

## **Experiments to determine the mass related Lightspeed extinction volume around the Earth and around spinning objects in the Lab.**

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Abstract,

According to Einstein's relativity theory, is the speed of light for every observer the same in all reference frames.

However, there seem to be tiny differences in the lightspeed if we observe the outliers of satellite to satellite distance measurements.

At the same time we found tiny structural irregularities in Planetary radar-pulse reflection measurements, made by I.I. Shapiro in 1964, between the Earth and Venus and Mercury. Both observations support the idea of the existence of ellipsoidal lightspeed extinction volumes around massive objects like the earth.

As a consequence we propose new lightspeed experiments between the earth and dual satellites or dual balloons and even in the laboratory to support these lightspeed extinction ideas.

### **Experiment 1:**

#### **GPS failure for low elevation satellite-satellite signals at higher altitudes,**

is in addition to the second radar-pulse experiment, reason to suggest that the lightspeed is related to the masses (gravity) of objects like the earth and the sun, over long distances.

A closer look of those Sat-Sat outliers is needed, to support the mass /gravity relation of the lightspeed postulate and to get more certainty about the length of the minor axis of the LASOF ellipsoid around the earth.

LASOF= Local Anti-Symmetrical Oscillating Vacuum Frame.

Described in my book: The New God Particle and Free Will.

The determination of the major axis of the LASOF ellipsoid around the earth is described here in the second radar-pulse reflection experiment.

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.

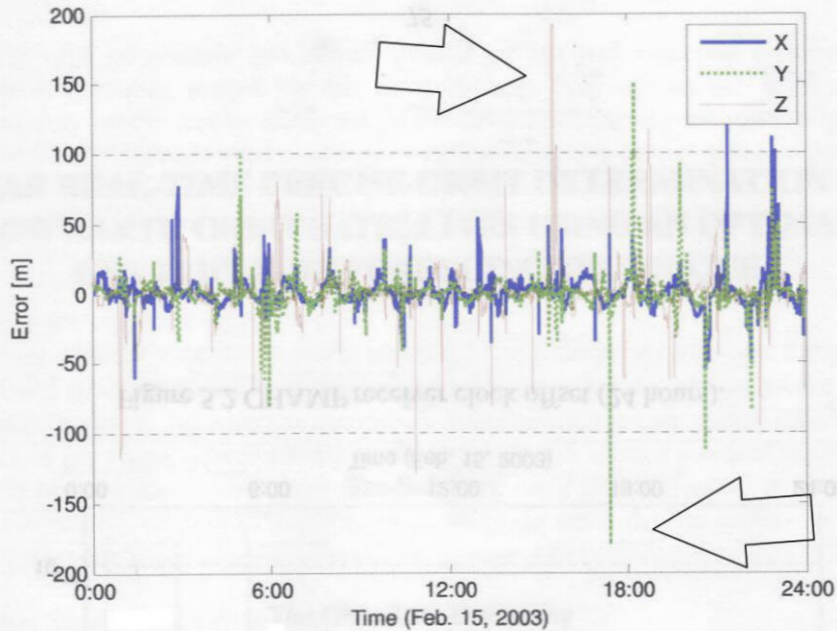


Figure 5.3 Comparison of the absolute kinematic orbit solution, w.r.t. RSO.

Figure 1, Outlier comparison of the absolute kinematic orbit solution, w.r.t. RSO. by: Tae Suk Bae, 2003, Ohio State university.

