

Universal Physics Journal

Question 7: What is curved space?

Ethan: Please explain curved space. Brett W., Boston, Massachusetts, USA

Hello Brett W:

I'll be happy to take a look at the Modern Physics concept of "curved space". If you are in a hurry and just want the short answer, "curved space" is science fiction.

First of all, understand that space is nothing more than room. The space between Earth and its captured Moon is the room between these two bodies. Now some portions of this room may contain matter and other portions may be completely devoid of matter. But the presence or absence of matter has no effect upon the space between Earth and the Moon. Space is just room and nothing more.

The space between Earth and the Moon is filled with countless expanding energy rings that are traveling through this space in every direction after having been previously emitted from near and distant components of matter in the Universe. For this reason, I often refer to space as containing the Sea of Energy. Whenever I refer to energy, understand that energy has but two states. Either energy is being stored within the components of atoms or energy is expanding at the speed of light (energy) through the space between components of atoms. All other professed states of energy such as "kinetic" energy or "potential" energy are imaginary, as in unreal.

The only process that can be applied to space is its dimensional measurement. How big is this space? Space cannot be weighed for there is nothing to weigh. It does not matter if the space contains matter for any weighing that may occur is a weighing of the matter, not of the space. One cannot take the temperature of space. If the space contains matter then the matter will have a temperature but not the space it occupies. If a temperature instrument is placed in empty space (devoid of all other forms of matter) and the instrument displays a temperature reading, it is indicating the temperature of its own matter while receiving portions of the myriad of incoming expanding energy rings from Universal matter located both near and far. The indicated temperature reading so caused is not actually the temperature of this empty space. As long as there is no matter in this empty space, the expanding energy rings that pass through this space depart with the same amount of energy that they contained when they entered the empty space. No energy is left behind to warm the empty space. Why? Remember the two states of energy? Either energy is being stored in components of atoms or energy is traveling at the speed of light through the space between components of atoms. Since there are no components of atoms in this empty space, the energy passes right through without leaving behind even a trace portion of itself. Again, space is nothing but room.

If you are confused because you have accepted at an earlier time that energy is somehow composed of particles called "photons", it is safe for you to discard such thoughts. Energy travels in an organized expanding-ring waveform, a little like water waves that travel in an organized expanding-ring waveform away from the impact site where a stone is dropped into the surface of a pond. "Photons" or energy "particles" could not possibly remain organized relative to

each other so that a "photon" born image of a distant galaxy that travels through space for 10 billion years will actually arrive at Earth with every remaining "photon" particle properly and correctly arranged so that the Earth astronomer will receive a true image of the distant galaxy. Only pure energy traveling as an organized waveform could remain organized to deliver the correct image.

Now some scientists want us to believe that space becomes "curved" due to the nearby presence of material objects such as the Sun or Earth. These thoughts stem from the work of Albert Einstein in his General Theory of Relativity. Right away you may recognize that since space is nothing but room, then space is not composed of any matter that can be determined to be in an arrangement that is "straight" in the absence of nearby bodies and later "curved" when such bodies arrive nearby. Space is just room that may or may not contain matter. Matter can be arranged in a straight manner or in a curved manner. That is well and good. But the room of space is not subject to any such modification of "shape". An energy emission from a nearby body will pass right through a given matter-free space leaving not even a trace of the energy emission behind to cause any such imaginary physical change to the "shape" of the given space. It is simply not possible to change the "shape" of nothing. Nothing is always shapeless.

Albert Einstein must have had something in mind when he decided that space could indeed become "curved". Understand that Einstein had a general disdain for the work of his competitor, Isaac Newton. Newton spoke extensively about the absolute nature of such concepts as time, force and acceleration. Einstein's focus was to prove that only relative associations exist. Thus to Einstein, time was relative to each observer as was force and acceleration. So when Newton proclaimed that space was absolute and that the "spirits emitted" into the space surrounding Earth were responsible for causing the generation of absolute inward-directed gravitational forces within the Moon's matter that forced the Moon to travel its curved (accelerated) orbital path around Earth, Einstein objected. He did not accept Newton's recognition of the many absolutes. He did not accept that acceleration was absolute. In fact he did not accept that the Moon's acceleration toward Earth was caused by any such thing as a Newtonian gravitational force. Instead, Einstein thought that everything was relative to the observer and further that the observation of any observer was as correct as the observation of any other observer.

Using Einstein's relativity principles, the only correct way for an Earth-bound observer to view the Universe is to accept the Ptolemy view that the Sun, the Moon, and the rest of the planets and distant stars orbit a non-revolving Earth from east to west about every 24 hours. Perhaps the Earthbound observer might notice that the Sun travels around Earth a bit faster than does the Moon, but that is about it. There is only room in this example for observation. Logical thought is not required nor even appreciated.

