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THE MANUFACTURE AND SALE
OF
SAINT EINSTEIN

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13 SOLDNER'S PREDICTION

In 1919, (on dubious grounds²⁸¹⁰) Frank Watson Dyson, Charles Davidson and Arthur Stanley Eddington made Albert Einstein internationally famous by affirming that experiment had confirmed, without an attribution to Soldner, Johann Georg von Soldner's 1801 hypothesis that the gravitational field of the Sun should curve the path of a light ray coming from a star and grazing the limb of the Sun.²⁸¹¹ Shortly after that Einstein won the Nobel Prize, though it is unclear why he won it, other than as a reward for his newly found fame for reiterating Soldner's ideas, and for his pacifist stance during World War I—the law of the photoelectric effect was mentioned as a possible reason for the prize.

“That the idea of a bending of light rays was bound to emerge at the time of the emission theory is quite natural, as is the fact that the numerical result is exactly the same as that according to the equivalence hypothesis.”—ALBERT EINSTEIN²⁸¹²

13.1 Introduction

Isaac Newton asked if mass is convertible into light, and wondered if light might be subject to gravity. From Newton's *Opticks*,

“QUERY 1. Do not bodies act upon light at a distance, and by their action bend its rays; and is not this action (*cæteris paribus*) strongest at the least distance?”

and,

“QUERY 30. Are not gross bodies and light convertible into one another, and may not bodies receive much of their activity from the particles of light which enter their composition? [***] The changing of bodies into light, and light into bodies, is very conformable to the course of Nature, which seems delighted with transmutations. [***] [W]hy may not Nature change bodies into light, and light into bodies?”

Newton's corpuscular theory of light demands that light be subject to the force of gravity. As a result, Newton's theory predicts that light emitted from a distant star grazing the Sun is deflected by the gravitational field of the Sun before it reaches the Earth. This predicted effect was already known in the 1700's.²⁸¹³ Huyghens' wave theory of light produces the same result on other grounds. It is theoretically possible to measure the amount of any deflection during an eclipse of the Sun.

Arthur Stanley Eddington acknowledged Newton's priority for predicting that gravitational fields would deflect the path of a ray of light. *The Times* of London reported on 28 November 1919, on page 14,

“PROFESSOR EDDINGTON ON NEWTON’S
FORESIGHT.

In an article in the *Contemporary Review* on ‘Einstein’s Theory of Space and Time,’ Professor A. S. Eddington, referring to the recent observations of the eclipse of the sun, says:—

‘The deflection of the star images means a bending of the ray of light as it passes near the sun, just as though the light had weight which caused it to drop towards the sun. But it is not the bending of light that threatens the downfall of Newton. On the contrary, were Newton alive he would be congratulating himself on his foresight. In his ‘Opticks’ we read:—Query 1.—Do not bodies act upon light at a distance, and by their action bend its rays, and is not this action (*cæteris paribus*) strongest at the least distance?

‘Weight of light seemed less strange to Newton than to us, because he believed light to consist of minute corpuscles, whereas for us the bending of a wave of light is a much more difficult conception. This confirmation of Newton’s speculation is in itself a striking result; it might perhaps be described as the first new thing that has been learnt about gravitation in more than 200 years.’

13.2 Soldner’s Hypothesis and Solution

Johann Georg von Soldner²⁸¹⁴ predicted in 1801 and that the gravitational mass of a ray of light from a distant star would curve its trajectory when it passed near the Sun. Soldner gave a value for the deflection twice as great as the Newtonian prediction, as did Einstein, the second time around. Soldner anticipated Einstein by more than a century.²⁸¹⁵

In 1907, Albert Einstein wrote without an attribution to anyone,

“As a result, the light rays which do not proceed along the ξ - axis are bent by the gravitational field; as is easily seen, the deflection comes to $\frac{\gamma}{c^2} \sin \varphi$

per centimeter of the path of light, where φ is the angle between the direction of the gravitational force and that of the ray of light.

Employing these equations and those equations known from the optics of resting bodies among the field strength and electrical current at a point, we are able to determine the influence of the gravitational field on optical phenomena in resting bodies. We must keep in mind the fact that the equations of the optics of resting bodies hold for the local time σ . Unfortunately, according to our theory, the influence of the gravitational field of the Earth is so slight (owing to the minuteness of $\frac{\gamma x}{c^2}$), as to afford no possibility to test the results of the theory against experience.”²⁸¹⁶

Einstein's lamentations remind one of Soldner's work of 1801.

In 1911, Einstein repeated the Newtonian prediction²⁸¹⁷ for the deflection of a light ray grazing the limb of the Sun without giving an attribution to anyone:

“By equation (4) a ray of light passing along by a heavenly body suffers a deflexion to the side of the diminishing gravitational potential, that is, on the side directed toward the heavenly body, of the magnitude

$$\alpha = \frac{1}{c^2} \int_{\theta = -\frac{1}{2}\pi}^{\theta = \frac{1}{2}\pi} \frac{kM}{r^2} \cos \theta ds = 2 \frac{kM}{c^2 \Delta}$$

where k denotes the constant of gravitation, M the mass of the heavenly body, Δ the distance of the ray from the centre of the body. A ray of light going past the Sun would accordingly undergo deflexion to the amount of $4 \cdot 10^{-6} = \cdot 83$ seconds of arc. The angular distance of the star from the centre of the Sun appears to be increased by this amount. As the fixed stars in the parts of the sky near the Sun are visible during total eclipses of the Sun, this consequence of the theory may be compared with experience. With the planet Jupiter the displacement to be expected reaches to about $\frac{1}{100}$ of the amount given. It would be a most desirable thing if astronomers would take up the question here raised. For apart from any theory there is the question whether it is possible with the equipment at present available to detect an influence of gravitational fields on the propagation of light.”²⁸¹⁸