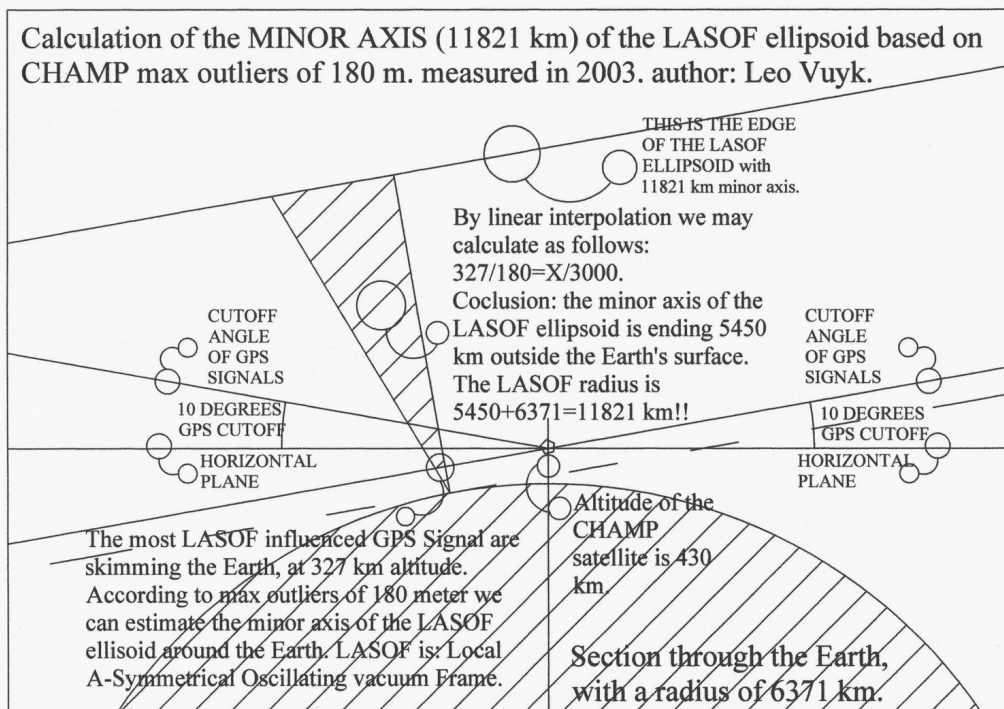


Figure 2, Calculation for the lightspeed drag extinction volume (LASOF) around the earth based on results mentioned in figure 1. ( 180 meter GPS outliers)

## Experiment 2.

Structural irregularities in radar reflection data for Planetary radar-pulse reflection measurements, made by I.I. Shapiro in 1964, between the Earth and Venus and Mercury.

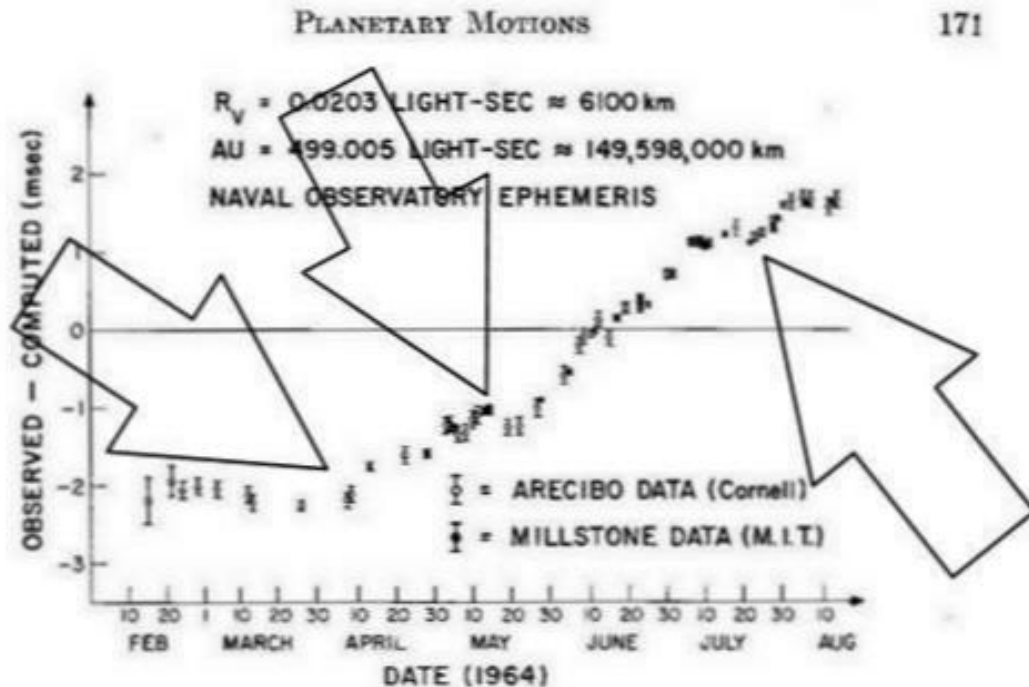


Fig. 3-4. Earth-Venus time-delay residuals resulting from comparison of radar observations with delays computed from U.S. Naval Observatory ephemeris, based on Fourier Series.

