

Recent Findings on Gravitational Lensing and on the Shapiro Effect

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Dear Fellow Researchers of the Natural Philosophy Alliance:

There is now overwhelming evidence that the mainstream understanding of the direct interaction between **gravitation** and **electromagnetism** is completely off-base and is counter to the modern astrophysical observations. For the sake of the progress of science and its teaching, the publications and the lectures pertaining to this subject matter seriously need to be brought into conformity with sound principles of Physics and the observational evidence.

SIGNIFICANT FINDINGS

Gauss's law for gravity supported by nearly a century of intense observational evidence reveals that gravitational light bending in empty vacuum space does **not** take place. The star filled skies should be filled with images of the Einstein rings. ***Of course, this assumes the validity of the gravitational light bending rule of General Relativity and that it also applies directly to the deep empty vacuum space free of plasma atmospheres.*** The burning question is: Where are the Einstein rings? The answer to this question may be a direct consequence of the mean astronomical distances between the stars which forces the **impact parameters** of any theoretically bent light ray to lie well beyond the plasma atmosphere of the gravitating stellar mass. This is supported by a clear lack of observational evidence for the presence of Einstein rings or gravitational light bending effects on light rays at large impact parameters as is predicted by the gravitational light bending rule of General Relativity.

Findings reveal:

1) Important Fundamentals in Mathematical Physics pertaining to the subject matter of Gravitational Lensing have been either ignored or seriously misapplied in the literature and in the lectures.

2) A consequence of the failed attempts to detect **Macro Lensing** as predicted by General Relativity, astrophysical observations on gravitational light bending and a host of other lensing events have been incorrectly interpreted or incorrectly labelled as **Micro Lensing**.

The Past Century of Research convincingly reveals:

- a clear lack of evidence for gravitational lensing in the vacuum space, just a fraction of a solar radius above the solar plasma rim; straightforwardly revealed by applying the Gauss' law of gravity to the solar mass

- a lack of evidence for Einstein rings in a sky of countless numbers of stars, where the candidates for gravitational lenses and the light sources are by good chance co-linearly aligned with the earth based observer
- a lack of evidence for gravitational lensing in the time resolved images of the stars orbiting about presumably a black hole at the site of Sagittarius A*

Abstract

Findings show that the rays of star light are lensed primarily in the plasma rim of the sun and hardly in the vacuum space just slightly above the plasma rim. The thin plasma atmosphere of the sun represents a clear example of an indirect interaction involving an interfering plasma medium between the gravitational field of the sun and the rays of light from the stars. Since the lower boundary of this vacuum space is only a short distance just above the solar plasma rim, it is exposed to virtually the same gravitational field. The thin plasma atmosphere of the sun appears to represent an indirect interaction involving an interfering plasma medium between the gravitational field of the sun and the rays of star light. An application of Gauss' law clearly shows that, if the light bending rule of General Relativity were valid, then a gravitational light bending effect due to the gravitational field of the sun should be easily detectable with current technical means in Astrophysics at analytical Gaussian spherical surfaces of multiple solar radii, nR , where R is one solar radius and wherein the solar mass M is concentrically inclosed. Since the light bending rule of General Relativity is essentially a $1/R$ effect, modern technical means should permit an easily detectable light bending effect of at least $1/2$ of 1.75 arcsec, $1/3$ of 1.75 arcsec, ..., $1/n$ of 1.75 arcsec at multiple impact parameters of $2R$, $3R$, ..., nR , respectively. This of course assumes the validity of the gravitational light bending rule of General Relativity. More importantly, the very same light bending equation obtained by General Relativity was derived from pure classical assumptions of a minimum energy path of a light ray in the plasma rim, exposed to the gravitational gradient field of the sun. The results is found to be totally independent of the frequency of the gravitationally bent light ray. An intense search of the star filled skies reveals a clear lack of lensing among the countless numbers of stars, where there are many candidates for gravitational lensing according to the assumptions of General Relativity. Assuming the validity of the light bending rule of General Relativity, the sky should be filled with images of Einstein rings. Moreover, events taking place at the center of our galaxy, a region known as Sagittarius A*, thought to contain a super massive black hole, should have revealed observational evidence for gravitational lensing. Nevertheless, a clear lack of evidence for gravitational lensing is revealed in the time resolved images of the rapidly moving stellar objects orbiting about Sagittarius A*.

Kurz auf Deutsch zusammengefaßt

Es wurden jahrzehntelang die Gravitationslinsenereignisse nur in dünnen Schichten der Plasma-Atmosphäre der Sonne beobachtet, nicht im Vakuumraum einer Bruchteil des Sonnenradius über die Sonnenoberfläche. Alle Beobachtungen der bekannten Gravitationslinsenereignisse stehen im guten Einklang mit einer indirekten Wechselwirkung zwischen Gravitation und