As was demonstrated in Section 12.4 *Einstein's Fudge*, Einstein mysteriously doubled the predicted amount of deflection in 1915, which is to say he doubled the value of the Newtonian prediction to match Soldner's 1801 prediction. Einstein based this new prediction upon his erroneous assumption that $\sum T_{\mu}^{\mu} = 0$ for the trace of the energy-momentum tensor of matter, which should have netted him a quadrupled value had he been logically consistent and had he not fudged his equations by halving the mass of the Sun. Einstein wrote on 18 November 1915, without giving an attribution to anyone:

“Upon the application of Huygen's principle, we find from equations (5) and (4b), after a simple calculation, that a light ray passing at a distance Δ suffers an angular deflection of magnitude $2\alpha/\Delta$, while the earlier calculation, which was not based upon the hypothesis $\sum T_{\mu}^{\mu} = 0$, had produced the value α/Δ . A light ray grazing the surface of the sun should experience a deflection of 1.7 sec of arc instead of 0.85 sec of arc.”²⁸¹⁹

This doubled figure is quite significant, in that it enabled Einstein to distinguish his work from Newton's and it was this doubled figure which was allegedly confirmed in 1919 by the dubious eclipse observations of Dyson, *et al.*—an event which made Einstein world-famous almost overnight. In truth, the eclipse observations did not achieve the results or the accuracy claimed and were little more than a publicity stunt and a fraud perpetrated on the general public. Before this event, the general public had not yet become acquainted with Albert Einstein. After this event, Einstein was promoted as the new Newton and immediately became an international celebrity. The story of the eclipse observations and Einstein's alleged greatness was covered by most every major newspaper around the world.

Prof. Friedwardt Winterberg holds that Einstein's doubled figure, which nearly matches Soldner's 1801 value, is the result of Einstein's fudging of the figures in his attempts to appropriate Gerber's formula for the perihelion motion of Mercury. Prof. Winterberg argues that Einstein, before having the benefit of plagiarizing Hilbert's generally covariant field equations of gravitation, used *half* of the solar mass in Einstein's formulation of the perihelion motion of Mercury. This inductively determined fudge factor allowed him to deduce Gerber's result *and Soldner's result*. However, Einstein's 18 November 1915 theory, if it were stated in consistent terms, results in a prediction of the deflection of a ray of light *four* times as great as the Newtonian prediction.

13.3 Einstein Knew the Newtonian Prediction

Soldner's work of 1801 was fresh on the mind's of physicists in 1915. Franz Johann Müller presented an analysis of Soldner's work in 1914. Müller wrote,

“3. Über die Ablenkung eines Lichtstrahls von seiner geradlinigen Bewegung durch die Attraktion eines Weltkörpers, an welchem er nahe vorbeigeht.

Soldner kommt auf Grund der zu seiner Zeit herrschenden Newton'schen Emanationstheorie zu der Ansicht, daß der Lichtstrahl die Bahn eines mit Lichtstoff angefüllten (schweren) Massenpunktes sei, welcher der Newton'schen Attraktion unterworfen ist. Hiemit ist die Aufgabe auf ein äußerst einfaches Problem der Punktmechanik zurückgeführt.

Soldner läßt den leuchtenden Punkt von der Oberfläche des störenden Körpers in den Weltraum hinausgehen und findet dadurch, daß die Bahnkurve zur Verbindungslinie des Anfangspunktes (vielmehr Endpunktes) und dem Zentrum des störenden Körpers symmetrisch sein muß, weil die Bedingungen auf beiden Seiten dieser Geraden dieselben sind.

Aus den Elementen der Mechanik ist bekannt, daß ein so affizierter Massenpunkt einen Kegelschnitt beschreibt, dessen einer Brennpunkt mit dem Attraktionszentrum zusammenfällt und dessen Hauptachsenrichtung durch die oben beschriebene Gerade gegeben ist.

Die Exzentrizität ε des in Frage stehenden Kegelschnitts ist gegeben durch die Formel:

$$\varepsilon = \sqrt{1 + \frac{K^2}{\mu^2} \left[C^2 - \frac{2\mu}{n} \right]}$$

k ist die Konstante des Flächensatzes, C die Lichtgeschwindigkeit. Da Soldner in seiner Überlegung die Bewegung in einem Scheitelpunkt beginnen läßt, so findet er $k = C$; μ ist die am störenden Himmelskörper herrschende Schwerebeschleunigung. Da die Lichtgeschwindigkeit pro Sekunde bekanntlich 308 043 km beträgt, so ist ohne weiteres klar, daß die in obiger Formel auftretende algebraische Summe stets positiv ist. Die Bahn ist also hyperbolisch. Soldner denkt sich den leuchtenden Punkt als aus dem Unendlichen kommend, so daß die Ablenkung w aus der im Horizonte des Beobachtungsortes nach dem leuchtenden Punkt gezogenen Geraden durch die Gleichung:

$$\operatorname{tg} w = \frac{\mu}{C \sqrt{C^2 - \frac{2\mu}{n}}} \quad (\text{Asymptotenwinkel})$$

geben ist.

n setzt Soldner gleich der Einheit; der wirkliche Wert dieser Größe ist:

$$\sqrt{a^2 + b^2} - a.$$

wo a und b die zwei Achsen der Hyperbel vorstellen.