Figure 3, Arrows are pointing to the tiny irregularities or radar residuals.

Figure from I.I.Shapiro, in "Radar Astronomy" p. 171. by Evans and Hagfors, 1968.

**About the Time delay residuals in figure 3, I.I.Shapiro wrote:**

"Preceding inferior conjunction, the residuals are negative, whereas following they become positive.

This behaviour is readily explained by Venus being ahead of its orbit relative to earth, since in that case, it would be closer to earth than predicted before conjunction and further away (from earth) afterwards in agreement with figure 3-4.

Quantitatively too, the amount seems to be in accord with the earlier determinations.

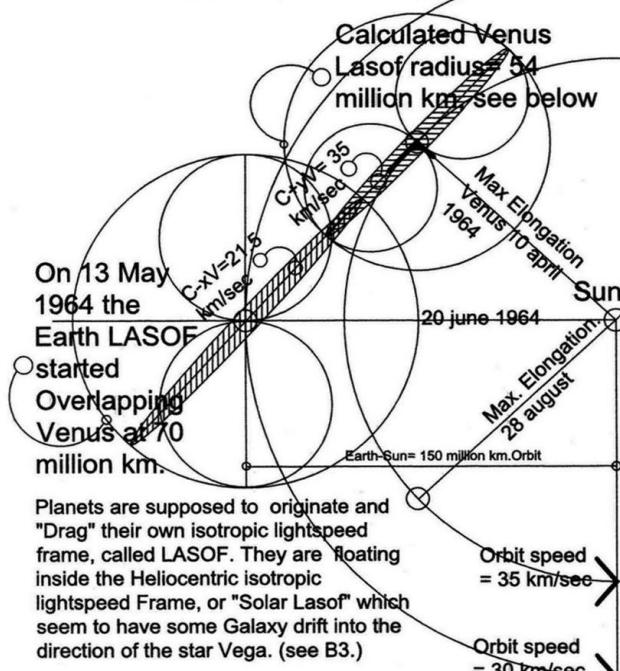
Remarkably although the residuals shown are **enormous** relative to errors associated with some of the more accurate measurements."

My conclusion: Shapiro did NOT account for the possibility that he measured the mutual influences of the both LASOF lightspeed ellipsoids of the Earth and Venus, as we do in figure 4.

In figure 4, calculations are made which tell us that the major axes of the LASOF ellipsoids for the Earth and Venus are estimated to be respectively 70 and 54 million kilometres.

Future measurements however will be able to give these numbers a more accurate foundation, because only then we are perhaps able to calculate more intensely focussed on this subject.

