Oreka Particle Theory: Explanations of Dark Energy, Dark Matter, and Gravity Mysteries.

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Abstract

This article describes Oreka Particle Theory in which when gravity affects particles without mass, it creates an energy imbalance, which results in the creation of an energy called oreka particles. Oreka theory requires that massless particles do not create a gravitational pull, and gives evidence for this, which is similar to what disproved The Tired Light Theory. In Oreka Theory, dark energy is composed of oreka particles and they also are responsible for the why spiral galaxies spin the way they do. Oreka particles are also not a fluid.

Gravity affects particles with mass vs. without mass differently.

I've tried hard to explain this clearly, but scientific papers end up looking like gibberish, even when someone tries to use good communication skills. Usually images will make it clearer. If you become lost, I made animations. http://www.youtube.com/user/orekaparticle

The universe has four fundamental forces, magnetism, gravity, weak interaction, and strong interaction.

In magnetism, which we're all familiar with, it's simple. You hold a magnet and bring it near a paperclip and without touching the paperclip, it picks it up and holds it.

What is happening is the magnet creates a magnetic field. It is not creating photons and sending them everywhere as this would mean it would be creating massive energy. No, instead the magnetic field is just a fundamental force of the universe. When it connects with something that can be magnetized, say a paperclip, still no photons came out of the magnet, only the magnetic field. But, what happens is the magnetic field creates virtual photons. These virtual particles last for an infinitesimal amount of time and simply transfer electromagnetic energy to the atoms being magnetized. Once the energy is transferred, they're used up and they vanish. This happens over and over and that's how magnetic force works.

The magnetic field moves at the speed of light. So let's say there's a two particles with opposite magnetic charge so they will pull together.

They send out their magnetic fields. Well these are actually a sphere around each particle but they're drawn a little more simply so let's pretend these are circles around them instead of the simple

drawings they are.

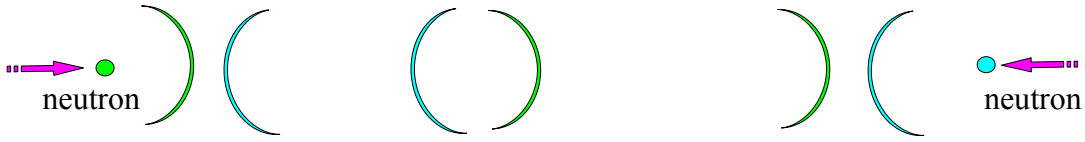
The magnetic fields go at the speed of light and let's say one particle moves quickly before the field reaches the other.

And so now, the electron is moved toward where the positron used to be even though it now has moved. So the magnetic field does not reach out all it once, but it travels at light speed. The strength is equal to a sphere that expands around the particle. And the magnetic force is the exact same, but spread around the expanding sphere so the bigger the sphere gets, the more thin the magnetic field is. So it gets weaker far out. But it expands forever as far as we know.

Gravity seems a mystery. It's poorly understood because gravitons have not been detected. But I theorize gravity happens very much the same way as magnetism.

Mass creates a gravitational field that moves at the speed of light. And while gravitons have not been found, we've found that it does move at the speed of light. The official test was when Jupiter moved in the path of photons from a quasar JO841+1842. But if it did not move at the speed of light, then spacecraft would fly wrong.

I could do a planets analogy, but two particles is much simpler. Again please pretend the flow I drew of electromagnetic and gravitational forces are spheres around the particles instead of simplistic illustrations.

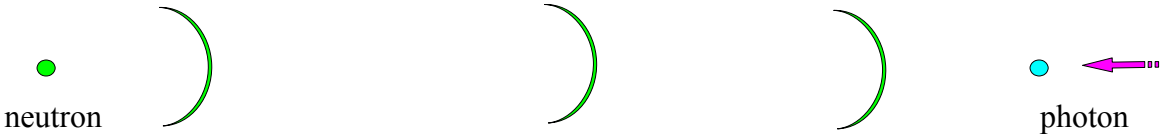


Two neutrons send out the force of gravity and then this force creates virtual particles. The virtual particles are basically mechanical energy in a form. The particles merge into the neutrons and their energy goes and gives the neutrons mechanical energy to fly toward each other. If the neutrons are blocked by something, they still have this energy, it merely exists as potential energy.

