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Total Solar Eclipse Invalidates Theory of Relativity

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Total solar eclipse of 29th May, 1919 changed the physics forever. 90 years later, another total solar eclipse not only conclusively invalidates theory of relativity but also shows that there is no failure of simultaneity and that our understanding of the mechanism of our sense of sight is not correct.

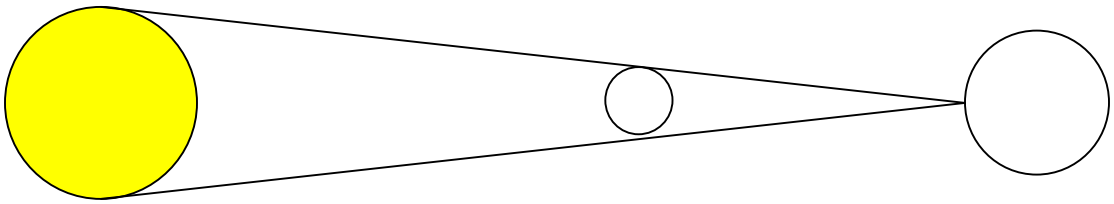
Introduction

90 years back, an experiment conducted by Sir Arthur Eddington during the total solar eclipse of 29th May, 1919 turned the physics upside down. Most scientists believe that due to the conditions at the time of experiment and also due to rather primitive equipments used in the experiment, the results cannot be relied upon but it does not make any difference because as a consequence of the experiment, Einstein's theory of relativity received worldwide attention and replaced the Newtonian idea of absolute space and absolute time with Einstein's relative space and relative time.

An analysis of the total solar eclipse of 22.07.2009 shows that the position of the sun is not affected by the atmospheric refraction. The analysis also shows that we see the sun at the place it actually is and not at a place where it was 8 minutes 45 seconds back.

Discussion

The total solar eclipse is supposed to occur when the center of the mass of the sun, the moon, and the earth are in one line. This position is explained through following illustration.



While analyzing the total solar eclipse, we also have to remember that light takes 8 minutes 44 seconds to reach moon from the sun.

Sun and moon move about 2.18 degrees in the sky (15 degrees in one hour) in 8 min. 44 seconds.

Since we are supposed to see the sun only when our eyes can absorb the photons emitted by the sun, its apparent position is 2.18 degrees below its actual position. Since we can see the sun only when our eyes absorb the photons emitted by the sun therefore if full sun is visible from any location on the earth then we have to assume that photons from all points of the sun reach that location.

We shall also remember that in 8.44 seconds, the moon moves 0.0074 degrees in its orbit and earth moves 0.0055 degrees in its orbit.

Sun's apparent position in the sky is also affected by the refraction of the light. At the time of the sunrise, sun appears to be above the horizon when it actually is below the horizon by slightly more than its own apparent size as shown below.

The affect of refraction on the apparent position of the sun in the sky reduces as the day sun moves up in the sky and is zero when the sun is at the zenith. Due to refraction, sun appears to be above its actual position. Even though it is very difficult to calculate exact refraction at any given location, the atmospheric refraction is still very high in the early morning and its affect on the apparent position of the sun is substantial.

Therefore, apparent position of the sun is affected by the time light takes to reach us as well as by the atmospheric refraction. Depending on the time of the day, the combined effect of the two phenomenon can make the sun appear above or lower than its actual position.

Therefore, we have to take all these factors into consideration while analyzing the total solar eclipse.

The moon stays outside the atmosphere of the earth and therefore the light reaching the moon is not affected by the atmospheric refraction of the earth.

Total solar eclipse on 22.07.2009 at Indore

With these undisputed premises as per the current theory, let us analyze the occurrence of total solar eclipse on 22.07.2009 at Indore (24° 30' N & 80° 32' E).

On 22.07.2009, at the time of totality, sun's position was 6 degrees above the horizon* in the sky of Indore. The early morning occurrence of the total solar eclipse ensured that sun's apparent position was affected substantially by the atmospheric refraction.