LASOF Bubble Radius calculation for Earth and Venus

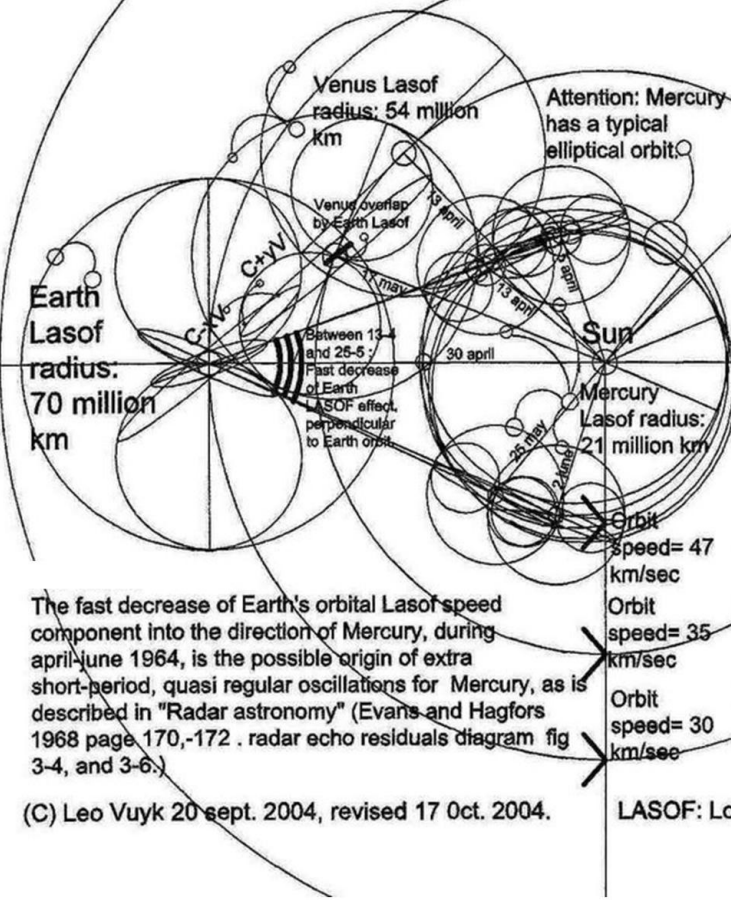


According to the radar residuals described by I.I. Shapiro ("Radar Astronomy" p. 169) : the Inner Planets Mercury and Venus seem to be 0,5 heliocentric degrees "Ahead in their orbits", if they are "close to the Earth" between "max elongation" points. The radar reflection residuals show also an anomalous S-Shaped appearance, called Quasi Regular Oscillations. The LASOF bubble is supposed to be the origin of "Inner Planets" being "ahead in their orbits". Mars hardly suffers this phenomenon. The LASOF bubble "Overlap differences" of Earth and Venus LASOFs, during may-august 1964, are supposed to be the origin of extra short-period, quasi regular oscillations represented in "Radar astronomy" (Evans and Hagfors 1968) page 171, diagram fig 3-4, by I.I. Shapiro. As a consequence of the "Overlap effect", the Earth Lasof's radius is supposed to be about 70. milj. km. Mars is supposed to have a small residual delay character due to its outer orbit and small Lasof. For Mercury see figure D.

CALCULATION of the Venus LASOF radius, based on the Shapiro Raar echo residual on 10 april 1964= -2 msec. which resembles a signal distance loss of 600 km. The Earth ( Heliocentric reference) speed in the Venus direction is (after interpolation) -21.5 km/sec, the Venus ( Heliocentric reference ) speed in the Earth direction is +35 km/sec. The Earth Lasof is 70 million km. Only half of the Earth lasof 35 million km is effective, due to the Earth speed extinction effect. Thus:  $35.000.000/300.000 (c) \times 21.5 = 2516$  km. less than expected. + 600 km = 3116 km to be compensated by the Venus Lasof effect:  $3116/35. \text{ km/sec.} = 90$  sec radar signal. Thus Venus Lasof radius:  $90 \times 300.000 \times 2 = 54$  million km radius.

(C) Leo Vuyk. 20 sept. 2004. revised 11-may-2006. LASOF: Local A-Symmetrical Oscillating vacuum Frame.

Figure 4, Major ellipsoidal axis calculation for the Earth and Venus LASOF bubble , based on I.I.Shapiro's radar residuals, see figure 3.



CALCULATION of the Mercury LASOF radius, based on the Shapiro Radar echo residual on 5-13 april 1964= -2 msec. which resembles a signal distance loss of 600 km. The Earth speed in the Mercury direction is (after interpolation) -10 km/sec. The Mercury speed in the Earth direction is +47 km/sec. The Earth Lasof is 70 million km. Only half of the Earth lasof 35 million km is effective, due to the Earth speed extinction effect. Thus:  $35/0.3 \times 10 = 1050$  km. less than expected. + 600 km = 1650 km to be compensated by the Mercury Lasof effect:  $1650/47 = 35$  sec radar return signal. Thus Mercury Lasof radius:  $35 \times 0.3 \times 2 = 21$  million km radius. The Lasof Calculation for 25-may is different but has the same result if the 3D inclination of the Mercury orbital trajectory is accountet for.