The virtual particles created are called gravitons. They aren't really that special compared to virtual photons in magnetic reactions. They're both embodiments of mechanical energy telling things to

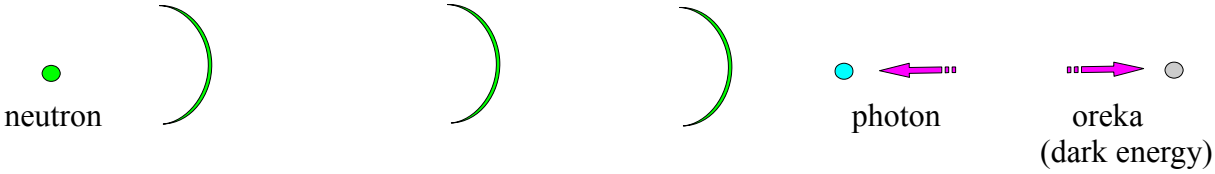
pull together. The only difference is virtual photons are based on charge and virtual gravitons are based on mass.

But what happens when it's a neutron and a photon?



When there's magnetism, either attraction or repulsion, then a virtual particle is created to act on another particle; it does it because something is also sending out a magnetic field. When gravity creates virtual particles to act on another particle, it does it both (1) when something is sending out a gravitational field, and (2) when something is not sending out a gravitational field.

My theory is that when gravity pulls on a particle without mass, there is an imbalance and an energy (aka. particle) must be made to right this imbalance. Nature just does this type of thing. If it did not do things for balance like this, time and space would lose all symmetry. It's like a circuit--gravity on mass is closed and gravity on nonmass is open.



I define the oreka particle as:

- All gravitational energy applied to massless particles must be balanced by the creation of gravitational energy in the opposite direction. This balance is not satisfied until the energy is released into mass.
- The oreka only interacts with mass.
- It does not affect gravity, electromagnetism, the weak force, or the strong fundamental force. They also don't affect it.
- It has no mass and combines in the same space like photons do.
- The gravitational field that creates it does not lose strength and will continue to create more orekas whenever it alters the path of photons, including more influence on the same photon repeatedly.
- Every oreka flies directionally away from the source of gravity at the speed of light.
- Orekas do not lose energy over distance. Only after connecting with mass to transfer its energy, does it disappear.

It basically is dark energy, but calling it dark energy confuses it with other theories. It is not an anti-graviton by definition, so it cannot be called that. The best name I could come up with was oreka, from word for balance and equilibrium in the Basque language. Usually when I talk about orekas, I talk about dark energy.

Oreka particle theory is based on that massless particles do not create gravity.

Oreka particle theory is not based on the mere energy loss from gravitational redshifting of light, but rather the imbalance of gravity acting on objects without mass for both gravitational redshifting and blueshifting. If light does create gravity, then the imbalance would be weaker and mainly based around massless particles traveling at light speed.

Testing whether massless photons create gravity seems difficult, but a good way to prove it is by using the same proofs to disprove The Tired Light Model, which was once used to explain galaxy redshifting by saying light wore out over distance and the redshifting now believed to be from expansion was merely proportional to distance and the light wearing out. If light created gravity, then no matter how weak it is, it's strongest nearby and light would exert a gravitational pull on itself so over millions and billions of years the effects of tired light would be seen, specifically blurring, redshifting based on distance, and all the things that would've proven Tired Light Theory correct.[21]

Why is mass significant?

Our universe is where there is energy that exists in geometric form, such as length, width, height, and such. Energy doesn't have to be in this form, such as if ideas were energy and had their own universe then they would be arranged by meaning.

Our universe has three main dimensions (not counting any extra sub-dimensions) because the energy is in this form. Galaxies aren't jumping around randomly from one side of the universe to the other because it keeps this same form, for whatever reason. For the same reason, the speed of light isn't radically different at all different parts of the observable universe.

Aside from virtual particles (e.g. W & Z bosons that last 3×10^{-25}sec), regular particles with mass cannot flow through each other and those without mass can flow through one each other. This is from the quantum physical property of spin, but it's mainly actually about non-virtual particles having mass vs. not (every non-virtual particle with mass has a spin of 1/2 while the massless ones have whole numbered spins).

I personally hypothesize that the dimensions of the universe are related to the mass in it, and that electromagnetic waves can only flow so far from mass. What happens when they get too far, I could only guess. This is not part of Oreka Theory, though.