Total solar eclipse was not visible from Indore due to heavy cloud cover but since it took place at the appointed hours at all the locations where totality was visible therefore we can safely assume that in Indore also totality occurred at the appointed hour.

In the analysis below, the drawings are not to the scale but it does not make any difference in the analysis as the scale does not alter the nature of the argument esp. as the effect of atmospheric refraction on the apparent position of the sun is quite substantial in the early morning.

Let us first determine whether we are required to absorb the light to be able to see it. We will try to test this premise from our observations in nature and then confirm these observations experimentally.

All of us have seen a lightening flash in a sky. We know the exact place lightening flashes, the path it follows, and the place it strikes at. Fortunately, we can see the lightening without being in its path and without absorbing any of the photons. If we were required to absorb the photons to see the lightening (light) then, if we are lucky, we may just lose our eyesight and have few painful burns but if we are not lucky then we have to bid adieu to this world just because we looked at a lightening.

Sitting in a darkroom, we can see plenty of the light outside the room even when light source is pointing away from us. If all the photons we see were required to reach us then these photons must enter the room before they can reach us. Our room then will light up just because we are looking at the light. Just imagine that if the current theory were to be correct then how much electricity we could have saved.

If we were required to absorb the photon to be able to see it then we can see the photon only at one place and can never detect the motion of any photon because photon must disappear as soon as we notice it.

Obviously and fortunately, we are not required to absorb the light to be able to see it. Our eyes are sensors and not receptors. We can see the light at the place it is generated and at the time it is generated. Let us confirm these observations experimentally.

Physics explains the mechanism through which we 'see' the objects but it does not explain how we perceive light itself. If we need to absorb a photon (light particle) to be able to see it, then more than one observer cannot see a single photon. However, our

experiments show that more than one photon detectors placed at different locations can simultaneously detect a single photon. Obviously, two or more photon detectors cannot absorb a single photon which means even photon detectors can sense a photon without absorbing it.

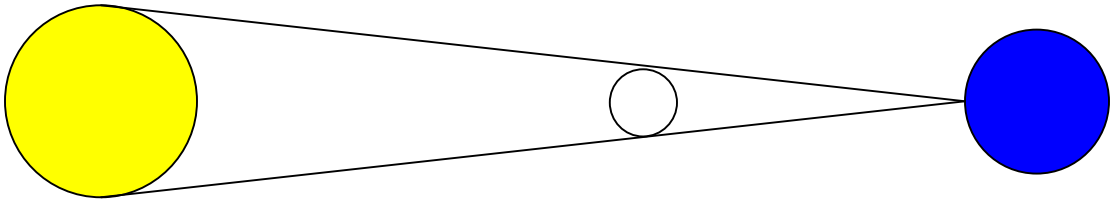
Double-slit experiment is one of the most beautiful and one of the most important experiments of physics. As we know, alternate dark and light bands are formed in the experiment due to destructive and constructive interference of light.

The quantum of light reaching the dark bands is substantially less than the quantum of light reaching the light bands. If we extend the experiment and make a hole each in the light band as well as in the dark band and peep through these holes then we find no difference in the two views except because of the change in the angle. If our vision requires us to absorb the photons then we will find huge difference in the two views as substantially less number of photons reach the dark band.

Obviously, we need not absorb a photon to be able to see it.

In the light of this discussion, let us first explore the possibility of occurrence of the total solar eclipse as per the current mechanism.

Let us assume that we take into account the time light takes to reach us from the sun while calculating the time of the occurrence of the totality.



Totality cannot occur in the above position for the following reasons,

When the solar eclipse occurs in the early morning *i.e.* when the latitude of the sun is around 10 degrees, we have to account for the refraction because at 10 degrees the refraction will be 5 arc minutes which is almost $1/6^{th}$ of the size of the sun. At 6 degrees, the refraction is substantially higher.