Using Einstein's relativity principles, a Moon-bound observer will view a somewhat different but equally "correct" Universe. To the Moon-bound observer, standing on the side that always faces Earth, the Moon is stationary and Earth is this interesting sometimes white and blue ball and sometimes shaded ball that spins about its own axis while remaining in a fixed position overhead. Meanwhile every other Universal object slowly orbits the Moon from east to west about once

every 27 days including the Sun which has the curious habit of hiding behind Earth from time to time.

So, while the Earthbound observer might be correct in determining that acceleration is occurring to the Moon as it travels the curved path of its orbit of Earth, according to Einstein's view, the Moon-bound observer is equally correct in determining that no such acceleration is occurring to Earth since it obviously remains parked overhead at all times of the year in total defiance of any force-based theory for gravitation.

Here it should be obvious to you that neither of these observations represents anything close to the truth regarding the operation of the solar system. But Einstein saw these kinds of homocentric observations as being of equal value, for in his relative version of events, each observer always observed the truth.

During his challenge of Newton's force-based theory of gravitation, Albert Einstein became particularly interested in the event known as "free fall". He interviewed a construction worker who survived a fall from the 5th floor of a building. The worker told Einstein that rather than feeling like he was falling down to the ground, the incident felt more like he was floating free of any forces while the ground was rushing up to his position. I think it was likely that this interview helped to convince Einstein that the acceleration of such a gravitational event was not caused by any kind of force. Yet it was clear to him that Earth's nearby presence was required for the event to occur. If no gravitational force existed, then perhaps "curved" space was the answer to his search. If successful, this novel model for gravitation would effectively cancel the work of Einstein's absolute rival, Isaac Newton in regards to the study of gravitation.

Before we go any further, I need to know if you have studied Article IV: The Nature of Force. There you will learn how gravitation is a Type 1 or Type 2 internal force that is generated separately within each component of an object's matter. In the case of Einstein's falling worker, prior to the fall, his downward force of gravitation takes the form of an internally-generated Type 2 force that stacks up or increases down through his body to reach a maximum at the bottoms of his feet where they contact and are fully supported by the 5th floor of the building. This is the same non-accelerative event we all experience whenever we stand on our feet against Earth's surface. When the worker loses the support of the building and begins to fall, the force of gravitation switches from a non-accelerative Type 2 action force to an accelerative Type 1 action force. Type 1 internal forces are not stacking forces. While they continue to be generated separately within each components of his matter, each Type 1 internal force of gravitation is now causing its own supporting Type 1 internal acceleration/Reaction force within each same component of matter. Since the acceleration/Action and acceleration/Reaction pair of forces interface with each other internally within each same component of matter, there is no stacking of forces present in the falling worker's body. This is the reason the worker feels "free" from the effects of the forces of gravitation. He is no longer experiencing the stacking of forces and attendant compression of his body against any external surface. Instead, he feels "free" from such compressive Type 2 internal stacking forces and unaware of the non-compressive Type 1 internal action and reaction forces that continue to remain present throughout the duration of his accelerated fall.

Now, Newton's LAW I tells us that it always takes a force to accelerate (change the motion of) an object. By all accounts, the falling worker is accelerating toward Earth. But some time after listening to the falling worker's account of the accelerative event, Einstein must have decided that Newton's LAW I did not apply during acceleration being caused by gravitation. Instead Einstein decided that gravitational accelerations were forceless accelerations which he began to refer to as "free fall". Thus, according to Einstein's theory, an object in "free fall" is an object that is free from all outside forces for the duration of the event. If the "free falling" object, such as the Moon, is observed to travel a curved path during its "free fall", then Einstein decided that somehow the space through which the object is traveling must be curved. Thus the forceless concept of gravitational acceleration during "free fall" was born. Einstein entitled this theory The General Theory of Relativity which began, in part, as his complex answer to the simple question: "Why did the construction worker feel free of any gravitational force while accelerating from the building's 5th floor to the ground floor?" Acceptance of this new theory set Newton's LAW I aside as being incorrect during "forceless" gravitational acceleration events such as during the worker's "free fall" from the 5th floor and during the "free fall" of the Moon in its orbit of Earth.

Today we know after reading Article IV that Einstein did not understand and recognize that gravitation is an internal Type 1 or Type 2 action force. In Question 3 we learned that Einstein also misunderstood the source of the common everyday internal Type 1 or Type 2 acceleration/Reaction force of matter. Based upon the Lost Logic Principle, every one of his conclusions made beyond the point where an understanding of these two distinct internal forces is missing are suspect. Logic became lost to Albert Einstein early on in the development of his General Theory of Relativity.

