# The Reinterpretation 

Dean Shetlar

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The physical model in this paper attempts to complement quantum mechanics and match experimental evidence. This physical model of the universe consists of extremely high-density ether with embedded higher density spheres of ether. These high-density spheres are oscillating standing waves of ether expanding and contracting at extremely high frequency. All subatomic particles in the universe consist of 2 of these oscillating spheres of ether, one 180 degrees out of phase with the other. The oscillating action of these spheres of ether lead to all observational phenomena in the universe. This includes particles attracting and repelling each other, bonds between electrons, protons, and neutrons, spin of subatomic particles, entanglement of particles, the electron configuration in atoms, the structure of the nucleus, red shift of objects in the universe, space and time dilation, the end of this universe and the beginning of the next universe. Note: Diagrams and graphics are not to scale.
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## Subatomic components

All subatomic particles have 2 components that are oscillating nodes of ether with 180 degrees difference in their phases, as one component expands the other component contracts. The components are stable oscillating spherical standing waves at specific points in the ether, expanding and contracting at an extremely fast rate.

## Sphere of ether in cube of background ether sphere/component of ether



Compressed sphere/component of ether in a cube of background ether. The density of the ether along the blue line is shown in the ether density diagram below.

Density diagram
Diameter of compressed sphere/component


The density diagram above represents density of the ether along the blue bar in the cube of ether. The sphere in the cube is a component of a subatomic particle and the light gray color around the sphere is the less dense background ether. The background ether density is very high and the compressed component density is at an even higher density. The density of the ether is far greater than the density of a neutron star and the friction in the ether is close to zero.

Component expands during first half of cycle
The times below show the first half of a cycle where the compressed sphere expands to its maximum expansion. This is a pressure wave that expands/propagates through the background ether and the pressure pushing the ether outwards diminishes as the wave diameter increases.

Time 1:Component at maximum compression


Diameter of compressed sphere/component


Time 1: The sphere of ether is at its maximum compression. Being at a higher density than the background ether it will start expanding, pushing the background ether outwards as the sphere expands. This is a pressure wave that propagates through the background ether.

Time 2:Component is expanding


Time 2: At this time the diameter of the sphere is still less than the diameter of a quark. The sphere of ether is expanding outwards at a very high rate of expansion, pushing the background ether away from the origin and giving it an outward momentum. This outward momentum of the sphere and background ether will spread the spherical wave outwards many light years in diameter.


Time 3: The momentum of expansion has finally stopped and the spherical wave is at maximum expansion. The outer region of the expanded sphere will be at a slightly higher density than the surrounding ether due to finally losing its momentum. The central region of the expanded sphere is at a slightly lower density compared to the background ether density due to the ethers outward momentum pushing the ether away from the central region. The ether that makes up the sphere/component is spread out spherically only a short distance. The rest of the spherical wave that continues outward is made of the background ether that the original sphere of ether imparted its momentum to. The fully expanded wave has a diameter somewhere between tens of millions to billions of light years. With the higher density in the outer areas of the expanded sphere and the slight vacuum around the origin, the spherical wave will contract back to form a high-density sphere, almost as if the ether were elastic, completing the second half of the cycle. The background ether density is the ether density if no other particles existed.

Note: At every point in space the ether may have a direction of movement and small amount of momentum.


Time 2


The 2 images above show how the location of a small bit of background ether is pushed to a new location by the expanding sphere/component of ether. At the start of the cycle the compressed sphere/component of ether expands into the lower density background ether as a spherical wave. Time 1 shows a point in the background ether shortly after the sphere expansion begins. Time 2 shows the same point of ether has been pushed to a new location a short time later.

## Charged components



The 2 components of subatomic particles consist of a "positive" component and a "negative" component. The up quark has a "positive" component that is larger than the "negative" component by an amount of ether that accounts for its $+2 / 3$ charge. The down quark has a "negative" component that is larger than the "positive" component by an amount of ether that accounts for its $-1 / 3$ charge. The components of ether have no "charge", it is strictly the extra amount of ether in the larger component that gives rise to the affect the quark has on other "charged" subatomic particles.

The 2 components of the up quark oscillate 180 degrees out of phase. In the first half of the cycle the positive component is expanding and the negative component is contracting, in the second half of the cycle the positive component is contracting and the negative component is expanding. The total quantity of expanding ether in the universe equals the total quantity of contracting ether.


The electrons negative component has an extra amount of ether that gives it a -1 charge. The rest of the ether in the negative component is equal to the amount of ether in the positive component and cancels out its net effect on distant components.

## 2 entangled components expanding and contracting

Times 1 through 4 show the first half of a cycle Time T1


2 entangled components expanding and contracting Times 1 through 4 show the first half of a cycle Time T1


These 2 entangled components make up a standard subatomic particle.
Time 1: Component 1 is at maximum compression and is ready to expand. Component 2 is fully expanded and is ready to contract. The density diagram shows component 1 has a higher density than the background ether and the expanded component 2 spread out over a large volume of space. Component 2 is shown as fully expanded and this expanded distance is somewhere between tens of millions to billions of light years in diameter. The background ether is incredibly dense and a compressed component adds a little more ether density to the density level of the background ether. The expanded component has created a lower ether density in the interior of its expanded volume and near its expanded edge the ether is slightly higher than the background ether density.

## 2 entangled components expanding and contracting Time T2



Time 2: Component 1 is in the early stage of expansion and component 2 is in the early stage of contraction. The density of component 1 decreases as it expands and the density of component 2 increases as it contracts.

## 2 entangled components expanding and contracting Time T3



Time 3: Component 1 is in the late stage of expansion and component 2 is in the late stage of contraction. The density of component 1 continues to decrease as it expands and the density of component 2 continues to increase as it contracts.