Für die Erde als störenden Körper findet Soldner:

$$w = 0,0009798''.$$

Er schließt seine Untersuchung mit den Worten: „Also ist es ausgemacht, daß man, wenigstens bei dem jetzigen Zustande der praktischen Astronomie, nicht nötig hat, auf die Perturbationen der Lichtstrahlen durch anziehende Weltkörper Rücksicht zu nehmen.“²⁸²⁰

Albert Einstein knew in 1911 that he was only repeating the Newtonian prediction for the deflection of light based upon the “corpuscular” emission theory of light. Einstein wrote to Erwin Freundlich in August of 1913,

“That the idea of a bending of light rays was bound to emerge at the time of the emission theory is quite natural, as is the fact that the numerical result is

exactly the same as that according to the equivalence hypothesis.²⁸²¹

Jürgen Renn believes that Einstein may have been inspired by Ferdinand Rosenberger's famous book on Newton, *Isaac Newton und seine physikalischen Principien*,

“Nach dieser, der Undulationstheorie jedenfalls nicht günstig erscheinenden Behandlung der Doppelbrechung des Lichtes geht NEWTON ohne weiteres zu den Fragen über, in welchen er nicht bloss alle Aethertheorien mit der Existenz des Aethers selbst für unmöglich erklärt, sondern auch positiv in sehr langen Auseinandersetzungen eine reine Emissionstheorie des Lichtes entwickelt und über die Natur der physikalischen Attraktionen sich weiter und offener als jemals sonst verbreitet. (27.) Muss man nicht, so heisst es nun, alle Hypothesen für unrichtig halten, welche, wie man das bisher gethan, die Erscheinungen des Lichtes aus neuen Modifikationen erklären wollen, die die Lichtstrahlen erst auf ihrem Wege durch dichtere Mittel erleiden und die nicht ursprünglich dem Licht eigenthümlich sind? (28.) Sind nicht alle Hypothesen, welche das Wesen des Lichtes als einen Druck oder eine Bewegung auffassen, die in einem flüssigen Medium fortgepflanzt werden, schon darum irrig, weil in allen diesen Hypothesen die Erscheinungen des Lichtes durch Modifikationen erklärt werden müssten, die dasselbe erst in den Körpern erleidet? Wenn das Licht nur aus einem Druck ohne thatsächliche Bewegung bestände, so würde es nicht fähig sein, die Theilchen der Körper in Bewegung zu versetzen und so die Körper zu erhitzen. Wenn es in einer Bewegung bestände, die sich augenblicklich durch alle Entfernungen fortpflanzt, so würde zu seiner Fortpflanzung eine unendlich grosse Kraft gehören. Und wenn es in einem Druck oder einer Bewegung bestände, die sich zeitlich oder momentan verbreiteten, so könnte es sich nicht in geraden Linien an einem Hinderniss vorbei bewegen, sondern müsste sich auch seitwärts in den ruhenden Raum hinter dem Hinderniss ausbreiten. Die Schwere ist nach unten gerichtet, aber der durch dieselbe in einer Flüssigkeit erzeugte Druck breitet sich nach allen Richtungen gleich stark und gleich schnell in geraden, wie in krummen Linien aus. Die Wellen eines stehenden Gewässers gehen nicht einfach an einem Hinderniss vorüber, sondern biegen allmählich in das ruhige Wasser hinter demselben ein. Auch die Wellen und Schwingungen der Luft, durch welche die Tone entstehen, beugen sich augenscheinlich, wenn auch nicht so stark wie die des Wassers; denn der Schall einer Kanone wird auch hinter einem Hügel gehört und der Ton verbreitet sich ebenso durch krumme Pfeifen wie durch gerade. Aber vom Licht bemerken wir niemals, dass es gekrümmten Bahnen folgt, oder dass es in den Schatten einbiegt. Das Licht der Fixsterne verschwindet bei der Dazwischenkunft der Planeten, und ebenso geschieht das bei der Sonne theilweise durch Mond, Venus und Merkur. Zwar werden auch die Lichtstrahlen beim Vorübergange an einem Körper ein wenig gebeugt, aber

diese Beugung geschieht nicht nach dem Schatten hin, sondern von demselben weg und geschieht nur in nächster Nähe des Körpers; dicht hinter demselben setzt der Strahl geradlinig seinen Weg fort. [*Footnote*: HUYGENS hatte allerdings die Undulationstheorie in seinem *Discours de la Lumière* gegen diesen Vorwurf, den NEWTON schon früher erhoben, vertheidigt; der Letztere beachtet nur diese Vertheidigung nicht weiter. HUYGENS meint, dass in der That auch beim Lichte, wie bei jeder Wellenbewegung, eine seitliche Ausbreitung stattfindet; er hält aber dafür, dass diese seitliche Ausbreitung viel zu schwach ist, um als Licht von uns empfunden zu werden. Wenn NEWTON behauptete, sagt er, dass der Schall in voller Stärke auch nach den Seiten sich fortpflanze, so widerspreche das den Beobachtungen am Echo, bei dem sich jedenfalls eine viel stärkere geradlinige Fortpflanzung des Schalles, ja sogar eine Gleichheit von Einfall- und Reflexionswinkel bemerken lasse. (S. *Discours de la Cause de la Pesanteur, Addition*, p. 164 u. p. 165.) Allerdings war die Schwächung des Lichtes bei der seitlichen Ausbreitung hier nur eine Behauptung, die erst in unserem Jahrhundert durch die Interferenz erklärt wurde.] Die ausserordentliche Brechung des isländischen Krystalles durch Fortpflanzung eines Druckes oder einer Bewegung zu erklären, ist bis jetzt meines Wissens nur von HUYGENS versucht worden, welcher zu dem Zwecke zwei verschieden vibrirende Medien in dem Krystalle annahm, der aber selbst erklärte, dass er die oben beschriebene Brechung in zwei auf einander folgenden Stücken nicht zu erklären wisse. [*Footnote*: Vergl. S. 313 dieses Werkes.]”²⁸²²