The Lasof Radius ratios of Mercury, Venus and Earth (21-54-70 or 1-2,6-3,3) can not be related to the Mass ratios: (1-15-18) or Radius ratios (1-2,5-2,7) of the Planets. Therefore it is supposed that there is a complicated Lasof radius relation mixture between Planetary-diameter and Planetary mass or Density. Had the Lasof only been mass dependent, then the extra residual radar echo of Mercury would have been fully canceled out due to the small Mercury mass.

The fast decrease of Earth's orbital Lasof speed component into the direction of Mercury, during april June 1964, is the possible origin of extra short-period, quasi regular oscillations for Mercury, as is described in "Radar astronomy" (Evans and Hagfors 1968 page 170,-172 . radar echo residuals diagram fig 3-4, and 3-6.)

(C) Leo Vuyk 20 sept. 2004, revised 17 Oct. 2004. LASOF: Local A-Symmetrical Oscillating vacuum Frame.

Figure 5, Major ellipsoidal axis calculation for the Earth and Mercury LASOF bubble , based on I.I.Shapiro's radar residuals, see figure 3.



### Experiment 3,

Opposite running (laser) signal interference experiment between earth and two satellites, to measure the LASOF influence and ether wind on the lightspeed.

Only the signals A and B are assumed to be influenced by the ether wind, induced by the earth rotation of 30 km/sec around the sun.

Signals A1 and B1 are not influenced as we know from the accuracy of the GPS system, if the GPS signals are directed to the Earth surface and influenced by gravity dragging.

This experiment could even be able to measure tiny lightspeed influences of the Galaxy.

