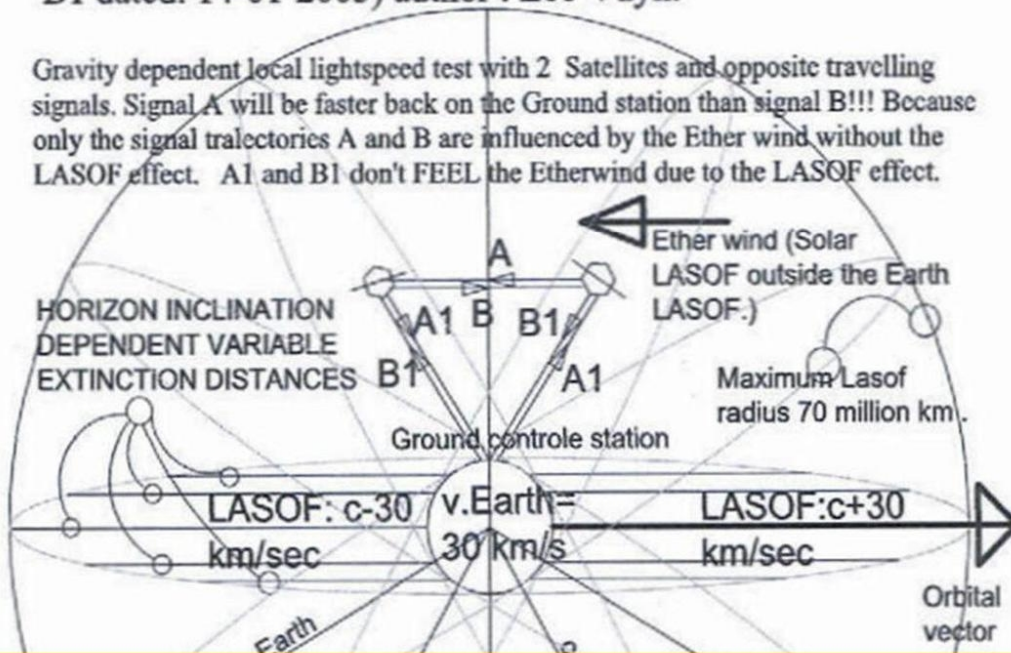


Figure 7 Additional LASOF effects.

GRAVITY DIRECTION DEPENDENT LIGHT SPEED FRAME DRAGGING by LASOF (Local Anti-Symmetrical Oscillating vacuum Frame). SIGAR shaped LASOF Bubble structure of the Earth with proposals for a future two way TRIANGLE satellite signal interference experiment. date: 9-11-2006 (this is an enlargement of figure B1 dated: 14-01-2005) author : Leo Vuyk.

Gravity dependent local lightspeed test with 2 Satellites and opposite travelling signals. Signal A will be faster back on the Ground station than signal B!!! Because only the signal tralectories A and B are influenced by the Ether wind without the LASOF effect. A1 and B1 don't FEEL the Etherwind due to the LASOF effect.



Two experiments to show mass related light-speed differnrces (Quantum FFF theory)

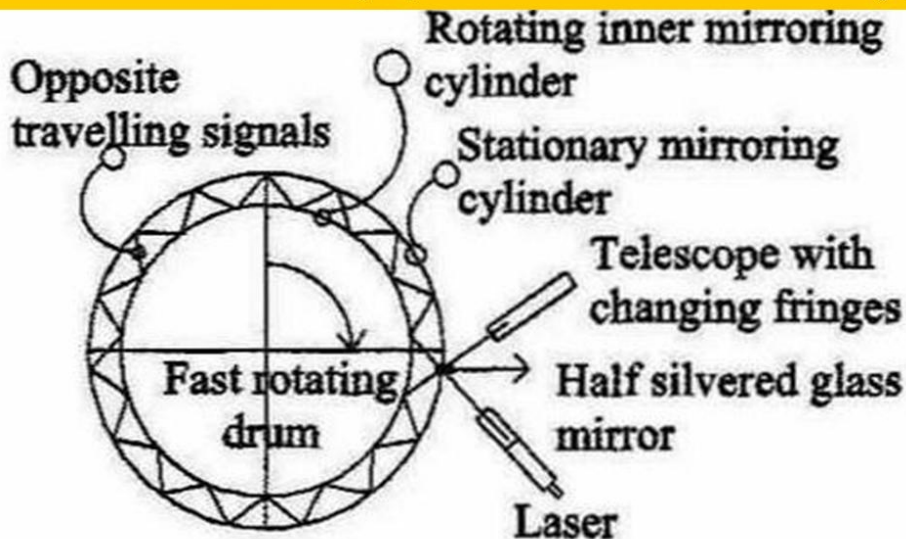
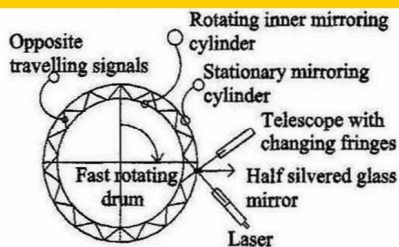