## 2 entangled components expanding and contracting Time T4



Time 4: Component 1 is fully expanded and component 2 is fully compressed. At this point the second half of the cycle begins with component 1 contracting and component 2 expanding.

The positive and negative components in a subatomic particle are entangled with each other. The positive and negative components transfer a specific amount of shared ether between each other and the momentum of this shared ether helps push the 2 oppositely "charged" components away from each other.

Only oppositely charged components can entangle with each other.


Time T1 above shows the beginning phase of expansion for component 1 and contraction for component 2. Near the beginning of the cycle, there is a shared volume of ether seen as a darker gray area in the diagram that is traveling in the same direction for both components at time T 1 . When component 1 was fully compressed it contained this shared ether and will transfer it to component 2 when component 2 is contracting. Component 2 will contain the shared ether when it is fully contracted.

In more detail at time 1 , the right side of component 1 and the left side of component 2 are traveling to the right and their "shared either wave" is in that area/volume traveling to the right. The shared ether with the darker shade, also has greater momentum but slower wave velocity due to the adding of the 2 components momentum in that area. At time T2 this area/volume of shared ether with higher momentum reaches a point where the right side of component 2 is contracting and pushing back on the shared ether. With this shared ether having a higher momentum moving to the right and compressing into component 2 , the momentum helps push the center of mass of component 2 to the right. As will be seen later, this counters the "attraction" the components exert on each other. Their shared ether is "passed" back and forth between each other during each cycle. This shared portion of ether likely accounts for less than one percent of the mass of the 2 components.

Note:
Take 2 photons that are entangled with each other and have the same wavelength and send them in opposite directions. Since the components have a maximum radius of expansion, when they reach the maximum radius of expansion away from each other they will no longer be able to interact with each other and will likely end up with only half the ether they shared with each other. Their wavelength will likely be longer due to the amount of ether/energy they lost.

If there are two entangled particles, particle 1 and particle 2 and a third particle, particle 3 , interacts with particle 1, particle 3 can acquire/take away particle 1s' entanglement with particle 2 and now particle 1 is no longer entangled with any particles. Particle 3 and particle 2 are now entangled with each.

Bose-Einstein condensates, Cooper pairs, and van der Waals forces are examples of electronelectron entanglement.

## Snowflake diagrams for the $\mathbf{4}$ states of components during a cycle

## - Fully compressed component




These symbols, fully compressed, compressing, expanding, and fully expanded show the state the components are in at a specific time during their expansion and contraction cycle.

## Component expansion and contraction during 1 cycle

|  | Component 1 | Component 2 |
| :---: | :---: | :---: |
|  | First half of cycle | Expands |
|  | Contracts |  |
|  | Second half of cycle | Contracts |
| Expands |  |  |

This chart shows the state of 2 entangled components during the first half and second half of a single cycle. A cycle for one component starts when the component is fully compressed and starts to expand and will continue expanding until it is fully expanded. The component will then compress/contract until it is fully compressed. The two components are 180 degrees out of phase with each other.

## Ether flow interactions for 2 components page 1

Expanding and contracting components interact with each other by the direction of their expanding or contracting ether flows. Where the ether from 2 components flow in opposite directions the ether waves travel faster due to the ether becoming higher in density at those locations. Where the ether from 2 components flow in the same direction the ether waves travel slower due to the ether becoming lower in density at those locations.
Higher ether density: faster wave velocity
Lower ether density: slower wave velocity

## 2 expanding components



Ether waves traveling/flowing in the same direction in regions 1 and 3 will travel at a slower velocity. Ether waves traveling/flowing in opposite directions in region 2 will travel at a higher velocity. As the 2 components push the ether into area between them, region 2, the ether builds up to a higher density which will increase the velocity of their waves in region 2 . When the wave from component 1 reaches region 3 it will be start pushing the ether in the same direction that component 2 is pushing the ether. Pushing the ether in the same direction by both components "drags" the ether away from that area resulting in an area with less ether density. The ether waves from both components will travel at a slower speed in the less dense ether in region 3 . The same happens in region 1 where both components push the ether to the left. The ether waves from the 2 components will bounce off each other and the momentum will continue the waves direction and velocity past the point they hit each other.


Ether waves from contracting/compressing components traveling/flowing in the same direction in regions 1 and 3 will travel at a slower velocity. Ether waves traveling/flowing in opposite directions in region 2 will travel at a higher velocity. This is the same result as when the 2 components are expanding.


Ether waves from one expanding component and one contracting component traveling/flowing in the same direction in region 2 will travel at a slower velocity. Ether wave traveling/flowing in opposite directions in regions 1 and 3 will travel at a higher velocity.

## Ether waves flowing against each other

 Result: Higher wave velocity and higher ether density
 density diagram for
higher density higher velocity components 2 and 3

## background ether density

Ether waves traveling/flowing in opposite directions against each other will build up a higher density of ether allowing the waves to have a higher velocity. As the waves hit each other they will bounce off each other and their momentum will continue the waves past the point where they hit each other.

## Ether waves flowing with each other

 Result: Lower wave velocity and lower ether density (If expanding component 1 was the only component

Ether waves traveling/flowing in the same direction will "stretch" the ether a bit and the ether density will be lower making the ether waves travel slower.

## Displacement after one cycle for charged components

The 2 diagrams below show how 2 components with the same charge "repel" each other and how 2 oppositely charged components "attract" each other. There are 5 different regions where 2 separate components interact with each other by expanding into and contracting out of those regions. The first diagram shows the density and velocity changes for 2 oppositely charged components. The second diagram shows the density and velocity changes for 2 components with the same charge.


The starting location for component 1 is located between region 2 and 3 and it will expand outwards into regions 2 and 1 to the left and into regions 3 and 4 to the right, then it will contract out of those regions. Component 2 will expand into regions 3 and 2 to the left and regions 4 and 5 to the right, and then contract out of those regions. The distances for regions 1,3 , and 5 are equal and the distances for regions 2 and 4 are equal.

