

Explaining mind-boggling features of UFOs from the physical point of view

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ABSTRACT: This short communication presents an idea explaining the following three mind-boggling features of Unidentified Flying Objects (UFOs) – the features recorded by the US military while using various detection systems. First, some UFOs showed accelerations (measured by detection systems) of about 700 g. Second, UFOs can appear suddenly, almost instantaneously. Also, they can disappear suddenly, almost instantaneously. Third, these observed UFOs were capable to travel in air and water, back and forth, without any significant change of the dynamics. The idea is that those UFOs, whose perceived motion far exceeds the capability of our technology (such as 143 out of 144 UFOs analyzed in the official report by the US Office of the Director of National Intelligence), could be the three-dimensional projections of the light incoming from the fourth dimension.

Keywords: Unidentified Flying Objects (UFOs); three-dimensional projections; light incoming from the fourth dimension

The idea presented in this short communication concerns the latest official report on UFOs released by the US Office of the Director of National Intelligence. Out of 144 relatively recent observations of UFOs by the US military, recorded by various detection systems, 143 remained unexplained.

The three most mind-boggling features of these observed UFOs are the following. First, some UFOs showed accelerations (measured by detection systems) of about 700 g, that is, about 700 times the acceleration of the free fall at the surface of the Earth. Humans, even those who trained for space flights, can stand the acceleration of no more than about 10 g. Also, any man-made equipment would be destroyed at the acceleration of about 20-30 g.

Second, UFOs can appear suddenly, almost instantaneously. Also, they can disappear suddenly, almost instantaneously. Man-made crafts cannot do this.

Third, these observed UFOs were capable to travel in air and water, back and forth, without any significant change of the dynamics. Man-made crafts cannot do this.

Before presenting the primary point of the idea, let us first discuss the following. When a laser beam is shined to the Moon (as in some actual experiments) and the laser is rotated with some angular velocity, the bright spot can travel across the Moon surface with a very large linear velocity – even exceeding the speed of light.

At the first glance, this might seem to violate the physical law that objects cannot move faster than the speed of light. However, a more rigorous formulation of this physical law is that any *information* cannot be transmitted faster than the speed of light. A bright spot from a beam of light on any surface (whether on a wall or on the Moon) cannot transmit any information from one location on the surface to another. Therefore, there is no restriction on the linear velocity of the bright spot.

It should be emphasized that the light *reflected* from the surface does carry some information that can be received by the human eye or by a detector. For example, if a person shines a flashlight on a wall at the location where there is an insect on the wall, the reflected light carries back to the person the information about the existence of this insect and about its movements. The surface is two-dimensional. The electromagnetic wave (the light), which

carries the information to the person, propagates in the extra (third) dimension compared to the dimensions of the surface (and it propagates with the speed of light).

If on a surface, on which a light beam is shined, would live two-dimensional intelligent creatures, they would observe a very fast motion of the bright spot across the surface. However, as the bright spot moves from its original location where there was a two-dimensional insect to another location, the intelligent creatures would not learn that that at the original location of the bright spot there was an insect. No information would be carried by the bright spot from one location at the surface to another.

Now let us imagine that while shining a flashlight or laser on a distant surface, the person sharply changed the direction of the motion of the source of light: for example, the person moved it downward and then abruptly moved it sideways. In this situation, the bright spot on the distance surface would make an extremely sharp turn. If the two-dimensional intelligent creatures, living on this surface, would consider the bright spot as a material object and calculate the “acceleration”, required for this “object” to make such an extremely sharp turn, they would come up with a really huge number for this “acceleration” – the “acceleration” far exceeding the capability of their technology.

Next, let us imagine that the person was shining a flashlight or laser parallel to the surface and then sharply changed the direction of the light beam to hit the surface. The two-dimensional intelligent creatures, living on this surface, would observe a sudden appearance of the bright spot. Then in a while the person sharply changed the direction of the beam to be parallel to the surface. The two-dimensional intelligent creatures would observe a sudden disappearance of the bright spot. So, they would qualify the sudden appearance and disappearance of this “object” as something far exceeding the capability of their technology.

Further, let us imagine that on this two-dimensional surface there are dry regions (the “air”) and wet regions (the “water”). The bright spot can travel through the “air”, then through the “water”, then again through the “air” without changing its speed (controlled by the motion of the light source in the third dimension). The two-dimensional intelligent creatures, living on this surface, would consider this feature of the bright spot once again as something far exceeding the capability of their technology.

Now let us add an extra spatial dimension both to the “surface” and to the space, from which the light is shined. Now the “surface” becomes our three-dimensional world, into which the light is incoming from the fourth spatial dimension. In our world we see a three-dimensional “bright spot”. This “bright spot” is the projection of the light coming from the four-dimensional world on the three-dimensional “screen”, the “screen” being our three-dimensional world.