Others hold that Aaron Bernstein’s popular books on science *Naturwissenschaftliche Volksbücher* influenced Einstein, which books Einstein had read as an adolescent.²⁸²³ Einstein cited none of this work in 1911-1915, though he did discuss it with Alexander Moszkowski shortly thereafter,²⁸²⁴ and mentioned it in his autobiographical statements, in each instance only in the most general of terms,

“Auch hatte ich das Glück, die wesentlichen Ergebnisse und Methoden der gesamten Naturwissenschaft in einer vortrefflichen populären, fast durchweg aufs Qualitative sich beschränkenden Darstellung kennen zu lernen (Bernsteins naturwissenschaftliche Volksbücher, ein Werk von 5 oder 6 Bänden), ein Werk, das ich mit atemloser Spannung las.”²⁸²⁵

Maja Winteler-Einstein also mentioned that her brother Albert had read Bernstein’s books.²⁸²⁶

As Samuel Guggenheimer²⁸²⁷ and Charles Lane Poor²⁸²⁸ discovered, Einstein effectively conceded in 1920 that in 1911 he had simply repeated the Newtonian prediction. Einstein stated,

“It may be added that, according to the theory, half of this deflection is produced by the Newtonian field of attraction of the sun, and the other half

by the geometrical modification ('curvature') of space caused by the sun."²⁸²⁹

After Philipp Lenard and Ernst Gehecke accused Einstein of plagiarism in 1921, which caused an international scandal, Einstein lied in 1923 in a Czech translation of his book *Relativity: The Special and the General Theory* and publicly contradicted his own private statements,

"[. . .]I discovered in 1911 that the principle of equivalence demands a deflection of the light rays passing by the sun with observable magnitude—this without knowing that more than one hundred years ago a similar consequence had been anticipated from Newton's mechanics in combination with Newton's emission theory of light."²⁸³⁰

On the advice of Wodetzky of Budapest, Philipp Lenard noted that Poisson wrote of light's being attracted by gravity, the curvature of a ray of light by the sun, and the change in wavelength of light by the sun.²⁸³¹ Thomas Jefferson Jackson See mentioned the priority of Cavendish, and Jaki²⁸³² and Eisenstaedt²⁸³³ refer to Laplace's and John Michell's priority. In 1801, Soldner published the doubled Newtonian prediction Einstein presented in 1915, as if novel.

Edwin E. Slosson wrote in 1919,

"The amount of the observed angular deviation of the light rays from the straight line is 1.75 seconds, which is the same as was predicted by Einstein in 1911[*sic*], and considerably more than the deviation (.83 second) to be expected if Newton's law of gravitation applied to light."²⁸³⁴

The eclipse observations were one of the big three empirical demonstrations taken to justify the complicated geometry of the general theory of relativity. The eclipse observations were also employed as a publicity stunt to promote Einstein as the new and improved Newton. The other two alleged verifications were the perihelion motion of Mercury and the displacement of spectral lines towards the red.

13.4 Soldner's Formulation

"Two g or not $2g$?" that is the question. It is widely held that Soldner's formulation includes an erroneous factor of two and is not the true Newtonian formulation. Soldner's 1801 factor of two anticipated Einstein's 1915 predicted result by more than a century. Robert Trumpler wrote in the 31 August 1923 edition of *Science*,

"In setting up the differential equations for the motion of the particle [Soldner] erroneously used for the gravitational force the expression

$$2gr^{-2}$$

where g = acceleration at the surface of the attracting body, and

r = distance from the center of the attracting body (adopting the radius of this body as unit distance).

The factor 2 has no justification and should be omitted.”²⁸³⁵

Trumpler wrote to Mr. L. A. Redman on 30 September 1925 and explained that Soldner erred in his first equations:

$$\frac{ddx}{dt^2} = -\frac{2g}{r^2} \cos \varphi \quad (\text{I})$$

$$\frac{ddy}{dt^2} = -\frac{2g}{r^2} \sin \varphi \quad (\text{II})$$

Trumpler contended that,

“If these equations are applied to the point A on the Sun’s surface it will read $\frac{d^2x}{dt^2} = -2g$ or the acceleration is equal to twice the acceleration: $1 = 2$ which evidently must be wrong.”²⁸³⁶

Soldner not only revealed his doubled Newtonian prediction in his equations, but also in his diagram, and on page 170 of his paper he states,

“If one were to investigate by means of the given formula how much the moon would deviate a light ray when it goes by the moon and comes to earth, then one must, after substituting the corresponding magnitudes and taking the radius of the moon for unity, double the value found through the formula, because a light ray, which goes by the moon and comes to the earth describes two arms of a hyperbola.”²⁸³⁷