When region 3 is 1 centimeter: same charges

Region 1
1 centimeter


Region
tens of millions to billions of light years

Region 3
1 centimeter

Region 5
1 centimeter


Region
tens of millions to billions of light years
positive components expanded to 1 centimeter diameter:

expansion diameter is 1 centimeter and still no interaction between components 1 and 2
positive components expanded to 2 centimeters diameter:

component 1 expansion finally overlaps component $2 \mathrm{~s}^{\prime}$ expansion over a distance of $1 / 2$ centimeter. This will speed up component $1 s^{\prime}$ expansion in this $1 / 2$ centimeter space. Same for component 2.
positive components expanded to 3 centimeters diameter:

component 1 expansion enters $1 / 2$ centimeter of region 4 and slows in that region due to component $2 s^{\prime}$ ether is expanding in the same direction. In region 3 both components 1 and 2 ether flow is in opposite directions and travels quicker in that region and this occurs for almost all the time of expansion.

## When region 3 is small with the same charge components: More repulsion

Region 3 is small when the 2 components are close together. Regions 1 and 5 are the same size as region 3 and regions 2 and 4 are very large. When 2 "positive" charged components expand into region 3 the ether density in region 3 is increased which causes the ether waves to travel faster in region 3. In region 4 both components ether will be flowing to the right causing slower velocity in region 4 . In region 2 both components will be flowing to the left causing slower velocity in region 2 . Region 1 only experiences component 1 s' ether wave and region 5 only experiences component $2 s^{\prime}$ ether wave and both regions 1 and 5 will have normal ether velocity.

For component 1 wave distance:
Region $1+$ Region $2=$ Region $3+$ Region 4
For component 2 wave distance:
Region $2+$ Region $3=$ Region $4+$ Region 5
The expanding spheres of components 1 and 2 do not start overlapping until they expand half a centimeter in radius. During the time they expand another half centimeter in radius is when the maximum density of ether is created between them and the velocity of the ether flow is the fastest. This is the event that is responsible for their displacement away from each other after the cycle is completed.

Region 2 and region 4 are very large, tens of millions to billions of light years. The time for the ether waves to travel through regions 2 are 4 are approximately equal. Region 1 will have the normal wave velocity for component 1 due to no interaction with component 2 in that region. The ether wave velocity will be faster in region 3 due to higher ether density from both components 1 and 2 pushing their ether from opposite directions into region 3.

Time spent in regions by component 1 :
Region 2 time $=$ Region 4 time
Region 1 time > Region 3 time
Result: Moves component 1 to the left
Time spent in regions by component 2 :
Region 2 time $=$ Region 4 time
Region 5 time > Region 3 time
Result: Movies component 2 to the right
For component 1 the ether wave returns from regions 3 and 4 quicker than the ether wave returning from regions 1 and 2 . This results in a displacement of component 1 to the left. The same happens to component 2 in the opposite direction resulting in the components being farther apart from each other after one cycle.

When region 3 is 10 light years: same charges

Region 1
10 light years

Region 3
Region 5
10 light years

positive components expanded to 10 light years diameter:

expansion diameter is 10 light years and still no interaction between components 1 and 2. This dramatically diminishes the "repulsion" effect when same charge components are far apart.
positive components expanded to 20 light years diameter:

component 1 expansion finally overlaps component $2 s^{\prime}$ expansion over a distance of 10 light years. This will speed up component $1 s^{\prime}$ expansion in this 10 light year space. Same for component 2.
positive components expanded to 30 light years diameter:

component 1 expansion enters 10 light years of region 4 and slows in that region due to component $2 s^{\prime}$ ether is expanding in the same direction.

## When region 3 is large with same charge components: Less "repulsion"

If two "positive" components are ten light years apart then the amount of displacement experienced will be less than the example above. When the two components start expanding, they will expand the first five light years with no interaction with each other. Most of the "repulsion" effect normally occurs in the first five light years which these two components do not experience. This results in the two components having very little displacement away from each other after one cycle.

The 2 expanding components do not overlap in the first 5 light years of spherical expansion. The expanding spheres push against each other's expanding spheres of ether after the first 5 light years when they do overlap. Due to the later weaker overlapping their effect on each other is far weaker than the case for 2 components closer together

Time spent in regions by component 1 :
Region 2 time $=$ Region 4 time
Region 1 time $\sim$ Region 3 time (very small difference)
Result: Moves component 1 a very small distance to the left
Time spent in regions by component 1 :
Region 2 time $=$ Region 4 time
Region 5 time $\sim$ Region 3 time (very small difference)
Result: Moves component 2 a very small distance to the right
This shows that as distance between same charge components 1 and 2 becomes larger and larger the repulsion drops faster than would be expected and does not fully counter the "attraction" of 2 oppositely "charged" components at large distances.


The regions for opposite "charge" components are the same as they are for same "charge" components. The main difference are the ether flow directions in the regions. Ether flow is in the same direction in region 3 for components 1 and 2 . When one of them is expanding the other one is contracting. This creates lower ether density and slower ether velocity. In regions 2 and 4 their ether is flowing in the opposite direction and ether flow will be faster due to the higher ether density created in those regions. Only component 1 expands into region 1 where the ether flow will be normal density and velocity and only component 2 expands into region 5 where the ether flow will also be normal density and velocity.

positive component expanded to 20 light years diameter and negative component is contracting from somewhere between tens of millions to billions of light years:

negative component 2 is contracting but still has diameter of tens of millions to billions of light years. Positive component 1 has expanded to diameter of 20 light years, radius 10 light years. Components 1 and 2 interact the entire time. In region 3 the ether waves flow in the same direction and are slower when compared with region 2 where their ether waves travel faster, and will return faster and displace component 1 to to right of its current position. Same will happen with component 2 in the next half cycle.
positive component expanded to 30 light years diameter and negative component still contracting:

positive component 1 expansion enters 10 light years of region 4 and the ether wave speeds up in that region due to component $2 s^{\prime}$ ether is contracting in the opposite direction. The 2 components will be closer together after one cycle.