Mass bends the universe's dimensions, curvature of space plus rate-of-time and such. When mass pulls nonmass, the universe does not have its dimensions changed which is an imbalance.

If this theory is true, what would the universe be like?

1. Large masses will create orekas, but since the orekas will fly away from the mass, they will thin out. The only result will be a

net reduction in the large mass's gravitational effect on other mass but the large masses will affect photons just the same. The net reduction in gravity depends on how much photons their gravity affects.

For instance, let's say there's a planet and a star of the same mass and size. This is an analogy so let's pretend the planet won't collapse. The planet isn't putting out much photons so its gravity produces few orekas while the star is churning out a ton of photons so it will make tons of orekas as its gravity bends the path of light.

Since a star would have the most noticeable effect, then is there any unexplained reduction in gravity on mass from a star?

Yes, from our own sun.

People discovered our sun's planetary orbits are widening faster than they should be. This is taking into account the sun losing mass by radiating energy, the sun's radiation hitting the planets, the sun transferring its rotational energy to the planets, and any potential changes in the gravitational constant. [1]

2. Orekas are the missing force that moves space clouds ("molecular clouds") in galaxies.

These are the three main large galaxy types, all of which are flat because they spin.
a) Spiral galaxies -- They have a bunch of dense stars in the middle and arms of molecular clouds spinning around it. The clouds have a lot less mass than the center but still form stars.
b) Elliptical galaxies -- They're saucer-shaped. Their mass is mostly evenly distributed.
c) Lenticular galaxies -- They're like an elliptical except there are rings, not arms, of molecular clouds around it. The clouds have hardly any stars in them.

Galaxies surrounded by others are getting bombarded by orekas all around it. It's like air pressure but more like if wind was blowing on something from all directions at once. It exerts a compacting pressure.

All galaxies have small bits of particles in it, called interstellar medium, but they're usually too thin to soak up all the orekas. Where there aren't that many molecular clouds, like ellipticals, then orekas pass right through them, hitting a few planetary bodies but having little effect. Where there are a lot of molecular clouds, which is the arms of spiral galaxies, then the clouds will soak up all oreka particles.

But wouldn't the orekas just compact all the molecular clouds into the center of a galaxy so there couldn't be spirals? Well it turns out that these molecular clouds are like the earth's atmosphere. Hot air rises from the galaxy's center (on a two-dimensional plane though) and cold air drops back to the center. So if not for orekas, spirals would lose their molecular clouds. The flow is called a galactic fountain.[2] And what causes the molecular clouds to get hotter is the stars [3] and spiral galaxies have most of their stars at the galaxy's center. This galactic fountain keeps orekas from

compacting all molecular clouds.

Spiral galaxies have an interesting property where the center and galaxy arms spin at the same rate. There isn't enough mass in the galaxy arms to keep this up and if you added mass to only the arms, then the spiral would break down: the clouds would mostly turn to stars, the galaxy would change more into elliptical, and the extra mass would gravitate toward the center of the galaxy instead of the arms. So the only way these clouds can rotate at the speed of the core is for an energy pressure with no mass pushing them.

And when spirals have separate arms, what keeps the arms from joining is the gravity of the spiral's own galaxy creates orekas in the void between the spirals. These constantly generated orekas flow and push on the arms so they don't join.

Now the prevailing theory is that what causes the arms of spiral galaxies to spin as fast as the center is extra mass, but some invisible extra mass, called dark matter. While matter only detectable by gravity may exist, based on oreka theory, it is not what is causing spiral galaxies to rotate as fast at the outer edge spirals as the center. Now I gave earlier reasons why extra mass would not work, but the one that I gave recognized officially as a problem with dark matter theory is the cuspy halo problem, that the matter would fall into the center of the galaxy and it would mean there still wouldn't be extra mass in the spiral arms.

Even if galaxies had a huge amount of hidden mass, why doesn't it go to the center? Globular clusters, the massive circle of stars orbiting the centers of galaxies show little evidence they have dark matter in them. If you look at photos of them, you'll see they also have little to no clouds.

