

Gravitational bendig of light

The gravitational bending of light is one of the cornerstones that supports General Relativity.

With this new theory, where the interaction of electrons with light plays a much higher role the bending of light can be explained differently.

It is well known that nearly each celestial object carries free electrons in its atmosphere, or in its vicinity above the surface. So one can simply assume that the electron density is highest close to the surface, with larger distance this density becomes weaker and weaker. But no doubt existst, that in radial direction the electron density is a function of the radius. Typically, when there are no strong surface activities like at our sun, one can assume that the electron density decreases continuously. If now a light wave passes along the "atmosphere" there is always a density gradient of electrons perpendicular to the light wave travel. This density gradient bends electromagnetic waves, and with that the light passing by. The bending is strong if the light beam comes close to the surface, it is low the higher it passes through the electron atmosphere. We know that effect from our sun. We can see our sun already before it geometrically should be visible and when the sun sets longer than geometrically expected. It is known, that our atmosphere is the cause of this bending. Especially the free electrons have an influence.

The bending itself is dependent on the frequency, as known from prism white light is separated into its component colors. The higher the frequency of light the higher is the bending.

One other model could be used, to give an imagination of the effect. Assume there is a prism around a celestial object, like ring and the axis of the ring is pointing to the observer. The thickness of the the prism varies with r from the surface. Its thickness corresponds or might be proportional to the integrated electron density for light paths passing at that height of the radius. If now a second star is directly behind that celestial object with the surrounding prism, it can easily be imagined, that a ring could be seen.

So in this New Theory, the bending of light is not caused directly from gravitation (as in GR), here it is a secondary effect. The primary effect is that the electron density around the celestial object is influenced by gravity.

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