## Two components with the opposite charge:

As the distance increases for region 3 the "attraction" will increase due to the increased time of slower velocity in that region. The oppositely "charged" components interact with each other, from their closest distance from each other all the way up until they reach the maximum of their expansion distance away from each other. The "attraction" slowly decreases. The opposite happens for same "charge" components, they dramatically interact less and less as the 2 same charge components get farther away from each other. The closer 2 same charge components are, the more closely their "repulsion" magnitude will match the "attraction" magnitude of 2 opposite charge components.

Time spent in regions by component 1 :
Region 2 time $=$ Region 4 time
Region 1 time < Region 3 time
Result: Moves component 1 to the right
Time spent in regions by component 2 :
Region 2 time $=$ Region 4 time
Region 5 time < Region 3 time
Result: Moves component 2 to the left
A "positive charge component in a star at the edge of the galaxy will have a very low repulsion/push from a positive charged component located in the center of the galaxy. In comparison, that same positive charged component in the star at the edge of the galaxy will be attracted to a negative component located at the center of the galaxy with a much greater attraction/pull and this allows the star to have a much greater velocity in its orbit around the galaxy.

## Photon creation

The next 8 diagrams below show how a photon component is created. Only the first half of a cycle is shown where the positive component is expanding and the negative component is contracting. The first 4 diagrams show half a cycle of cycle 1 . The next 4 diagrams show half a cycle of cycle 2 where the negative photon component is created and separated from the contracting large negative component and the large negative component is pushed away. The second half of cycle 2 is when the positive photon component is created (not shown).

Photon component creation Time T1 (cycle 1) First half of cycle 1 with contracting negative component approaching expanding positive component Time T1
Positive component will start expanding and negative component will start contracting

## fully compressed positive component



Diagram above shows the fully compressed positive component and the fully expanded negative component. The positive component could be from a proton and the negative component could be from an electron. The negative component is approaching the positive component and will be pushed away at the end of the half cycle. The next 3 diagrams show the positive component expanding and the negative component contracting while the negative component is approaching the positive component.

Photon component creation Time T2 (cycle 1) First half of cycle 1 with contracting negative component approaching expanding positive component Time T2


The diagram above shows the contracting negative component approaching the expanding positive component and wanting to contract closer to the positive component.

Photon component creation Time T3 (cycle 1) First half of cycle 1 with contracting negative component approaching expanding positive component

## Time T3

expanding positive component is pushing the contracting negative component partially away


At time T3 the negative component has reached its closest point to the positive component in cycle 1 . The expanding positive component shown above wants to push the negative component away when it is too close.

Photon component creation Time $T 4$ (cycle 1) First half of cycle 1 with contracting negative component approaching expanding; positive component Time T4
fully expanded
positive component

negative component wanted to contract to this blue dotted location but instead is pushed


At time T4 the fully expanded positive component has pushed the fully contracted negative component a small distance away. The last half of cycle 1 where the negative component expands and the positive component contracts is not shown.

Photon component creation Time T5 (cycle 2) First half of cycle 2 with contracting negative component approaching expanding positive component Time T5
At this start of cycle 2 the positive component will again start expanding and the negative component will start contracting
fully compressed positive component

density
diagram
density
diagram
fully expanded negative component
lower density of ether due to expanded negative component in local ether

Time T5 is the start of cycle 2 where a photon component will be created at time T 8 .

Photon component creation Time T6 (cycle 2) First half of cycle 2 with contracting negative component approaching expanding positive component Time T6


At time T6 the negative component wants to compress at the location closer to the positive component than its original location at time T5. The expanding positive component is pushing against the approaching negative component.

Photon component creation Time T7 (cycle 2) First half of cycle 2 with contracting negative component approaching expanding positive component Time T7
this portion creates


When the negative component is almost fully compressed the expanding positive component will fail to push all of the negative components' ether away. The darker portion of the contracting negative component shown above arrives too late for the expanding positive component to push it away with the rest of the negative component, leaving that small portion to create a small separate component that becomes part of a new photon.


The ether for the new photon component ends up contracting to the location that the negative component originally wanted to contract to and the large, now slightly smaller, negative component is pushed away. In the last half of cycle 2 after time T8 the negative component will expand and the positive component will contract and a positive photon component will be created. The positive and negative photon components will be entangled with each other and the large positive and negative components will be entangled with each other. The amount of ether they push into each other is enough to keep them separated at a specific average distance away from each other. This back and forth exchange of ether in each cycle is responsible for angular momentum for the large components and the photon components. An additional 2 photon components will also be created in this process to give the new photon a total of 4 components.

## Back and forth motion of entangled components page 1

Intrinsic angular momentum of entangled negative and positive components

## Time T1:

fully compressed positive component

density diagram lower density of ether due to expanded negative component in local space
fully expanded
negative component
 background ether
dagram
$\qquad$ new total density of local ether

Time T2
fully expanded positive component

lower density of ether due
to expanded positive component in local space
diagram

In the first half of a cycle shown above a "positive" component expands to full expansion and a negative component contracts back to fully contracted. The contracting negative component wanted to contract closer to the positive component but was pushed away by the expanding positive component.

Back and forth motion of entangled components page 2 Intrinsic angular momentum of entangled negative and positive components

## Time T3:

fully expanded positive component

fully compressed negative component
 background ether

lower density of ether due
density
diagram
to expanded negative

new total density of local ether

## Time T4

the positive component contracted at this location after being pushed away by the negative component

contracting positive component wanted to contract back to this location but was pushed away by the expanding negative component

lower density of ether due to expanded positive density
diagram


In the second half of a cycle shown above the "negative" component expands and the positive component contracts. The positive component wants to contract closer to the negative component but the expanding negative component pushes to the positive component away. This pushing away of the contracting components during each cycle is responsible for the intrinsic angular momentum of entangled components.