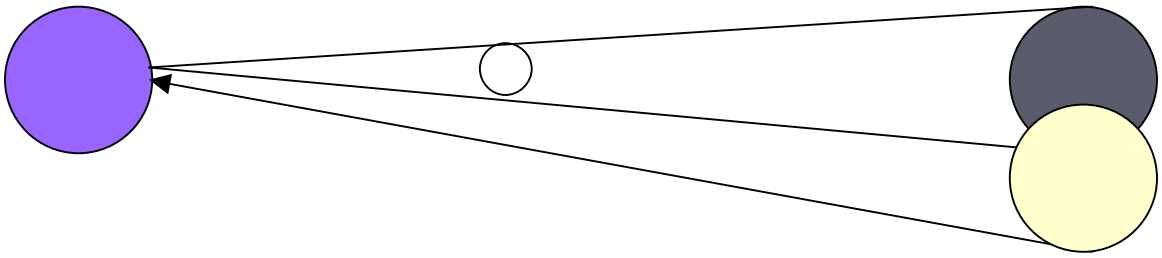
First, we have to determine whether totality occurs when sun's apparent position is behind the moon or totality occurs when sun's actual position is behind the moon. Let us try and analyze this situation in following case.

In the above position, sun's apparent position is quite higher than its actual position. If a total solar eclipse were to take place in this position then, will the moon be in front of the apparent sun or actual sun?

Apparent sun is a ghost; it has no physical contents and does not emit light. The light must come from the actual position of the sun therefore totality cannot occur when apparent position of the sun is behind the moon but its actual position is clear of the moon.

Since light coming from the actual position of the sun is refracted therefore if there is no obstacle in our line-of-sight then sun's image will appear as shown above.

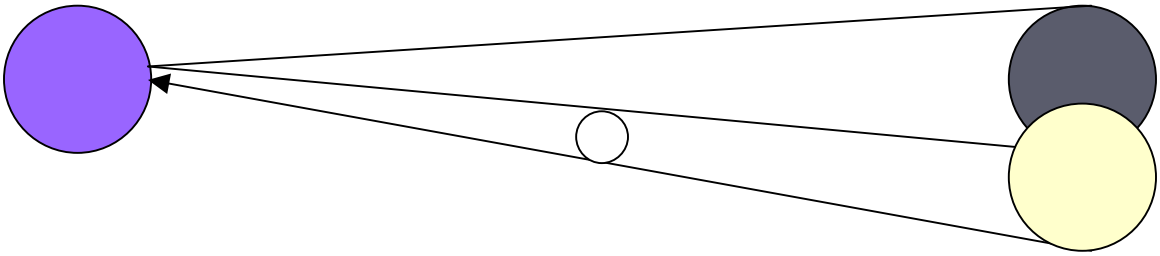
If moon comes in between the sun's ghost and the earth then also we shall see the image of the sun because we will still be receiving the photons from the sun and therefore image of the sun shall still be formed in our eyes. The moon will also be receiving substantial light from the actual sun and therefore we shall see a bright moon and at the same time we shall see the image of the full sun behind the moon. Even if we assume that the ghost will disappear behind the moon, we must admit that we will still be receiving the light from the actual sun and therefore there shall not be darkness during the totality.



If we assume that ghost of the sun does disappear behind the moon then, we must have another totality when actual sun comes behind the moon and moon blocks all the light of the sun. Since, no light will be reaching us therefore there will not be any refraction of light and this time totality and darkness must take place simultaneously.

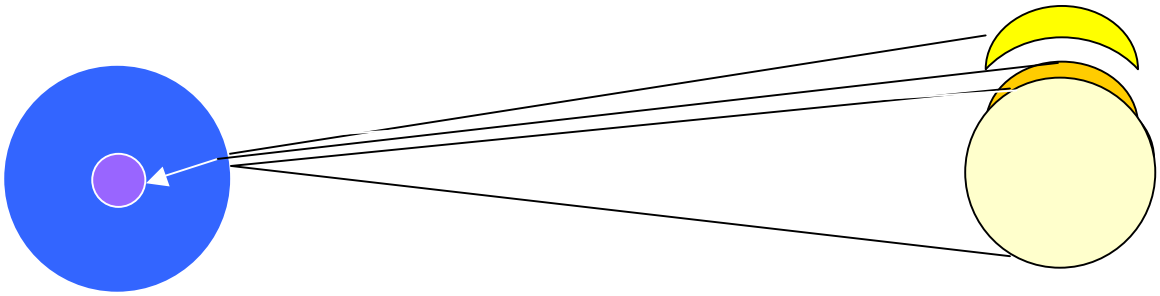
Unfortunately, we have not noticed any of these phenomenon therefore we have to rule out the possibility that total solar eclipse occurs when the apparent position of the sun (sun's ghost) is behind the moon.