For example, if the Moon is truly traveling in forceless "free fall" along a path through space that is curved around Earth due to Earth's presence, then, using Einstein's forceless theory of gravitation, there is no reason that any sort of velocity requirement be necessary in order for the Moon to maintain its current orbital radius from Earth. In other words, if the Moon truly is in "free fall" and therefore traveling without the influence of any outside force then it should be able to maintain its current distance from Earth while decreasing its orbital velocity to say 54 days per revolution or 108 days per revolution or perhaps even stop in its orbit of Earth altogether. Once stopped, relative to Earth, with no forces of gravitation acting within the Moon's matter, as predicted to be true by Einstein's General Theory of Relativity, what physical reason would there be for the Moon to begin accelerating toward Earth? No reason at all. So if the Moon were magically stopped in its orbit of Earth, do you think it would stay there like Earth appears to stay overhead to an observer on the Moon?

NASA engineers have some experience in these matters. Practical experience has shown that the orbital velocity of an object in Earth orbit, such as a satellite or the Space Shuttle, must be precisely maintained at a certain value in order for the orbiting object to maintain its radius of orbit about Earth. Such engineers understand that if the Moon's orbital velocity is reduced or increased even the slightest amount, the Moon's radius of orbit will be affected. If the Moon were to be stopped altogether in its orbit of Earth, Einstein's General Theory of Relativity notwithstanding, we would all be doomed!

Why? Experience and logic show that gravitation is not caused by Einstein's imaginative "curvature" of the nothingness of space. Gravitation is a real and true force. You know this to be true when you measure the accumulative Type 2 forces of your own Earth gravitation by stepping on the compression spring scale at home. In nearly the same manner, the force of Earth gravitation continually acts in an inward direction on each component of the Moon's matter. Why must the Moon maintain a certain average velocity around Earth in order to maintain its current orbital radius? The inward-directed internal Type 1 action forces of Earth gravitation being generated within the Moon's matter cause inward-directed acceleration for the Moon. At any given distance from Earth, a certain magnitude of acceleration of the Moon in Earth's direction will occur. If the Moon's orbital velocity is too fast, this given amount of acceleration toward Earth will be too little to cause the Moon to maintain its current orbital distance from Earth so the Moon will initially increase its orbital distance from Earth. Conversely, if the Moon's orbital velocity is too slow, this same given amount of acceleration will be too much to allow the Moon to continue maintaining its current orbital distance from Earth so the Moon will initially decrease its orbital distance from Earth. All the while, these inward-directed internal Type 1 gravitational acceleration/Action forces present within the Moon's matter generate their own equal and opposite reactionary support forces in the form of the outward-directed internal Type 1 acceleration/Reaction forces in full agreement and support for both Newton's LAW I and Newton's LAW III.

There is no such state for an object as Einstein's "free fall". No falling object is "free" from the action of outside forces. Newton specifically wrote LAW I, regarding how it always takes impressed forces to cause acceleration for an object, to make clear to the rest of us that there are no magical or occult causes for the acceleration of an object. Force and only force is responsible for the acceleration of an object. Even energy does not directly cause the acceleration of an object for it first must act as the cause of some internal force within or external force against the accelerating object. Newton's specifically wrote LAW I to put a limit on the imaginations of less logical scientists. The lesson we must learn here is simply that an accelerating object is always being forced to accelerate. Newton's LAW I clearly states this truth for everyone to learn. Newton's LAW I is correct, not because Newton wrote it, but because it is an accurate representation of one of the laws of nature which can be referred to collectively as Universal Laws. It matters not who was first to recognize and write this law down. It takes "impressed forces" to change the motion of an object is a Universal Law, plain and simple. To take a position against this truth, as did Einstein, is to take a position not only against his rival, Isaac Newton, but also against logic and finally against one of the most fundamental laws of this Universe. To follow Einstein's theory of a "forceless" gravitation caused by the "curvature" of space is to abandon the reality of Newton's grand recognition of one of the Universal Laws of Force. Newton has shown us the truth about acceleration and its forceful cause. Einstein's theories have led us away from that truth. My role in all of this is to help guide the science of Physics away from Einstein's misguided theories and back onto the path of reality as first presented by Galileo and later advanced by Newton. Until this task has been accomplished, no real progress will come to the science of Physics. In the meantime, the oxymoron known as Modern Physics will remain conceptually frozen in the 20th Century.

Thanks for the challenging question, Brett.

Ethan Skyler
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