## Entanglement of 2 components Page 1

Negative component
of electron
Moving toward positive component $\longrightarrow$

Time T1
negative components
fully compressed at time T1
Time T2 negative components fully expanded at time T2

Time
T3

Time T4

Time T5
Entanglement completed after the formation of 2 small components of the photon at time T8.

Time T6

Time T7

Time T8
2 additional photon components are also formed
the 2 new photon components escape from the positive electron component and the negative proton component. (not shown here)

Positive component of proton
positive components
fully expanded at
time TI
positive components fully compressed at time T2




## Entanglement of 2 components Page 2

Entanglement of all 4 photon components


After the 2 pair of photon components are pushed away by their parent components, they will reach a maximum distance away from each other. At Time T1 they will have lost their outward momentum and will be pulled back toward their radius of entanglement. When the 2 component pairs are pulled back towards each other they will gain momentum and will go past the radius of entanglement and approach close to each other as shown at time T3. At this point they will repel each other and move away past the radius of entanglement location. Time T2 and Time T4 show the maximum distance the photon pairs get away from each other before they are pulled back by their mutual entanglement. This back and forth oscillation will repeat over and over and is the frequency of the new photon.

## The photon

Photon component acquiring light speed
Time T 1
Fully
compressed
Time T 2

Time T5
Fully expanded


The diagram above shows how the new photon component is accelerated up to the speed of light after its creation. The photon component and the electron component push on each other as they expand. The very small photon component pushes on the electron component and only pushes it away by a small amount. The much larger electron component pushes on the small photon component by a much larger amount and pushes it up to its maximum speed, the speed of light.

## Photon component ether flow



Overlapping times T1 and T2


Overlapping diagrams of the photon component at times T1 and T2 shows the ether flow from left to right when changing from the contracting phase to expanding phase and causing an area of low density ether behind the component.

The contracting phase and the expanding phase are combined in this diagram to illustrate how the bulk of the ether flows from left to right and creates a partial vacuum/lower ether density area behind the moving photon component. The lower ether density area is caused by high density ether flow coming in from the left as seen in the diagram. The high-density ether flow leaves behind a low-density region due to an excessive amount of ether leaving the area as it flows to the right as the component contracts. The lower density causes an extra amount of the expanding ether to move into the lower density region behind the photon component. This sets up the condition necessary for the next phase of contraction to contract farther ahead and advance the photons movement to the right.

## Photon component maintaining light speed

Photon component displacement after 1 cycle


Photon component momentum at the end of this cycle: Momentum of ether on the left going to the right.
 Momentum of ether on the right going to the left.
photon component momentum at the start of the next cycle: Momentum of ether on the left going to the left.


Momentum of ether on the right going to the right.


Photon components consist of 4 components, 2 components created from 2 proton components and 2 components created from 2 electron components. Each of these 2 components have strong entanglement between themselves. These 2 pair of strongly entangled photon components are weakly entangled with each other. This weak entanglement is responsible for the oscillation/wavelength of photons. In the case of an electron and proton creating a photon the 2 components from the electron are strongly entangled with each other and the 2 components from the proton are strongly entangled with each other. The 2 photon components from the electron and the 2 photon components from the proton are weakly entangled with each other. After the
photon components are created the parent components push the 2 pair of photon components away from each other in opposite directions thereby creating their oscillation towards and away from each other. When the 2 pair of photon components are too far away from each other they are "pulled/attracted" back to each other because they have gone beyond the radius of entanglement. When the 2 pair of photon components are too close to each other they "push/repel" each other because they are closer together than the radius of entanglement. With their momentum they will oscillate back and forth through the radius of entanglement. Many component cycles of expanding and contracting occur during one cycle/wavelength of the photon.

## Momentum Page 1

Distance traveled by component displacement stationary component 1 has no displacement after 1 cycle

no change in posistion
moving component 2 displacement after 1 cycle of expansion and compression

contraction
distance is subatomic
distance is somewhere between tens of millions to billions of light years


The diagram above shows a stationary component on the left with no change in position after 1 cycle. The component on the right is moving to the right and changes position after 1 cycle. Moving components have different paths for contracting and expanding ether. The contracting ether is more concentrated/higher density on the left side when the component is contracting. This higher density has more momentum coming in from the left as shown in the diagram above. As the higher density ether coming in from the left reaches the components position the high momentum to the right pushes the high-density ether to the right, past the component's location, then it starts expanding. The component does not contract to a sphere in this case due to a significant amount of its ether flowing left to right and past its center of mass. The expansion is uneven due to the greater amount of ether flowing to the right. The bulk of it will initially expand to the right but a slight vacuum/less dense area behind the component when it was contracting will make a little bit more than the majority of the ether flow backwards. This will again create a higher amount of ether contracting from the left and repeating the higher momentum coming in from the left side of the component.

## Momentum page 2

Transfer of momentum of 2 expanding components at time T1
Time T1 magnitude of momentum no momentum

$$
\text { for component } 1
$$



Flow directions Component 1 ether Component 2 ether $\longleftarrow$
component 2 ether flow is greater and pushes component 1 ether to the left slowing down the momentum of component 1
for component 2


Flow directions Component 1 ether Component 2 ether
$\longleftarrow$
component 1 ether flow
is greater than component 2 ether flow and pushes component 2 to the right giving component 2 momentum

component 1 ether flow is greater than component 2 ether flow and pushes component 2 to the right giving component 2 momentum
momentum of 2 expanding components at time $T 2$, many cycles later Time T2 magnitude of momentum for component 1
 magnitude of momentum for component 2


Momentum page 3
momentum of 2 entangled components, one expanding and one compressing


## Entanglement modes

## Basic entanglement modes

Serial
Entanglement


Base, serial, and parallel entanglement are the 3 types of entanglement between components and between particles. Base entanglement is the permanent entanglement between 2 components of a particle. Serial entanglement is where the 2 particles are parallel entangled but one or both particles are forced to align themselves in a serial arrangement. Parallel entanglement is where the "positive" component of particle 1 is entangled with the "negative" component of particle 2, and the "negative" component of particle 1 is entangle with the "positive" component of particle 2.