In 1918, Eddington asserted that Einstein’s 1915 prediction was twice that of the Newtonian prediction.²⁸³⁸ H. H. Turner wrote on 30 November 1919, where E is Einstein and N is Newton,

“On Einstein’s theory the deflection would be just twice this amount, $E = 2N$.”²⁸³⁹

Arvid Reuterdaahl stated on 22 March 1924,

“In *Science* (August 31, 1923), Dr. Robert Trumpler calls attention to the *error in Soldner’s work*. Note that it is Soldner that is wrong despite the fact that Einstein’s 1911 formula is identical with that of Soldner. It is also curious that when Einstein tried again in 1916 to produce a formula it did not

agree with his first effort, in fact, the 1916 formula gives a value twice as large as the one of 1911. Both are right according to the Einsteinians:—*two equals one.*”²⁸⁴⁰

Reuterdaahl, relying upon Philipp Lenard's somewhat confusing analysis, mistakenly believed that Soldner's result matched Einstein's 1911 prediction, when in fact it comes closer to Einstein's revised 1915 prediction. (Abraham Pais²⁸⁴¹ and many others have made the same mistake Reuterdaahl made.) In fact,

$$E = \frac{1}{2}E'' = 2E' = S = 2N,$$

where E is Einstein's 18 November 1915 prediction, E'' is the prediction Einstein's 18 November 1915 paper would have presented, if it were expressed in logically consistent terms, S is Soldner's 1801 prediction (warts and all), and E' is Einstein's 1911 prediction, which simply duplicates the Newtonian prediction N . Reuterdaahl later came to understand what Soldner had predicted and spent years trying to justify his prediction, claiming that it is the correct Newtonian prediction.

Some have speculated as to why Soldner might have added the factor of two. Richard de Villamil argued in a letter to Arvid Reuterdaahl²⁸⁴² (in which de Villamil called Einstein's "Relativity" the "finest spoof of the century!" nay, "of modern times") that Soldner's logic should have led him to,

$$v = -\frac{G}{R^2} \times \text{Time}$$

which after differentiating becomes,

$$\frac{d^2x}{dt^2} = -\frac{G}{R^2}.$$

de Villamil notes that Soldner instead refers to Laplace's equation of velocity in *distance* or *space*, as opposed to *time*,

$$v^2 = -2\frac{G}{R^2} \times \text{Distance} + \text{constant}$$

or,

$$\left(\frac{dx}{dt}\right)^2 = \frac{dx^2}{dt^2} = -\frac{2G}{R^2} \times \text{Distance} + \text{constant}.$$

de Villamil holds that if $\frac{d^2x}{dt^2}$ is correct, then Soldner's $2g$ should be g , and if

Soldner had instead,

“differentiated v^2 he would have got a ‘2’ on the left side of his equation ;
[i. e. $2 \cdot \frac{d^2 x}{dt^2} = -\frac{2G}{R^2}$] and, eventually, this would (after cancelling the
 ‘2’s) have resolved itself into $\frac{d^2 x}{dt^2} = -\frac{G}{R^2}$!”

de Villamil concludes,

“Soldner in differentiating $\left(\frac{dx}{dt}\right)^2$ squared, appears to have overlooked that
 this involves the use of a ‘2’.”²⁸⁴³

13.5 Conclusion

In the case of the Sun, Soldner gives a prediction of $\omega = 0''.84$ for *half* of the deflection of a ray of light going from infinity past the sun to infinity; and $1''.68$ for the full deflection from infinity to infinity—quite nearly the same as Einstein’s $1''.7$ of 1915—which was allegedly confirmed in 1919. As is the case with Paul Gerber, either Johann Georg von Soldner deserves credit for first making the correct prediction, or Einstein deserves no credit due to his flawed derivation based on half of the solar mass and his erroneous hypothesis that $T = 0$ for the trace of the energy-momentum tensor of matter.

Gravitation Theory. Says German began Wrong. A Mistake in Mathematics is Charged, with 'Curved Space' Idea to Hide it." *The New York Times*, (14 October 1924), p. 14; responses by Eisenhart, Eddington and Dyson, *The New York Times*, (16 October 1924), p. 12; **and** "Captain See vs. Doctor Einstein", *Scientific American*, Volume 138, (February 1925), p. 128; **and** T. J. J. See, *Researches in Non-Euclidian Geometry and the Theory of Relativity: A Systematic Study of Twenty Fallacies in the Geometry of Riemann, Including the So-Called Curvature of Space and Radius of World Curvature, and of Eighty Errors in the Physical Theories of Einstein and Eddington, Showing the Complete Collapse of the Theory of Relativity*, United States Naval Observatory Publication: Mare Island, Calif. : Naval Observatory,(1925); **and** "See Says Einstein has Changed Front. Navy Mathematician Quotes German Opposing Field Theory in 1911. Holds it is not New. Declares he himself Anticipated by Seven Years Relation of Electrodynamics to Gravitation", *The New York Times*, Section 2, (24 February 1929), p. 4. See refers to his works: *Electrodynamic Wave-Theory of Physical Forces*, Thos. P. Nichols, Boston, London, Paris, (1917); **and** *New Theory of the Aether*, Inhaber Georg Oheim, Kiel, (1922). *See also*: "New Theory of the Ether", *Astronomische Nachrichten*, Volume 217, (1923), pp. 193-283; **and** N. T. Roseveare, *Mercury's Perihelion from Le Verrier to Einstein*, Oxford University Press, (1982), pp. 78, 115, 137-146; **and** P. Beckmann, *Einstein Plus Two*, The Golem Press, Boulder, Colorado, (1987), pp. 170-175 (*Cf.* T. Bethel, "A Challenge to Einstein", *National Review*, Volume 42, (5 November 1990), pp. 69-71.).