Elliptical galaxies also lack signs of dark matter. For example, the movement of Messier 105 (also known as M105 and NGC 3379) shows an absence of dark matter. [4]

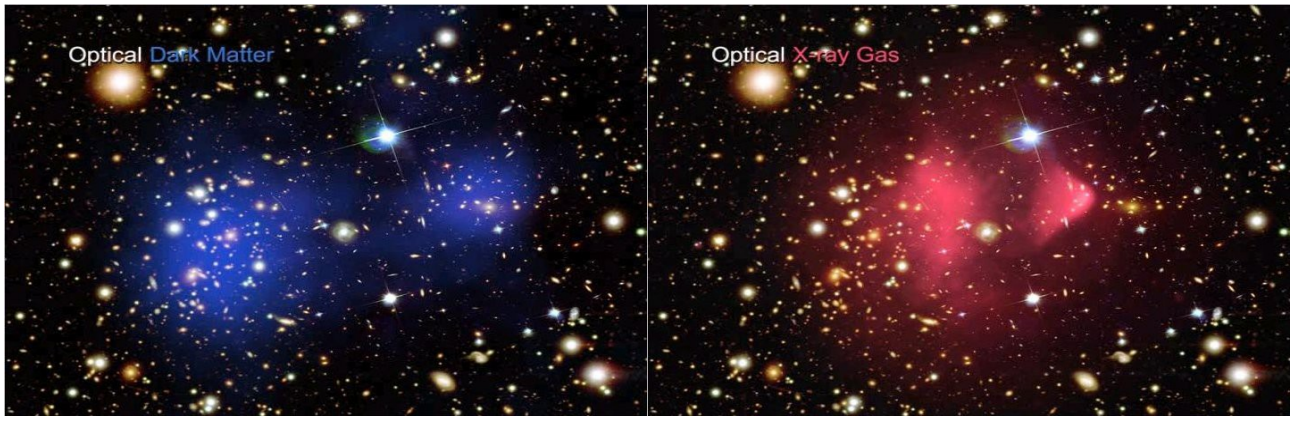
There's a lot more examples. VIRGOHI21 is an extended region of neutral hydrogen (HI) in the Virgo cluster that has no stars, only gas, and has a bunch of unexplained movement that is not accounted for by its mass. But if it had more mass, it would condense into stars. HVC 127-41-330 is another cloud moving faster than its mass. If it had more mass, it would be forming stars.

Our galaxy, The Milky Way, has two large molecular clouds orbiting it, the Large and Small Magellanic Clouds. These orbiting clouds block the push of orekas and exert a net pull on The Milky Way, distorting it.[5] And gas clouds like to connect,[6] which holds true in my theory.

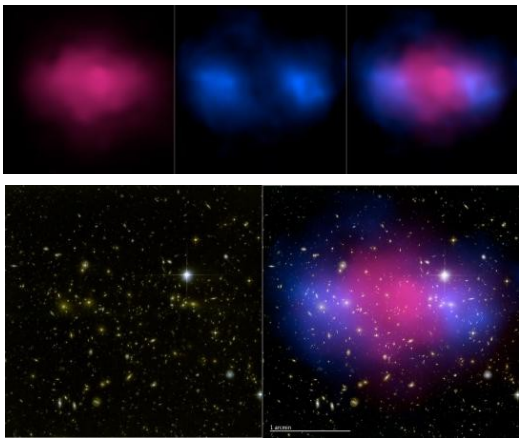
The most up to date theory about dark matter is that it's a halo around galaxies, around the farthest molecular clouds. If that were true, then I would think galaxy collisions would be different. In looking at photos of galaxy collisions, [16] what you'll see is the cores of spiral galaxies--where there's lots of stars and not so much molecular clouds--will usually be staying separate. But then the molecular clouds circling the galaxies will link up. If the galaxies were surrounded by a halo of dark matter, which based on theories is about five times the mass of each spiral galaxy, would show signs of enormous gravity pulling the whole galaxy together at once. Rather it works like the molecular clouds link up.