## nucleon parallel entanglement modes



The proton entangled with proton, neutron entangled with neutron and proton entangled with neutron are stable entanglements for nucleons in the nucleus. These entanglement modes allow the nucleus to have a layered structure of planes made of parallel entangled nucleons. The planes of nucleons are held together by serial entanglement between the nucleons in separate planes.

Stable and less stable nuclear entanglement Page 1 Proton proton and neutron neutron entanglement are the most stable for 2 necleons entangling with each other. This is due to the equal entanglement strength between 2 up quarks entangled with each other and 2 down quarks entangled with each other. An up quark entangled with a down quark is less stable due to the unequal entanglement between the components.


Stable
neutron entangled with neutron


Less Stable
proton entangled with neutron


Stable and less stable nuclear entanglement Page 2
up quark up qaurk pair: stable down quark down quark pair: stable


The two components on the left side of the up quarks have the same entanglement strength as the two components on the right side of the up quarks. The same applies to the left and right components for the two down quarks. This is a stable configuration.
up quark down quark pair: Less stable


The two components on the left side of the up quark down quark pair have a different entanglement strength than the two components on the right side of the up quark down quark pair. This is a stable configuration.

## Electron entanglement modes

2 electrons serial entangled and 3 electrons parallel entangled with central electron


Each electron can be entangled with at most 3 parallel entangled electrons and 2 serial entangled electrons.

## Proton entanglement modes

2 protons serial entangled and 4 protons parallel entangled with central proton


Each nucleon can be entangled with at most 4 parallel entangled nucleons and 2 serial entangled nucleons.

Radius of entanglement for different particles Radius of entanglement for nucleon to nucleon

(distances not to scale)

Radius of entanglement for proton to electron


Radius of entanglement for electron to electron


Radius of entanglement for electron to photon


Radius of entanglement for photon to photon


## Electron spin and angular momentum

Spin for electron, proton, and neutron Spin arrows point from the smaller component to the larger component. For electrons the plus or minus values are dependent on which hemisphere they occupy in the atom.
spin value for electon equals $+1 / 2$


Spin points in the direction of the larger of the 2 components that make up a particle. If a $+1 / 2$ spin proton is rotated 180 degrees it will then have a $-1 / 2$ spin.

## Electron spin in atoms

Electron spin is dependent on which hemisphere the electron occupies.
A 4 s electron in the northern hemisphere will have a $-1 / 2$ spin and a 4 s electron in the southern hemisphere will have a $+1 / 2 \mathrm{spin}$.


## Electron orbital angular momentum

$s, p, d$, and $f$ electron oscillation displacement in time


Electrons in north and south hemispheres of the atom
Northern hemisphere electrons Southern hemisphere electrons

lines show equal spacing between electrons in the $f$ orbital

Northern hemisphere electrons
s and d shell electrons are spin down p and f shell electrons are spin up


North and south hemisphere 2 s 2 p electrons
Spatial positions of 2 s and 2 p electrons
Northern hemisphere electrons
$s$ shell electron has spin down $=2$ sdN
$p$ shell electrons have spin up $=2$ puN


2sDN:
2 = shell 2
s = s orbital
D = spin down
$\mathrm{N}=$ Northern hemispere

2pUN:
2 = shell 2
$\mathrm{p}=\mathrm{p}$ orbital
$\mathrm{U}=\operatorname{spin} \mathrm{up}$
N = Northern hemispere

2pDS:
2 = shell 2
$\mathrm{s}=\mathrm{s}$ orbital
D = spin down
S = Southern hemispere

2s2p electrons occupy positions that form the corners of a cube due to the repulsion of their negative charges. The $2 p$ electrons in the northern hemisphere also entangle with the $2 p$ electrons in the southern hemisphere.


Northern hemisphere 3s3p3d electrons
s and d shell electrons are spin down $p$ shell electrons are spin up



Northern hemisphere 4s4p4d4f electrons
s and d shell electrons are spin down $p$ and $f$ shell electrons are spin up


3p


```
spatial positions
``` of 4 s 4 p 4 d 4 f electrons

4f
\(4 f\)


\(4 f\)
\(4 f\)


\section*{Electron positions in specified shells Page 1 red \(=\) spin down blue \(=\) spin up}

Is electrons
Nucleus

3s, 3p, and 3d electrons


2 s and 2 p electrons
\(4 \mathrm{~s}, 4 \mathrm{p}, 4 \mathrm{~d}\), and 4 f electrons


The electrons occupy specific positions surrounding the nucleus. The s shell electrons occupy positions above and below the nucleus and perpendicular to the planes of the nucleus. Electrons in shells \(1,2,3\), and 4 will take positions in spherical shells with shell 4 electrons occupying the outermost shell. In the northern hemisphere 32 p electrons will be parallel entangled with the 2 s electron in the northern hemisphere. The \(32 p\) electrons in the southern hemisphere will be parallel entangled with the 2 s electron in the southern hemisphere. The 32 p electrons in the northern hemisphere will also be parallel entangled with the 32 pelectrons in the southern
hemisphere. A circle is drawn showing where the \(2 p\) electrons are located at in the northern hemisphere. Similar circles can be drawn for the \(3 p, 3 d, 4 p, 4 d\), and \(4 f\) orbitals.