Figure 8, Possible LASOF experiments.

Mass related lightspeed differences by LASOF (Local A-Symmetric Oscillating Vacuum Frame) effects are origin of Gravity direction dependant lightspeed Frame dragging. (Quantum FFF theory)



The Babcock and Bergman test done in 1964, resulted in a positive lightspeed drag factor of only 0,7%, which could be translated in a drag extinction effect over less than 1 cm distance after signal passage through the fast moving glass window, See: Journal of the Optical Society of America Vol. 54, nr 2 page 147-151 Febr. 1964. Determination of the Constancy of the speed of Light by Babcock and Bergman.

If the Quantum Mechanical Vacuum structure is influenced over maximal 1 cm. by matter, as the Experiment done by Babcock and Bergman seems to indicate, then a fast moving mirror cylinder inside a stationary cylinder should influence the interference pattern produced inside the telescope much more, than the Babcock and Bergman's experiment did. We should get better results, if the distance between the inner and outer mirror cylinder is minimized and the number of lightpath reflections is maximized.

Postulate:

The Test results of Babcock and Bergman (J.O.S.A 1964) and the Radar echo delay residuals for Venus and Mercury, found by Irwin I. Shapiro in 1968 (see figures C and D) are reason to postulate in contrast with the second postulate of Einstein that,

-----The speed of light in vacuum is dependent on the emitting body motion, only for an extinction distance, which is limited by the state of motion, mass and density (surface gravity) of the body----- (see: fig.B1, C and D)

Explanation:

- 1: The Planetary distance of extinction is variable by the horizon inclination angle of the signal and limited by a complex, direction dependent multiple elliptical Local Vacuum Bubble, with a fixed maximum radius, located around- and dragged by the Planet. (see fig. B1, with the second test possibility by means of two satellites) The Radar Echo delay residuals for Venus and Mercury show by simple interpolation, that the maximum extinction for the Earth, Venus and Mercury should be respectively 70-, 54-, and 21 million kilometres. (see Poster figures: C and D)
- 2: The Planetary lightspeed extinction is a smooth direction dependent adaptation of the lightspeed into the isotropic light speed Vacuum Bubble or "Local Ether" around the Sun, which is expected to have a light speed isotropy system inside the Galaxy, different from planets.
- 3: There is no light speed adaptation, of signals travelling from Solar Light speed frame into Planetary Vacuum Bubble Frames.

The "Shapiro" Radar echo residuals for eclipsing Mercury and Venus, should have been different. ("Planetary Radar Astronomy": IEEE Spectrum, March 1968, p 70-79.)

- 4: The light speed experiment of Babcock and Bergman (J.O.S.A. 54,2, febr.1964) suggests, that the same system is active for small fast moving non-astronomical objects inside the Planetary Vacuum Bubble.
- 5: The signal speed accuracy of GPS satellites measured by Groundstations show, that the Solar Light Speed Frame has no influence on the speed of signals emitted by GPS satellites if the signals are travelling even with a minimal elevation degree with the horizon of the Groundstation.
- 6: The small effects measured in the well-known Michelson and Morley ether drift experiments on mountain summits, (made by Dayton Miller, in 1926) are supposed to be originated by the decreased -elliptical induced- planetary extinction distances, present at higher altitudes in horizontal directions. See: "Horizon inclination dependent variable extinction distances" on Poster figure B1.