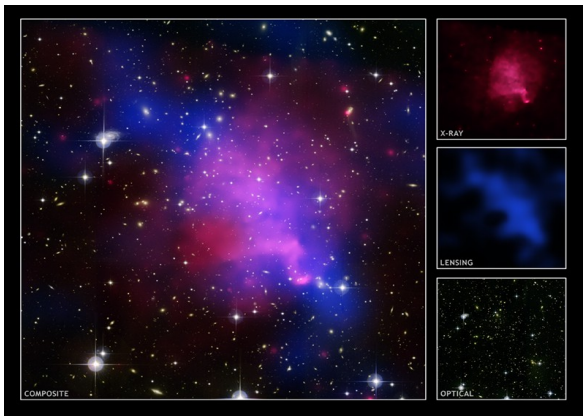
Another issue is that if there were dark matter halos, there would be a lot more satellite galaxies and debris orbiting large ones which isn't seen. Computer simulations also find galaxies simulated with dark matter come out too small or have too little spin.[7] The dark matter cosmology predicts that there will be more dwarf galaxies than there are and they will have more mass. Instead what is

found is they have less galaxies and less mass.[8]



Further evidence is The Bullet cluster (1E 0657-558), a collision of two galaxy clusters. [17] If you first see the picture with the blue regions, those are the masses of the galaxies. Supposedly a lot of invisible mass is in those blue regions, but galaxies are also in those regions with visible mass. Next see other the red highlighted image. Do you remember how hot clouds rise away from galaxies (yes these are galaxy clusters but still)? Do you also remember how in my theory, clouds absorb orekas and have a net force pushing them together? The red regions are clouds too thin to be molecular clouds and too thin to be visible, but they still are clouds and instead of spread out, they are clumped together. The clouds instead of following the main gravity, stay to themselves in very thin clumps.





Another example is Galaxy Cluster MACS J0025.4-1222 in the left two pictures.[18] Clouds that too thin to be seen by visible light will obviously have low mass and still clump together because of how orekas work on clouds in outer space. Abell 520 "The Train Wreck Cluster" is another instance in the right picture above.[19]

And then we come to dwarf spheroidal galaxies. Astronomers have spotted a number of them orbiting our galaxy. They are all old galaxies that formed 10-12 billion years ago. Most have not made new stars for billions of years. But what is interesting is the stars are moving too quickly for the mass of anything visible to do it and they move at different rates.

Well first of all, the shape of those galaxies is a sphere. Most galaxies are circular, not spheroidal. Galaxies are circular because they rotate and spheroidal because they don't. (Leo I, I know has been at least confirmed not to rotate.[20]) Galaxies and solar systems rotate because they have a large

mass in the center, which of course rotates. Even black holes rotate.[9] Instead with these dwarf spheroidal galaxies is what little mass these galaxies have is clumped into a sphere.

I tried to find gravitational lensing studies that would confirm how much mass they have and it appears not much has been done. The only article that turned up was, "A gravitational lens candidate behind the Fornax dwarf spheroidal galaxy".[10] It revealed no evidence of dark matter.

In these galaxies, the less gas and dust in them, the more they move. The Leo group of dwarf spheroidal galaxies have the highest amounts of gas and dust of the dwarf spheroidals and their stars move the least in ways not accounted for by their mass. On the opposite end, the Segue dwarf spheroidal galaxies have pretty much no gas or dust at all and their stars are moving in extreme amounts not accounted for by their mass. Some scientists have speculated that if it was not extra mass moving the stars, then the excessive star movement might be because the galaxy's form is being disrupted.[11]

Based on my theory of how orekas interact with gas and dust, it is the orekas pushing on gas and dust which keeps these satellite galaxies from experiencing tidal forces. And the reason these galaxies keep from being ripped apart [12] is because they don't rotate and it's easier to maintain their cohesion in a non-rotating sphere than a rotating saucer. So when tidal forces tug on it, instead pieces coming off it like a rotating galaxy, it keeps together. And when they have some clouds, then it helps them be more stable.

3. The universe will expand in proportion to the energy between galaxies. This energy is mostly cosmic microwave background radiation and when this is fully absorbed, the universe will not expand any longer and begin to compact.

We've got galaxies here and there creating gravity. They create electromagnetic energy as well, but most of the electromagnetic energy in the universe is from cosmic microwave background radiation. Galaxies are mostly empty space so orekas mostly go off into space and leaves each galaxy. The orekas continue at the speed of light and flood the void between galaxies. They continue to exist until they strike anything with mass, which they then push on. Where there is a lack of these, it makes a vacuum in a sense and galaxies are pushed there. But the universe retains its quasi-flat shape because that shape is where all the orekas are coming from.