2806. H. S. Slusher and F. Ramirez, *The Motion of Mercury's Perihelion: A Reevaluation of the Problem and Its Implications for Cosmology and Cosmogony*, Institute for Creation Research, El Cajon, California, (1984). R. Nedvěď, "Mercury's Anomaly and the Stability of Newtonian Bisystems", *Physics Essays*, Volume 7, Number 3, (1994), pp. 374-384.

2807. L. Silberstein, "The Motion of Mercury Deduced from the Classical Theory of Relativity", *Monthly Notices of the Royal Astronomical Society*, (1917), pp. 503-510, at 503-504.

2808. *Private Communication*

2809. See the letter from K. Schwarzschild to A. Einstein of 22 December 1915, *The Collected Papers of Albert Einstein*, Volume 8a, Document 169. See also. K. Schwarzschild, "Über das Gravitationsfeld eines Massenpunktes nach der Einsteinschen Theorie", *Sitzungsberichte der Königlich Preussischen Akademie der Wissenschaften zu Berlin*, (1916), pp. 189-196; **and** "Über das Gravitationsfeld einer Kugel aus inkompressibler Flüssigkeit nach der Einsteinschen Theorie", *Sitzungsberichte der Königlich Preussischen Akademie der Wissenschaften zu Berlin*, (1916), pp. 424-434; **and** "Zur Quantenhypothese", *Sitzungsberichte der Königlich Preussischen Akademie der Wissenschaften zu Berlin*, (1916), pp. 548-568. *Cf.* W. Pauli, *Theory of Relativity*, Pergamon Press, New York, (1958), p. 164.

2810. *See*: A. Fowler, *The Observatory*, Volume 42, (1919), p. 297; Volume 43, Number 548, (1920), pp. 33-45. *See also*: J. J. Thomson, "Joint Eclipse Meeting of the Royal Society and the Royal Astronomical Society", *The Observatory*, Volume 42, (1919), pp. 389-398. **See also**: C. L. Poor, "The Deflection of Light as Observed at Total Solar Eclipses", *Journal of the Optical Society of America*, Volume 20, (1930), pp. 173-211; **and** "What Einstein Really Did", *Scribner's Magazine*, Volume 88, (July-December, 1930), pp. 527-538; discussion follows in *Commonweal*, Volume 13, (24 December 1930, 7 January 1931, 11 February 1931), pp. 203-204, 271-272, 412-413. **See also**: S. H. Guggenheimer, *The Einstein Theory Explained and Analyzed*, Macmillan, New York, (1920), pp. 298-299. **See also**: D. Sciamia, G. J. Whitrow, Ed., *Einstein: The Man and His Achievement*, Dover, New York, (1973), pp. 39-40. **See also**: A. M. MacRobert, "Beating the Sky", *Sky and Telescope*,

Volume 89, (1995), pp. 40-43. *See also:* J. Maddox, “More Precise Solar-Limb Light-Bending”, *Nature*, Volume 377, (1995), pp. 11. *See also:* C. Couture and P. Marmet, “Relativistic Reflection of Light Near the Sun Using Radio Signals and Visible Light”, *Physics Essays*, Volume 12, (1999), pp. 162-173.

2811. F. W. Dyson, “On the opportunity afforded by the eclipse of 1919 May 29 of verifying Einstein’s Theory of Gravitation”, *Monthly Notices of the Royal Astronomical Society*, Volume 77, (1917), p. 445; **and** “Joint Eclipse Meeting of the Royal Society and the Royal Astronomical Society, 1919, November 6”, *The Observatory*, Volume 42, Number 545, (1919), pp. 389-398; **and** F. W. Dyson, C. A. Davidson, and A. S. Eddington, “Determination of the deflection of light by the Sun’s gravitational field, from observations made at the total eclipse of May 29, 1919”, *Philosophical Transactions of the Royal Society of London A*, Volume 220, (1920), pp. 291-333; *Annual Report of the Board of Regents of the Smithsonian Institution Showing the Operations, Expenditures, and Conditions of the Institution for the Year Ending June 30, 1919*, (U.S.) Government Printing Office, Washington, (1921), pp. 133-176.

2812. A. Einstein translated by A. Beck, *The Collected Papers of Albert Einstein*, Volume 5, Document 468, Princeton University Press, (1995), p. 351.

2813. *See:* J. Eisenstaedt, “De l’Influence de la Gravitation sur la Propagation de la Lumière en Théorie Newtonienne. L’Archéologie des Trous Noirs”, *Archive for History of Exact Sciences*, Volume 42, (1991), pp. 315-386.