Figure 9, Some early indications of a LASOF effect.

References:

[47] **The New God Particle and Free Will.**

Author: Leo Vuyk, **LuLu publishers, 2008.**

ISBN number 978-1-4092-1031-3

<http://www.lulu.com/spotlight/LeoVuyk>

[46] **Quantum FFF Theory is also published in the form of POSTERS at the Flickr site:**

<http://www.flickr.com/photos/93308747@N05/>

[45] **Numbered listing of Vixra essays by Leo Vuyk (see below).**

http://vixra.org/author/leo_vuyk

[44] viXra:1401.0115

Calabi Yau Shaped Double Fermion Spin States.

[43] viXra:1401.0071

Democratic Free Will in the Instant Entangled Multiverse.

[42] viXra:1312.0143

The Navel Cord Multiverse with Raspberry Shape.

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[36] viXra:1307.0068

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[35] viXra:1307.0067

Quantum Function Follows Form Theory, the Large Scale, Posters part 2.

[34] viXra:1306.0218

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25, viXra:1301.0050

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24, viXra:1210.0177

Instant Broglie Bohm Pilot Waves, the Origin of All Entanglement Effects in the Lab and Wavefunction Collapses in Our Universe as Related to Our Opposing Anti-Copy Universe(s) According to Quantum FFF Theory.
23, viXra:1209.0092

New Dark Matter Black Holes and a New Dark Energy Higgs Field, Lead to a Bouncing CP Symmetrical Multiverse, and New Experiments.
22, viXra:1209.0061

Birkeland Currents, Sunspots, Comets and Ball Lightning Originated by New Paradigm Dark Matter Black Holes.
21, viXra:1209.0030

Majorana and Sterile Neutrino Solutions in the Quantum-FFF Model.
20, viXra:1208.0031

Clumpy Dark Matter Around Dwarf Galaxies a Support for an Alternative Black Hole Theory According to the Quantum Function Follows Form Model.
19, viXra:1202.0091

Earth Magnetic Monopole Array Field Interaction with Cyclotron –Synchrotron Electrons and Muon Conversion Used for Levitation Systems.
18, viXra:1201.0092

Earth Magnetic Monopole Array Field Interaction with Cyclotron Electrons used for Levitation Systems.
17, viXra:1112.0065

LHC Signals Between 121-130 GeV Interpreted with Quantum-FFF Theory
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Reconciliation of QM and GR and the Need for a Pulsating Entangled CPT Symmetric Raspberry Shaped Multiverse.
15, viXra:1111.0061

Black Hole Horizon Curvature Dependent Balance Between Plasma Creation and e-e+ Annihilation in Quantum FFF Theory.
14, viXra:1108.0036

Artificial Ball Lightning Production and Exploitation Device for Zero Point Electric Energy Usage.
13, viXra:1108.0006

Mass in Motion in Quantum FFF Theory
12, viXra:1104.0083

Quantum FFF Theory in Posters.
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Ball Lightning, Micro Comets, Sprite-Fireballs and X-Ray/gamma Flashes According to Quantum FFF Theory.
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Stellar Anchor Black Holes as the Remnants of Former Herbig Haro Objects
9, viXra:1103.0097
ZPE Zero Point Energy Examples Around Black Holes.
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Funktion Follows Form, at the Quantum Scale and Beyond.
7, viXra:1103.0024
Quantum Gravity and Electro Magnetic Forces in FFF Theory
6, viXra:1103.0015
Wavefunction Collapse and Human Choice-Making Inside an Entangled Mirror Symmetrical
Multiverse.
5, viXra:1103.0011
An Alternative Black Hole, Provided with Entropy Decrease and Plasma Creation
4, viXra:1103.0002
3- Dimensional String Based Alternative Particles Model
3, viXra:1102.0056
Experiments to Determine the Mass Related Lightspeed Extinction Volume
2, viXra:1102.0054
Atomic Nuclear Geometry Based on Magic Number Logic.
1, viXra:1102.0052
Construction Principles for Chiral “atoms of Spacetime Geometry