Astronomers have discovered that there are mysterious flows of galaxies in space not explained by how gravity decreases over distance. Even dark matter would clump around mass. These flows are uneven. More importantly, the galaxies are flowing toward some spot with no discernible mass, which goes with my theory that a lack of push from orekas some one location becomes a net pull and so the galaxy clusters are going to where there is a lack of orekas pushing on them.[13]

But why is the expansion speeding up? That's simple. Because between galaxies are almost entirely photons, mostly in the form of cosmic microwave background radiation. So the farther out the galaxies spread, the more orekas are created. Of course since gravity falls off to almost nothing, the speeding up won't speed up too much. And since the cosmic microwave background radiation loses energy by thinning as the universe expands, the expansion eventually will slow. If the cosmic microwave background radiation ceased entirely, then the galaxies should start merging together.

If the universal expansion phenomenon was not due to orekas and instead affected photons like gravity, then there would not be the anomaly of extra energetic photons. When photons (including cosmic microwave background radiation) travel through galaxy clusters, the pull of gravity gives the photons more energy, which gives the photon a smaller wavelength. When the photons exit, they lose some of this energy, but keep twice as much as expected by dark energy models. This is because the expansion of the universe does not directly affect photons as my theory instructs.[14] Related to this is the Late-time Integrated Sachs–Wolfe effect.

Please understand that the mass of a galaxy does not make the it expand from other ones. It is pressure of orekas from other galaxies and this pressure takes the speed of light to reach mass.

And I don't know if orekas have very much do to with it, but they found spiral galaxies lining up like beads on a string over a long distance. They are not lined up one dimensionally, but in a circle. They are lined up so they spin like beads on a string can spin. [15] There is a very good video and article here: http://www.astronomy.com/en/sitecore/content/Home/News-Observing/News/2006/05/Galaxies%20like%20necklace%20beads.aspx

How to challenge oreka particle theory

- Solve the mystery of why the orbits of the planets in our solar system are widening more than expected without using the oreka particle theory.
- Find a galaxy in a spiral shape with the arms rotating as fast as the center but where there would be molecular clouds in its arms, it has only stars so as not to absorb oreka particles, and it has mostly invisible mass.
- Find the mass through gravitational lensing that makes the space clouds of the outer rings of spiral galaxies move. Same for other dense molecular clouds that are moving far too fast for visible mass. The lensing needs to show all the mass of the proposed extra mass being dark matter, not just some.
- Telescopes have provided information that our universe expands unevenly. Someone could find that the universe expansion does not match how oreka particles would have the galaxies and galaxy clusters flowing.

Oreka Theory is does not say matter not detectable on the electromagnetic spectrum cannot exist, it is saying it's not what is causing spiral galaxies to rotate as fast at the outer edge spirals as the center.

How to directly test for the creation of orekas

Method 1

Find a way to compare the gravitational pull of an object on mass around it with the gravitational lensing (the gravitational effect on photons only) of that object and see if they are different. An object with a lot of photons around (stars), should have the most differences based on the oreka particle theory.

Method 2

Create a room on the earth (for gravity) and the room must be completely a vacuum. At the bottom, have a cylinder where massive amounts of photons bounce back and forth horizontally. The photons must not bounce upward. The amount of photons produced must be extremely high energy. Slow light will not work because there is mass in the way and the amount of orekas produced is probably determined by how fast light goes.

Above it, fastened to the room is an extremely sensitive weight scale (not mass). The scale must be fully fastened. Hanging below the scale on a chain. The chain goes through a small hole in a large mass and then hangs way down to prevent orekas from reaching the scale. And at the very bottom of the scale is a weight. There will be nothing between the cylinder on the bottom and the weight so orekas will directly hit it.

The cylinder at the bottom is turned on. If it works, then the weight will be very slightly pushed upward and the scale will register a lessening of mass, only if it is sensitive enough.

To do this will cost at least millions of dollars and who knows if we have the technology to keep photons bouncing back and forth and not going upward. If the photons strike the weight-object, it will have a force and make the experiment invalid.

Method 3

Go on the moon or any astronomical body with gravity by no atmosphere. Create a cylinder that bounces massive photons around horizontally but none fly upward. Then aim it at a comet or meter to see if it alters its course.

Method 4

Create a cylinder that bounces massive photons around horizontally but few fly upward or downward. This time the cylinder is sealed. It of course again is a vacuum. Try to make the cylinder and what fills it with photons light in weight. And do not have either fastened to anything. Enough photons should make it fly upward.

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