Electron positions in specified shells Page 2 red \(=\) spin down blue \(=\) spin up
Approximate positions of electrons in each shell Entanglement lines are shown for each electron entangled with the nucleus. Electrons in one shell are also entangled with electrons in an adjacent shell.


\section*{Adding 2p electrons Page 1}

Approaching electron pushed 2s electrons away


In this example 3 electrons will approach the atom and entangle with the nucleus and parallel entangle with the 2 s electron in the northern hemisphere. The first incoming electron is closer to the s electron in the northern hemisphere and will parallel entangle with that electron in addition to entangling with the nucleus.

\section*{Adding 2p electrons Page 2}

1s and 2 s electrons and 2 p electron

\(2 s\) and \(2 p\) electrons pushed


The second approaching electron (see diagram below) will also entangle with the northern hemisphere electron because there is a mass of 2 electrons in the northern hemisphere and they will be repelled away a shorter distance. This second entanglement is easier because the first entangled electron can swing around the 2 s electron and "hide" behind the 2 s electron so it only plays a small part in repelling the incoming second electron.

Adding 2p electrons Page 3
1 s and 2 s and two added 2 p electrons


The third incoming electron will see two 2 p electrons entangled with the 2 s electron and again these two 2 p electrons will be partially shielded by the 2 s electron. In addition, the inertia of the 3 entangled electrons means they will not be pushed away very much by the incoming electron and the incoming electron will entangle with the 2 s electron in the northern hemisphere.

\section*{Adding 2p electrons Page 4}

Entanglement of three 2 p electrons is completed for the northern hemisphere.


The 2 s electron in the northern hemisphere is now at its maximum of parallel entanglement with three other electrons. The next 3 electrons that approach the atom will parallel entangle with the 2 s electron in the southern hemisphere. All electrons are entangled with the nucleus.


External electron approaching causes a \(2 p\) electron in neon to be repelled which in turn repels the other \(2 p\) electrons causing the rotation of the \(2 p\) electrons around the \(2 s\) electron. The \(2 p\) electron is also parallel entangled with two of the \(2 p\) electrons in the southern hemisphere.

\section*{Electron transition to lower shell Page 1}


There is a 2 p unfilled position in the diagram above and there is a 3 d electron that can emit a photon and occupy the currently unfilled 2 p position. For this to occur the 3d electron will need to rotate 180 degrees to change from its spin up direction in the 3 d position to a spin down direction for the 2 p position.


All the electrons in an atom jiggle around with some kinetic energy in their position. An electron can randomly acquire enough momentum and direction of momentum from other electrons to have enough momentum aimed toward the nucleus to fill an empty lower energy position in the atom and generate a photon. The rotation of the electron helps increase its components velocity towards the nucleus to entangle with the nucleus for the new position. This rotation will give the electron a spin value opposite of what the electron had in its original location.


The electron is moving from the 3 d position to the lower energy 2 p position and parallel entangles with the 2 s electron and entangles more strongly with the nucleus.

\section*{Molecules}

Water molecule


The diagram above shows electron positions in a water molecule and identifies the shared electrons and showing additional information. For the electron shared by hydrogen \#1 and the oxygen atom the designation is \(2 \mathrm{pDS}-\mathrm{O}, 1 \mathrm{sDN}-\mathrm{H} .2 \mathrm{pDS}-\mathrm{O}\) is the " 2 p " orbital, " D " for spin down, "S" for southern hemisphere, and "-O" for oxygen atom. 1sDN-H is the "1s" orbital, "D" is for spin down, " N " is for northern hemisphere, and "- H " is for the hydrogen atom.

\section*{Frozen water}

For \(2 \mathrm{pDS}-\mathrm{O}, 1 \mathrm{sDN}-\mathrm{H}\) :
2pDS-0:
2 = shell 2
\(\mathrm{p}=\mathrm{p}\) orbital
D \(=\) spin Down
S = Southern hemispere
\(0=0 x y g e n\)
1sDN-H:
1 = shell 1
\(\mathrm{s}=\mathrm{s}\) orbital
D \(=\) spin Down
\(\mathrm{N}=\) Northern hemisphere
\(\mathrm{H}=\) Hydrogen


\section*{O2 molecule}

Time T1:2 separate
oxygen atoms


Time T2:O2 molecule
For 2pUN-01,2pUS-O2
2pUN-01:
2 = shell 2
\(\mathrm{p}=\mathrm{p}\) orbital
\(\mathrm{U}=\operatorname{spin} \mathrm{Up}\)
\(\mathrm{N}=\) Northern hemispere
01 = Oxygen \#1
2pUS-02:
2 = shell 2
\(\mathrm{p}=\mathrm{p}\) orbital
\(\mathrm{U}=\mathrm{spin} \mathrm{Up}\)
S = Southern hemisphere
02 = Oxygen \#2


\section*{Diffraction}



Photons passing close to the left barrier will be deflected either to the right of left depending on which side of the photon is closest to the barrier. If the positive side of the photon is closer to the barrier then the negative electrons on the barriers surface will attract the photon and the photons path will be bent to the left. If the photons negative side is closer to the barrier then the electrons in the barrier will push the photons away, changing the photons path to the right. This creates a continuous spread of photons in the image above. The farther away a photon is from the edge, the less attraction or repulsion exerted on the photon. Approximately half the photons will be deflected to the left and half to the right.

Photon attraction and repulsion at a barrier Pg2 Photons are attacted to a barrier or repelled by a barrier. photons attracted to a barrier
attracted more attracted less by left barrier
by left barrier electron due to greater

photons are attracted to a left barrier when their positive component is closer to the left barrier than their negative component


If there is both a left barrier and a right barrier then the two barriers will enhance the deflections and attractions of each other. If a left barrier is attracting the positive component of a photon, then the right barrier is repelling the negative component of that photon.


