

Re: Bending of light not well authenticated

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- *From:* "Koobee Wublee" <kublai@xxxxxxx>
 - *Date:* Fri, 13 May 2005 20:29:03 -0700
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"Randy M. Dumse" <rmd@xxxxxxxxxxxxxx> wrote in message
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>

- > Einstein's theory is one of curved space-time, not just curved space, and
- > not just of curved time. As light passes through the the deeper
- > gravitational field, it is slowed relative to the far away observer, and
- > this causes it to be deflected somewhat as if it were in a prism
- > (faster-region, slower-region, faster-region).

Since the curvature is in spacetime and not just in space, why do you expect the photon to be deflected permanently with an angle of displacement in space? Since you model the curvature of spacetime as a prism, why do you not expect the light to follow what a prism would bend the light that is unbending or correcting the deflection as the photon leaves the sun which ends up with no deflection at all?

GR math actually shows gravitational lens behaves very much like a true lens where the index of refraction is a gradient highest at the center. However, whoever first derrived this after 1915 incorrectly simplified the integration limit of the integral. The perihelion was incorrectly determined to be r_0 where r_0 is the perihelion if the sum has zero mass. The actual perihelion should be $(r_0 - dr)$ where dr is the deflected amount at the perihelion. Although $(r_0 \gg dr)$, so is the incorrectly determined angle of deflection very small compared to (2π) . This angle is actually the one occurred at r_0 which is just a little bit after perihelion. There is also one just a little bit before perihelion.

- > As light passes through the the deeper gravitational field, it has
- > "further to go", and that deflects the light with an equal component. So
- > in the deeper field near a gravitating body, both the slowing of time
- > relative to the far away observer, and the shortening of measurements
- > relative to the far away observer, each deflect light by an amount
- > equivalent to a Newtonian deflection of equivalent mass for a final effect
- > 2x that of a Newtonian origin.

That depends on dr which is related to an integration constant associated with the conservation of angular momentum.

- *Follow-Ups:*
 - ◆ *Re: Bending of light not well authenticated*
 - ◇ *From: Randy M. Dumse*

- *References:*
 - ◆ *Re: Bending of light not well authenticated*
 - ◇ *From: Randy M. Dumse*

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