2814. J. G. v. Soldner, “Ueber die Ablenkung eines Lichtstrahls von seiner geradlinigen Bewegung, durch die Attraktion eines Weltkörpers, an welchem er nahe vorbei geht”, [*Berliner*] *Astronomisches Jahrbuch für das Jahr 1804*, pp. 161-172; reprinted in the relevant part with P. Lenard’s analysis in, “Über die Ablenkung eines Lichtstrahls von seiner geradlinigen Bewegung durch die Attraktion eines Weltkörpers, an welchem er nahe vorbeigeht; von J. Soldner, 1801”, *Annalen der Physik*, Volume 65, (1921), pp. 593-604; English translation in S. L. Jaki, “Johann Georg von Soldner and the Gravitational Bending of Light, with an English Translation of His Essay on It Published in 1801”, *Foundations of Physics*, Volume 8, (1978), pp. 927-950; critical response by M. v. Laue, “Erwiderung auf Hrn. Lenards Vorbemerkungen zur Soldnerschen Arbeit von 1801”, *Annalen der Physik*, Volume 66, (1921), pp. 283-284. Soldner followed up Newton’s query in the *Opticks*, “QUERY 1. Do not bodies act upon light at a distance, and by their action bend its rays; and is not this action (*cæteris paribus*) strongest at the least distance?” *See also:* P. Lenard, *Über Äther und Uräther*, second edition, S. Hirzel, Leipzig, (1922). *See also:* E. Gehrcke, “Zur Frage der Relativitätstheorie”, *Kosmos*, Special Edition on the Theory of Relativity, (1921), pp. 296-298; **and** “Die Gegensätze zwischen der Aethertheorie und Relativitätstheorie und ihre experimentelle Prüfung”, *Zeitschrift für technische Physik*, Volume 4, (1923), pp. 292-299; abstracts: *Astronomische Nachrichten*, Volume 219, Number 5248, (1923), pp. 266-267; **and** *Univerzum*, Volume 1, (1923), pp. 261-263; **and** E. Gehrcke, *Kritik der Relativitätstheorie*, Berlin, Hermann Meusser, (1924), pp. 82, 92-94. *See also:* *Frankfurter Zeitung*, Morning Edition, (6 November 1921), p. 1 and (18 November 1921), as cited by the editors of *The Collected Papers of Albert Einstein*, Volume 7, (2002), p. 112. *See also:* T. J. J. See, “Einstein a Second Dr. Cook?”, “Einstein a Trickster?”, *The San Francisco Journal*, (13 May 1923), pp. 1, 6; (20 May 1923), p. 1; (27 May 1923); response by R. Trumpler, “Historical Note on the Problem of Light Deflection in the Sun’s Gravitational Field”, *Science*, New Series, Volume 58, Number 1496, (1923), pp. 161-163; reply by See, “Soldner, Foucault and Einstein”, *Science*, New Series, Volume 58, (1923), p. 372; response by L. P. Eisenhart, “Soldner and Einstein”, *Science*, New Series, Volume 58, Number 1512, (1923), pp. 516-517; rebuttal by A. Reuterdaahl, “The Einstein Film and the Debacle of

Einsteinism”, *The Dearborn Independent*, (22 March 1924), p. 15. **See also:** J. Eisenstaedt, “De l’Influence de la Gravitation sur la Propagation de la Lumière en Théorie Newtonienne. L’Archéologie des Trous Noirs”, *Archive for History of Exact Sciences*, Volume 42, (1991), pp. 315-386. **See also:** A. F. Zakharov, *Astronomical and Astrophysical Transactions*, Volume 5, (1994), p. 85.

2815. Sir Edmund Whittaker, *A History of the Theories of Aether and Electricity*, Volume II, Philosophical Library Inc., New York, (1954), p. 180.

2816. A. Einstein, “Über das Relativitätsprinzip und die aus demselben gezogenen Folgerungen”, *Jahrbuch der Radioaktivität und Elektronik*, Volume 4, (1908), pp. 411-462, at 461-462.

2817. *See:* J. Eisenstaedt, “De l’Influence de la Gravitation sur la Propagation de la Lumière en Théorie Newtonienne. L’Archéologie des Trous Noirs”, *Archive for History of Exact Sciences*, Volume 42, (1991), pp. 315-386.

2818. A. Einstein, “On the Influence of Gravitation on the Propagation of Light”, *The Theory of Relativity*, Dover, New York, (1952), p. 108; which is an English translation by W. Perrett and G. B. Jeffrey of “Über den Einfluß der Schwerkraft auf die Ausbreitung des Lichtes”, *Annalen der Physik*, Volume 35, (1911), pp. 898-908, at 908.

2819. A. Einstein, “Erklärung der Perihelbewegung des Merkur aus der allgemeinen Relativitätstheorie”, *Sitzungsberichte der Königlich Preussischen Akademie der Wissenschaften zu Berlin, Sitzung der physikalisch-mathematischen Classe*, (1915), pp. 831-839, at 834; reproduced in *The Collected Papers of Albert Einstein*, Volume 6, Document 24; English translation by B. Doyle, *A Source Book in Astronomy and Astrophysics, 1900-1975*, Harvard University Press, (1979), which is reproduced in *The Collected Papers*.

2820. F. J. Müller, *Johann Georg von Soldner, Geodät*, Kastner & Callwey, München, (1914), pp. 46-47. Special thanks to Kathryn M. Neal of San Diego State University for supplying me with a copy of this work!

2821. A. Einstein, translated by A. Beck, *The Collected Papers of Albert Einstein*, Volume 5, Document 468, Princeton University Press, (1995), p. 351.