A rotational motion of the source of light would cause an extremely rapid motion of the three-dimensional “bright spot”. An abrupt change of the direction of the motion of the source of light would cause the three-dimensional “bright spot” to make an extremely sharp turn. As we, by using detectors, follow the motion of the “bright spot” and calculate the “acceleration”, required for this “object” to make such an extremely sharp turn, we would get a really huge number for this “acceleration”, such as, for example, the “acceleration” of about 700 g – the “acceleration” far exceeding the capability of our technology.

Next, if the source initially directed the light beam parallel to our three-dimensional world (in the four-dimensional space) and then sharply changed the direction of the light beam to hit our world, we would register a sudden appearance of the three-dimensional bright spot (the “object”). Then after a while, if the source of light would sharply change the direction of the light beam to be parallel to our world, we would register a sudden disappearance of the “object”. We would qualify these phenomena as something far exceeding the capability of our technology.

Further, as the light source rotates, its projection on the three-dimensional “screen” can travel both through the dry parts of the “screen” (the air) and through the wet parts of the “screen” (the water) without changing its speed. This is similar to the less dimensional situation discussed above: the light from a three-dimensional world shining on the two-dimensional screen/surface. Observing this by our detectors, we would consider this feature of the three-dimensional “object” (the bright spot) once again as something far exceeding the capability of our technology.

So, the idea is that those UFOs, whose *perceived* motion far exceeds the capability of our technology (such as 143 out of 144 UFOs analyzed in the official report by the US Office of the Director of National Intelligence),

could be the three-dimensional projections of the light incoming from the fourth dimension. By varying the intensity distribution of the cross-section of the light beam at the source (for example, by using various filters), it would be possible to create any shape and form of the three-dimensional projection that we observe, including the shape of “flying saucers” and so on. By varying color filters or their combinations, it would be possible to make the three-dimensional projection of any color or their combinations.

A question might be asked: what is the light, which is the electromagnetic radiation, in four dimensions? The information sufficient for answering this question has been provided, for example, by Corben [1]. He showed that in the world of four spatial dimensions, the electromagnetic wave propagates perpendicular to the plane of the oscillating electric and magnetic fields of this wave – as in our three-dimensional world. The only difference is that there is also a weak gravitational field oscillating in the direction of the propagation of the electromagnetic wave and that typically this effect (the additional gravitational field) is completely negligible. So, the electromagnetic wave in four spatial dimensions is essentially the same as in our three-dimensional world.

It should be emphasized that up to this point the discussion was based on the standard physics without introducing any new physical laws.

Next, it might seem that since the light is coming from the world of four spatial dimensions, then the source of light should be controlled by four-dimensional intelligent creatures (this would belong to realm of science fiction). However, this does not have to be the case. In the physics literature there are lots of papers discussing the possibility of *parallel* three-dimensional worlds (parallel Universes). So, the source of light could be located and controlled in a parallel three-dimensional world by three-dimensional relatively advanced civilization that developed the capability to manipulate the electromagnetic radiation in the way described above. By projecting the light into our three-dimensional world and detecting the reflected light, they monitor our technological capabilities.

Let us compare this scenario with the only other hypothesis brought up for explaining 143 unexplained UFOs from the official report released by the US Office of the Director of National Intelligence. At best, these unexplained UFOs are proposed to be drones. The mind-boggling features of the motion of these drones point out to their extraterrestrial origin. However, the hypothesis of extraterrestrial drones has at least the following three disadvantages compared to the scenario of the UFOs being the three-dimensional projections.

First, if the observed UFOs would be extraterrestrial drones, the advanced civilization controlling such drones, would receive the information only in about hundreds or even thousands years – because so far we did not detect any extraterrestrial civilization separated from us by a smaller number of light years across our three-dimensional world (our Universe). In distinction, in the scenario of the UFOs being the three-dimensional projections, the parallel three-dimensional world could be just few light years (or less) away across the four-dimensional space. Therefore, the information carried by the reflected light, could reach those who control the source of light in just few years or less. Monitoring our technological capabilities with just a few years delay makes more sense than doing this with the delay of hundreds or thousand years.

Second, if the observed UFOs would be extraterrestrial drones, it would require the extraterrestrial civilization to be unbelievably advanced – to be able to construct spacecrafts capable of withstanding 700 g acceleration and interchanging the travel in the air and under water without any significant variation of the speed. In distinction, in the scenario of the UFOs being the three-dimensional projections, the other civilization has to be only relatively advanced – just to be able to manipulate the electromagnetic radiation in the way described above.

The last but not least – the most important: the hypothesis that observed UFOs are extraterrestrial drones fails to explain the sudden, almost instantaneous appearance of these objects and their subsequent sudden, almost instantaneous disappearance. In distinction, the scenario where the UFOs are the three-dimensional projections easily explains this.

References

1. H.C. Corben, Phys. Rev. **69** (1946) 225.