The second possibility is that sun's apparent position is affected by the atmospheric refraction and hence ghost sun does exist but totality occurs only when moon comes in between the earth and the actual sun.



In this case, the dark moon will appear at one location (since there will be no light coming from the moon therefore there will be no refraction) and the sun will disappear on top of it but totality will be visible behind the moon. In such a case, we will have to keep on shifting our vision.

Moreover, the first stream of photons after the totality will get refracted and hence after the totality, the first appearance of the sun shall be slightly above the moon and not be on top of the moon.



We do not get even this spectacular view therefore we have to rule out this possibility also.

The third possibility is that the apparent position of the moon as well as sun both are affected by the refraction but we have to rule out this possibility instantly because we do not see the moon at all, the apparent moon is visible because of the absence of information and as no light reaches us from the moon therefore there cannot be any ghost moon.

Even if we assume the existence of actual sun and actual moon and ghost sun and ghost moon, we will have the spectacular view of moon getting dark at one location and sun disappearing at another location.

In this case also, sun shall disappear at its apparent position (above the moon) and dark moon shall appear at another place. If we assume that light from the corona will also refract at the same angles then the corona shall appear behind the ghost moon and because there will be total absence of information from actual moon, there cannot be any ghost moon.

Obvious, atmospheric refraction does not affect the apparent size, position, or the shape of the sun.

However, this creates a technical problem because we know that light refracts when it moves from one medium to another. Since atmospheric refraction is an established fact and yet it does not affect the apparent position of the sun therefore we need to examine the role light plays in our sense of sight.

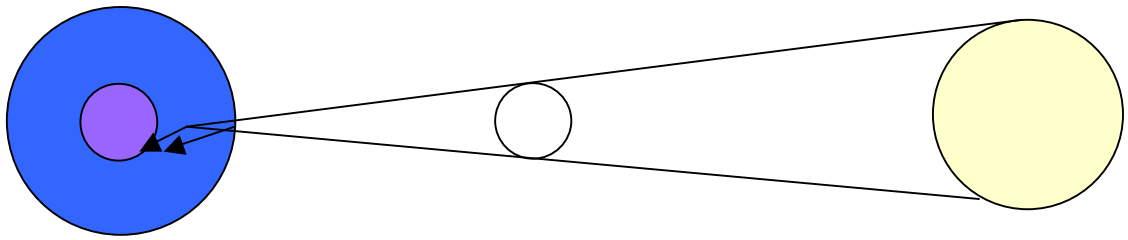
If we can see a light source like sun only when our eyes absorb the photons emitted by the sun then we shall see the solar eclipse 8 minutes 45 seconds after it actually occurs *i.e.* 8 minutes 45 seconds after the sun, the moon, and the earth are in one line. But we already know that we see the totality exactly at the time it actually occurs.

If we were required to absorb the photons emitted by the sun to be able to see it then we must see the affect of refraction because it has been experimentally proved that light refracts when it changes the medium but we have already seen that refraction has no effect on the apparent position of the sun.

Moreover, since the moon and earth are not static objects and as light takes 8 minutes 44 seconds to reach the moon therefore the light leaving the top of the sun when it is actually right behind the moon shall miss the moon and shall reach us therefore totality shall never occur esp. when earth, moon, and sun are in one line.

There is another reason why totality cannot occur. The expanse of the umbra is very narrow and in case of the latest total solar eclipse, its maximum expanse was just 258 kilometers.