2822. The attribution to Renn is from J. Eisenstaedt, “De l’Influence de la Gravitation sur la Propagation de la Lumière en Théorie Newtonienne. L’Archéologie des Trous Noirs”, *Archive for History of Exact Sciences*, Volume 42, (1991), pp. 315-386, at 378, 385; which cites: F. Rosenberger, *Isaac Newton und seine physikalischen Principien*, J. A. Barth, Leipzig, (1895), pp. 315-316. Rosenberger’s book was well-known and is cited in P. Drude, “Ueber Fernwirkungen”, *Annalen der Physik und Chemie*, Volume 62, (1897), pp. 693, I-XLIX, at VIII. Rosenberger’s book is also cited in L. Lange, “Das Inertialsystem vor dem Forum der Naturforschung”, *Philosophische Studien*, Volume 20, (1902), pp. 1-71, at 64, 69, and in Mach’s *Die Mechanik in ihrer Entwicklung*, fifth improved and enlarged edition, F. A. Brockhaus, (1904), pp. 197, 206. The same passages appear in the third edition of Mach’s work (1897) at pages 184, 190, and the seventh edition at pages 181 and 190.

2823. A. Bernstein, *Naturwissenschaftliche Volksbücher*, third edition, Volume 18, Franz Dunker, Berlin, (1869), pp. 37-38. *See:* J. Renn and R. Schulmann, Editors, *Albert Einstein/Mileva Marić The Love Letters*, Princeton University Press, (1992), pp. xxiii, 45, 94, note 14. *See also:* F. Gregory, “The Mysteries and Wonders of Natural Science: Bernstein’s *Naturwissenschaftliche Volksbücher* and the Adolescent Einstein”, in J. Stachel and D. Howard, Editors, *Einstein: The Formative Years 1879-1909*, Birkhäuser, Boston, (2000), pp. 23-41. *See also:* J. Eisenstaedt, “De l’Influence de la Gravitation sur la Propagation de la Lumière en Théorie Newtonienne. L’Archéologie des Trous Noirs”, *Archive for History of Exact Sciences*, Volume 42, (1991), pp. 315-386, at 371-375, 378, 383, and 385.

- 2824.** A. Moszkowski, *Einstein: The Searcher*, E. P. Dutton, New York, (1921), p. 225.
- 2825.** A. Einstein quoted in P. A. Schilpp, *Albert Einstein als Philosoph und Naturforscher*, W. Kohlhammer, Stuttgart, (1955), p. 5.
- 2826.** M. Winteler-Einstein, English translation by A. Beck, “Albert Einstein—A Biographical Sketch”, *The Collected Papers of Albert Einstein*, Volume 1, Princeton University Press, (1987), pp. xv-xxii, at xxi.
- 2827.** S. Guggenheimer, *The Einstein Theory Explained and Analyzed*, Macmillan, New York, (1925), pp. 296-302.
- 2828.** C. L. Poor, “What Einstein Really Did”, *Scribner’s Magazine*, Volume 88, (July-December 1930), pp. 527-538, at 534.
- 2829.** A. Einstein, translated by R. W. Lawson, *Relativity: The Special and the General Theory*, Appendix 3, Part B, Methuen, New York, (1920), p. 153.
- 2830.** A. Einstein in the Czech version of *Relativity: The Special and the General Theory* English translation by A. Engel, *The Collected Papers of Albert Einstein*, Volume 6, Document 42, Note 4, Princeton University Press, (1997), p. 418.
- 2831.** See: P. Lenard, *Über Äther und Uräther*, second edition, S. Hirzel, Leipzig, (1922), p. 64. Lenard cites: S. D. Poisson, *Traité de Mécanique*, Second Edition, Bachelier, Paris, (1833).
- 2832.** S. L. Jaki, “Johann Georg von Soldner and the Gravitational Bending of Light, with an English Translation of His Essay on It Published in 1801”, *Foundations of Physics*, Volume 8, (1978), pp. 927-950.
- 2833.** J. Eisenstaedt, “De l’Influence de la Gravitation sur la Propagation de la Lumière en Théorie Newtonienne. L’Archéologie des Trous Noirs”, *Archive for History of Exact Sciences*, Volume 42, (1991), pp. 315-386.
- 2834.** E. E. Slosson, “The Most Sensational Discovery of Science: The Weight of Light”, *The Independent*, Volume 100, (29 November 1919), pp. 136.
- 2835.** R. Trumpler, “Historical Note on the Problem of Light Deflection in the Sun’s Gravitational Field”, *Science*, Volume 58, Number 1496, (31 August 1923), pp. 161-163, at 161.
- 2836.** Courtesy of the Department of Special Collections, University of St. Thomas, St. Paul, MN.
- 2837.** S. L. Jaki, “Johann Georg von Soldner and the Gravitational Bending of Light, with an English Translation of His Essay on It Published in 1801”, *Foundations of Physics*, Volume 8, (1978), pp. 927-950, at 947.
- 2838.** A. Eddington, *Report on the Relativity Theory of Gravitation*, second edition, Fleetway Press, London (1920), pp. 54-56; citation by Jaki.
- 2839.** H. H. Turner in the introduction of the English translation of Freundlich’s *The Foundations of Einstein’s Theory of Gravitation*, Methuen & Co. Ltd., London, (1924), p. xiii.
- 2840.** A. Reuterdaahl, “The Einstein Film and the Debacle of Einsteinism”, *The Dearborn Independent*, (22 March 1924), p. 15.
- 2841.** A. Pais, *Subtle is the Lord*, Oxford University Press, Oxford, Toronto, New York, Melbourne, (1982), pp. 199-200.
- 2842.** Letter from R. de Villamil to A. Reuterdaahl of August 14th, 1925/1926???, Department of Special Collections, O’Shaughnessy-Frey Library, University of St. Thomas, Minnesota, pp. 2-3.
- 2843.** Courtesy of the Department of Special Collections, University of St. Thomas, St. Paul, MN.