Elektromagnetismus. Die indirekten Wechselwirkungen werden aufgrund der Wirkung eines Interferenzmediums verstanden. Die direkten Wechselwirkungen werden in einem interferenzfreien Vakuumraum gedacht. Mit neuen astrophysikalischen Beobachtungsmöglichkeiten kann derzeit kein klarer Unterschied zwischen einer direkten Wechselwirkung und einer indirekten Wechselwirkung gemacht werden. Die dünnen Schichten der Plasma-Atmosphäre der Sonne stellen solch eine indirekte Wechselwirkung zwischen der Gravitation der Sonne und den Lichtstrahlen der Sterne dar. Es gibt überzeugende astrophysikalische Beweise, dass eine direkte Wechselwirkung zwischen Gravitation und elektromagnetischen Wellen noch nie beobachtet worden ist. Es wurden historisch immer nur die Gravitationslinsenereignisse in dünnen Schichten der Plasma-Atmosphäre der Sonne beobachtet, nicht im Vakuumraum weit über die Oberfläche der Sonne. Eine Anwendung des Gauß-Gesetzes der Gravitation zeigt deutlich, daß, wenn nur das Gravitationslichtablenkungsprinzip der Allgemeinen Relativitätstheorie gültig wäre, dann sollte das Gravitationslichtablenkungseffekt durch die Gravitationsfeld der Sonne mit modernen technischen Mittel der Astrophysik an analytischen Gauß-Sphären mehrerer Sonnenradien leicht detektierbar sein. Ein und dieselbe Gravitationslichtablenkungsgleichung der Allgemeinen Relativitätstheorie wurde mit einer Anwendung rein klassischer Annahme von einer minimalen Energie-Weg eines Lichtstrahls in der Plasmaatmosphäre der Sonne unter Einfluss des Gradientfeldes der Sonne abgeleitet. Überraschend wurde diese Ergebnis als Frequenzunabhängig gefunden.

Un breve resumen

Las pruebas de observaciones recientes indican que los fundamentos importantes de la física matemática y las observaciones astrofísicas han sido aplicadas incorrectamente a los llamados lentes gravitacionales. Desde su descubrimiento, los investigadores asumieron que los lentes gravitacionales son debido a una interacción directa entre la luz y la gravedad. Históricamente, los astrónomos han observado que los rayos de luz de las estrellas que pasan cerca del borde del sol se desvían siempre de sus trayectorias lineares. Evidencias nuevas demuestran que todas las observaciones astronómicas sobre los efectos de los lentes gravitacionales de los rayos de luz han sido debido a una interacción indirecta entre la luz y la gravedad y no debido a una interacción directa. El borde fino del plasma del sol representa una interacción indirecta entre el campo gravitacional del sol y los rayos de la luz de las estrellas. La evidencia astrofísica convincentemente demuestra que se observa solo una interacción indirecta entre la luz y la gravedad. Esta desviación en la dirección de propagación de la luz se explica por medio de una interacción electrostática con el borde fino del plasma del sol. El plasma mismo tiene un gradiente espacial característico debido al gradiente del campo gravitacional del sol. Aparentemente, una interacción directa entre el campo gravitacional del sol y los rayos de luz en el espacio vacío cerca del sol no ocurre. La astrofísica moderna nos permite muy fácilmente detectar en el espacio vacío a largas distancias de múltiples radios solares encima del borde fino del plasma solar los efectos de un lente gravitacional según la teoría de relatividad general . En las superficies de las esferas Gaussianas de radios $2R$, $3R$, $4R$ y $5R$, respectivamente, un efecto de por lo menos la mitad, una

tercera, una cuarta o una quinta parte del efecto observado en el plasma solar debería ser observable. En realidad, las nuevas evidencias muestran que en el espacio a poca distancia encima de la superficie del sol el lente gravitacional no tiene lugar. La ley de la superficie de la esfera Gaussiana se aplica directamente a la masa M del sol que está encerrado por las esferas Gaussianas de radios 2R, 3R, 4R y 5R. El efecto gravitacional de un rayo de luz en uno de los parámetros de impacto 2R, 3R, 4R y 5R depende teóricamente solo en la cantidad de masa M del sol que está encerrada por la correspondiente esfera analítica Gaussiana y cambia según el factor 1/2, 1/3, 1/4 y 1/5 respectivamente. Aparentemente, las observaciones astrofísicas nuevas no son consistentes con los llamados lentes gravitacionales según la teoría de la relatividad general de Einstein. En esta región del espacio vacío por encima de la superficie del sol donde no hay plasma, no existe ninguna distorsión en la forma del lente gravitacional. El más importante es que la famosa ecuación de la curvatura de la luz debido a la gravedad obtenidos por la relatividad general se deriva de los supuestos clásicos de un camino de mínima energía de un rayo de luz en el atmósfera plasma del sol, expuestos a la gradiente de campo gravitatorio del sol. Los resultados se encuentra para ser totalmente independiente de la frecuencia del rayo de luz.

Moreover, findings clearly show that the **Shapiro Delay** is essentially a frequency dependent transit time effect, which clearly explains the propagation delays for electromagnetic waves in the microwave spectrum, due to the electron density profile of the solar winds. The **Shapiro Delay** has absolutely nothing at all to do with the Space-Time predictions of General Relativity which is in itself totally independent of the frequency of the electromagnetic emissions. It is a clear fact that waves in the microwave frequencies and wavelengths are at resonance with the plasma atmospheres and the electron densities of the solar winds. The **Shapiro effect** has virtually no detectable effects at all on the **optical, infrared** or the **ultraviolet** waves which are all in the nm wavelength region of the spectrum.

Keywords: black hole, gravitational lensing, galactic core, Gauss law, optical reciprocity.

Details: <http://www.extinctionshift.com/SignificantFindings.htm>

Comentarios en español son bienvenidos siempre.
Kommentare auf Deutsch sind auch willkommen.
Your comments are welcome.

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