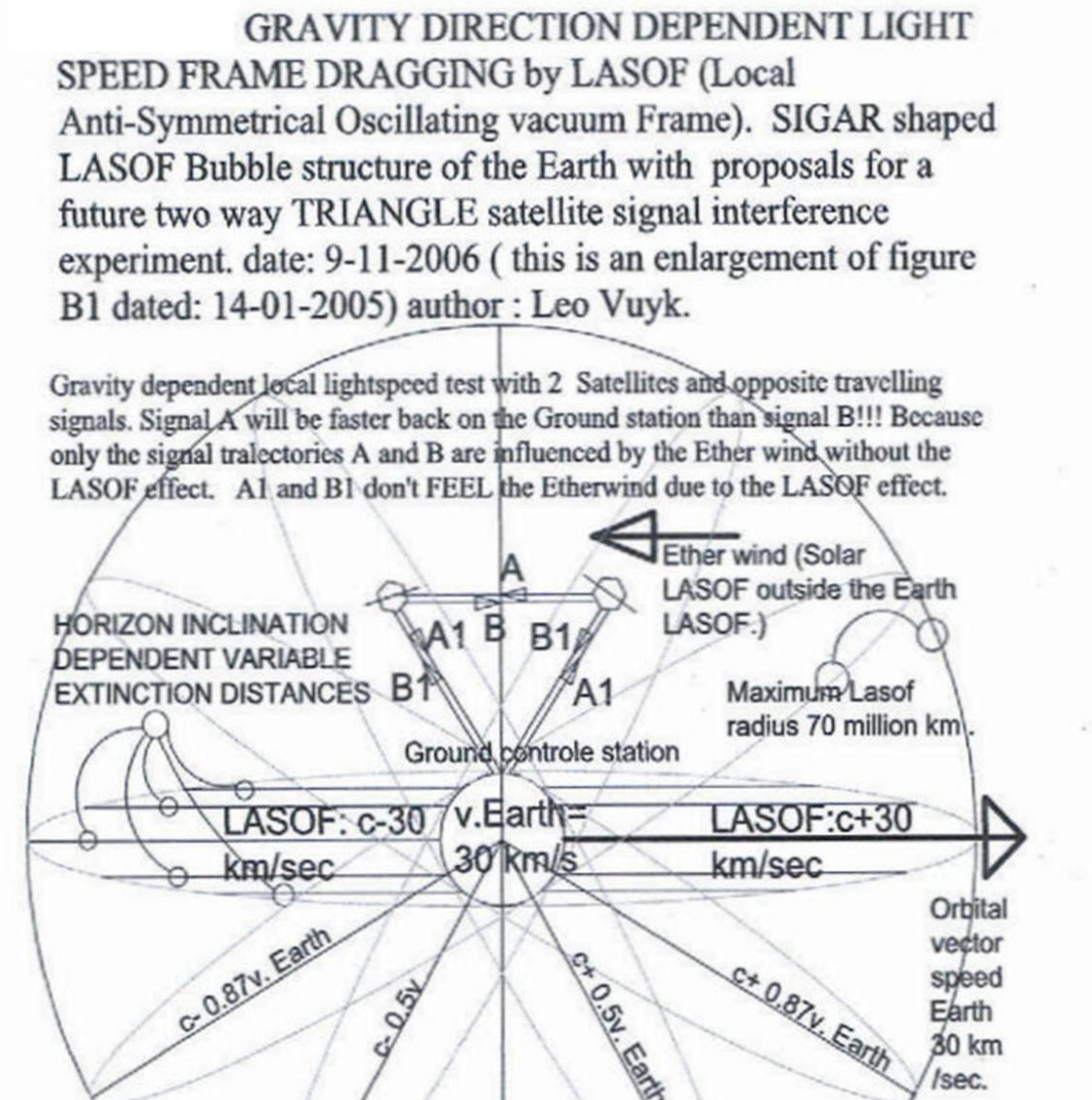


Figure 6, Orbital speed of the earth around the sun is 30 km/sec.

#### Experiment 4,

Opposite running (laser) signal interference variation, between a fast rotating mirror cylinder and one coaxial mirror cylinder that is in fixed position to the laboratory.

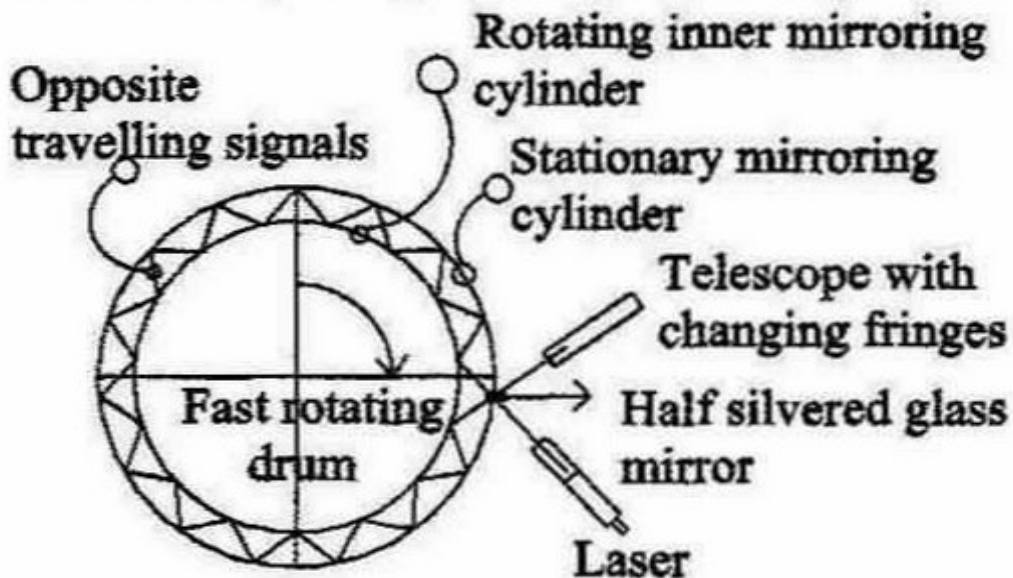


Figure 7, Opposite travelling signal interference variation inside two mirror cylinders.

If the Local Oscillating Vacuum Frame is influenced by the cylinder mass, even over short distances, (e.g. 1 cm) then we may expect a so called LASOF interference effect over short distances (Local Anti Symmetrical Oscillating Vacuum Frame) related to fast rotating cylinders.

The interference pattern variation produced inside the telescope, (figure 7) should have a direct relation to the speed of the rotating cylinder.

In 1964, Babcock and Bergman published a comparable experiment with promising results, in J.O.S.A Vol.54, nr.2.

## References,

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3, The New God Particle and Free Will.

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