Since, total solar eclipse had taken place in the morning therefore, as illustrated below, the light missing the sun must refract and reach the zone of total darkness because of high refraction and the shadow of the moon must shift considerably. We must not forget that we have not ruled out the possibility that refraction does not take place; on the contrary, we admit that atmosphere must and does refract light and therefore the shadow of the moon shall appear below the center line.



We have not noticed any such effect so far.

The light from the center point of the sun shall reach us almost 2.5 seconds earlier than the light from its farthest edge. If a reference object like moon is available then this difference shall manifest and distort the shape of the sun as sun shall overlap the moon when the moon covers just half of the sun.

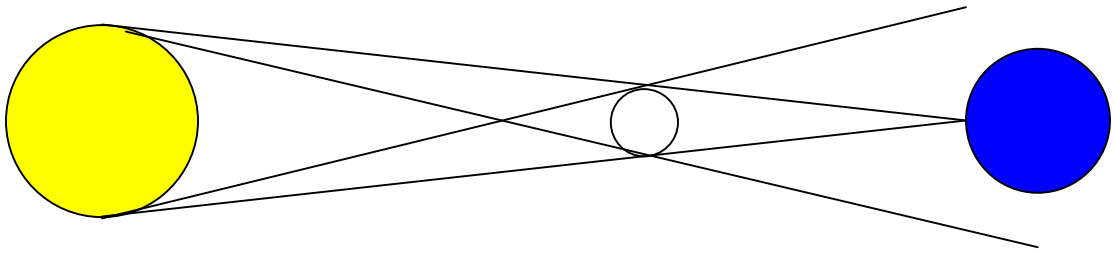
However, we know that sun's shape is not distorted at any time during any solar eclipse.

It is quite obvious that we are not required to absorb the photons emitted by a light source or the photons reflected off an object to be able to see the object. We can see the light at the place it is produced.

Since, we see the totality when sun is actually behind the moon therefore we can safely assume that we can see the moon and the sun exactly at the place they actually are at the time of our observation therefore we can conclude that we can see the light at time it is produced.

Now, there remains no doubt about the fact that we can see the light at the place it is produced and at the time it is produced.

There is absolutely no doubt that total solar eclipse occurs through the following mechanism



The only plausible explanation is that we can see the light at the place it is generated (provided it is in the observational range of our eyes).

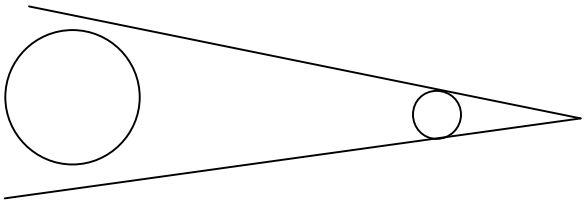
The entire mechanism through which we used to explain the total solar eclipse has collapsed and with it has collapsed several of our well-established theories.

Then, how do we explain the occurrence of the total solar eclipse?

The Reality of the Total Solar Eclipse

The above analysis shows that total solar eclipse cannot occur unless we see the sun and the moon where they actually are. Total solar eclipse confirms the fact that we see the sun exactly at its actual position. The apparent position of the sun is its actual position.

Since we need not absorb the light to be able to see it therefore mechanism of the total solar eclipse can only be explained by the line of expansion of our vision.



Therefore, as per this theory, the totality occurs when sun moves between the two lines as shown above. The mid-point of the totality is the time when the center of the mass of the sun, moon, and earth are in one line.

This is why, our prediction about the exact time of occurrence of solar eclipse and even the time of the totality is correct even though present causal explanation is not correct.

Conclusion

We can see the light without having to absorb it. Our eyes are sensors and not receptors and hence we can see the events as they occur. Since we can see the sun and the moon at the place they actually are, we can also see any event occurring simultaneously at the sun and the moon at the moment they occur. There is no failure of simultaneity and therefore information can be communicated instantly.

This analysis shows that our understanding of the mechanism of our sense of sight is not correct.

More importantly, it shows that information can be communicated instantly and therefore the theory of relativity is conclusively invalidated.

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*http://eclipse.gsfc.nasa.gov/SEpubs/20090722/TP214169a.pdf