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Newtonian Light bending

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Contrary to what many people believe, Newtonian theory gives the same value for light bending as General relativity. I will simplify things in the following article by just highlighting the important bits

We need to consider the idealised mathematical scenario of perfect vacuum and motion of point-particle of light (point on light wave if you like). If we consider extra factors then the model merely becomes more complicated with additional effects.

First consider light –particle moving in x direction and in y direction (taking downwards) there is gravity.

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In the x direction is light moving at velocity c, and in y direction is velocity = gt created by gravity; where g = acceleration due to gravity acting in time interval t.

This setup is similar to a thrown ball; with the velocity given by the gravity all directed downwards in the y direction and parallel.

Now by Newton we have his inverse gravity equation and we can write:
g = GM/r squared

Taking r as distance travelled by light in time interval t. We can write:

gt = GM/rc

So, we have a velocity vector triangle, with opposite side = c, adjacent side = GM/rc

Then tan theta = GM/(rc)/c = GM/(r c squared)

Theta is the angle of deflection as observed by an observer that receives the light further along in the x direction.

Now using the trick that for small values of theta, tan theta = theta approximately, we can say, and let us call this the first angle, so:

Theta_1 = GM/(rc squared) ……. (1)

Now let's consider a second scenario:

Where instead of the velocity of gravity all being parallel directed downwards; the gravity is now directed towards a point-source of gravity.

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  gt directed down at some varying angle

By relevant calculations which is long and involved and various integrations we get for small angle theta_2 twice the value for the first angle _1

i.e. theta_2 = 2GM/(rc squared)…… (2)

Now the angle we get from General relativity by very complicated calculations comes out as:

Theta_3 = 4GM/(rc squared) ……..(3)

This is twice the value of theta_2.

Now what deceived me – was I was led by my education to believe that the Newtonian calculation for light bending was theta_1. I immediately this was wrong, and when I was told General relativity gave twice the value of the Newtonian one; I thought one merely needed to do the Newtonian calculation in the way of theta_2. But it turns out that the relativists did calculate the Newtonian value in theta_2 way, and not theta_1.

So, the claim is by the relativists that the Newtonian angle for lightbending is equation (2) and the correct equation (3) from General relativity gives twice that value.

There is only one problem with this – the Newtonian calculation has been done completely wrong.

Once one does the calculation within Newtonian theory in the correct way then it gives the same value of General relativity's equation (3).

First to bear in mind when I say Newtonian theory to be more precise I mean Boscovich-Galileo-Newtonian theory i.e. Newtonian theory obeying Galilean relativity. Because as per my earlier claims – both Special relativity and Galilean relativity work. What can conceal the fact that both Einsteinian and Newtonian theories work is the fact that calculations are often done wrong within the context of those theories.

Now back to doing the calculation correctly within B-G-Newtonian theory:

The first angle theta_1 is supposed to be for light travelling a parabolic path same as a thrown ball in earth's gravity would follow a parabolic path.

The second angle theta_2 is supposed to be for light travelling a hyperbolic path under the influence of a point-source of gravity.

Both calculations have been done wrong.

And both calculations are what the mainstream thinks Newtonian theory gives.

However, even within Newtonian theory the speed of light in vacuum equals the speed of light in vacuum, and not some other value.

The first angle scenario as gives us the velocity vector triangle:

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On one side of the triangle we have c, on the other side we have gt, and we have the hypotenuse, the hypotenuse this triangle has is the square root of (c squared + g squared t squared), this is greater than the value of c, i.e. faster than the speed of light in vacuum. This is strange because light is supposedly travelling along that direction of the hypotenuse and it is doing so faster than the speed of light in vacuum.

Of course c has been put on the wrong side of the triangle, the hypotenuse has value c, and the side that was c is the square root of (c squared – g squared t squared) and is less than the speed of light in vacuum, because the light that would have travelled in the x direction has now been diverted to the hypotenuse direction. So, the triangle looks like this:

@ >>>>>>>>>>>>>> square root (c squared – g squared t squared)
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The situation is similar for case two.

Once we do the triangle correctly, we can then do the correction calculation within B-G-Newtonian theory, and of course that is trivia, coming out to be twice the mistaken values

i.e. instead of (1) the correct value from the corrected triangle (of case 1) is:

Theta_1a = 2GM/(rc squared) ……. (1a)

And correct value for the corrected triangle (of case 2) is:

theta_2a = 4GM/(rc squared)…… (2a)

The value of equation (2a) is the same as the General relativity equation (3).

i.e. Newtonian theory gives same value of light bending as General relativity.

Can you see the consequences of this?

For a start the Newtonian calculation is really much simpler than the General relativity calculation. The General relativity calculation is in fact diverting itself to complicated mathematics to compensate for not being able to do the Newtonian calculation correctly.

As pointed out on my paper on the Michelson-Morley experiment similar mistakes in maths have occurred. And once compensated for we see that both Special relativity and Galilean relativity work.

In Einstein's scenario once we introduce acceleration we need to move from Special relativity to General relativity. If you notice with this paper—the calculations stated within velocity vector triangles and we were dealing with acceleration, i.e. acceleration to gravity which we were able to represent by a velocity gt. We merely needed to use Newtonian equations of motion. i.e. Newtonian equations of motion are still valid. That fact has itself been obscured because of errors that had to be compensated for, it was lost sight of that Newtonian equations of motion still work. And reiterating – in the relativity scenario – both Galilean relativity Special relativity work. Within the contect of both theories – Newtonian equations of motion still work.

But make a mistake within Special relativity with the triangles (1 and 2) and then in order to compensate one has move from such a simple maths setup to a more complicated to get the right answer.