\section*{Photon angles to allow entanglement}

If photon 1 is at a certain close distance away from photon 2 it can have a variance of 30 degrees and entangle with photon 2

photon 2
- \(\ddagger\)-.....--

If photon 1 is at a certain farther distance away from photon 2 it can have a variance of 15 degrees and entangle with photon 2


かさ-....-- \({ }^{-}\)

\section*{Two photons entangle with each other when expanding}

new entanglement between the 2 inner pair of components of
photon 2 contracted

the 2 photons when they expanded.


These 2 pair entagled with each other
Two photons can entangle with each other if they are close enough and their expansion is towards each other. At time T1 photons 1 and 2 are compressed. At time T2 they have expanded and one pair of components from each photon have entangled with each other. Angles are likely much smaller than shown above. The farther away two photons are from each other the less the angle will be to enable entanglement. Beyond a certain distance they will not be able to entangle.

Single photons passing a barrier Page 1 Single photons entangle with barrier


When four photons are sent one at a time past a barrier at different distances away from the barrier they will entangle with the barrier and be deflected away from the barrier. Photon 1 shows as entangling with the second sphere of entanglement out from the barrier. After photon 1 becomes entangled it will move closer to the barrier and will be repelled away from the barrier in an attempt to maintain the entanglement distance. The repelling will push the photon away and the photon will hit the detection screen at one of the diffraction nodes. The same will happen with photons 2, 3, and 4 and they will each hit the detection screen at different nodes. Photon 4 entangles on a radius of entanglement farther away from the barrier and a path directed farther away from the barrier. With weaker entanglement it will feel less pushing away from the barrier. It will also feel less pushing away because it will be travelling a path that is farther away from the barrier when compared to photon 1.

Single photons passing a barrier Page 2 Single photons will entangle with a barrier


In the example above there are 2 photons that entangle at the same radius of entanglement sphere but photon 1 has a path taking it closer to the barrier. The closer an entangled photon comes to the barrier the more force the photon feels from the barrier repelling the photon away. Photon 1 is repelled more than photon 2 and they may hit the detection screen on the same diffraction node.

\section*{2 edge diffraction pattern Page 1}

\section*{2 left barriers create 2 seperate diffraction patterns}
only photons that interacted with
only photons from the tip of barrier 2 created this smooth diffraction the tip of barrier 1 or barrier 2 interact with each other to create this diffraction pattern photons from the tip of barrier 1 only pass on the right side of this dotted line, barrier 2 blocks photons from barrier 1 on the left side of this dotted line
\(\mathbb{K}\) photon from tip of barrier 2
photon from tip of barrier 1

laser pointer

This diffraction pattern picture was taken with a Cannon EOS 60D camera and shows over 150 nodes in the pattern


2 edge diffraction occurs with 2 edges on either the left or right of a laser beam as shown above. The pattern is mainly made from photons that pass very close to the edges of both barriers and they entangle with the barriers and other photons to create the diffraction pattern.

\section*{2 edge diffraction pattern Page 2 barrier 1 photons entangle with barrier 2}


When barrier 1 photons pass barrier 2 their entanglement with barrier 1 is weak enough that they will entangle with barrier 2 and lose entanglement with barrier 1 . The radius of entanglement depends on the wavelength of the photons. The shorter the wavelength the shorter the radius of entanglement. The photons newly entangled with barrier 2 will then enhance the ability of barrier 2 to entangle with photons at entanglement radius 2 , which will enhance the entanglement with photons at entanglement radius 3 , etc.

\section*{2 edge diffraction pattern Page 3} Radius of entanglement for barrier 1 photons created by barrier 2


The ten equal segments above show where barrier 2 entangles with the photons from barrier 1 as they travel towards the detector screen. Each radius of entanglement occurs at the intersection of the black dashed lines and the black segmented line. This is where the photons from barrier 1 are diverted to the left of their current positions due to entanglement from barrier 2 in an attempt to maintain the radius of entanglement. This creates a dark region that will be detected at the detection screen. The first RE1 (Radius of Entanglement 1) is between node 1 and node 2 inside the green circle.

\section*{2 edge diffraction pattern Page 4} barrier 2 photons entangling with barrier 1 photons


The new gap from the previous page, created by photons on the right side of the nodes, exposes the photons on the left side of the nodes to easily entangle with photons coming from barrier 2. When a photon from barrier 2 reaches a radius of entanglement distance away from, and close to the same direction of travel as a photon exposed on the left side of a node, the two photons will entangle with each other. This entanglement will halt the rightward drift of the photon from barrier 2 and will push the photon on the left side of the adjacent node into the middle portion of the adjacent node, thus increasing the size of the dark gap between nodes.

2 edge diffraction pattern Page 5
A closer look at node 5 photons and 2 photons from barrier 2 and 2 photons from barrier 1


\section*{Single slit diffraction Page 1}
single slit diffraction pattern


\section*{laser pointer}

In single slit diffraction photons passing close to the left barrier entangle with photons passing close to the right barrier and create a diffraction pattern on the detection screen.

\title{
Single slit diffraction Page 2 Single slit node creation when photons entangle after passing barriers
}
\(\rho^{+}-\sigma^{-}=\)edge view of photon


Case 2:
These 2 newly entangled photons add to node 2 of diffraction pattern
left barrier


Case 3:
These 2 newly entangled photons add to node 3 of diffraction pattern
```

left barrier

```


In phase photons pass the left and right barriers and become entangled with each other after traveling integral wavelengths past the barrier.
Case 1: When a photon passes close to the right barrier and is deflected to the left a little, if the angle is within a set number of degrees and the photon reaches a distance of one wavelength away from the barrier then it is at a position where it will entangle with a photon just passing the left barrier. The photon at the left barrier has to be travelling at close to the same angle/direction as the photon that passed the right barrier. If the angle/direction is greater than a certain number of degrees then they will not entangle with each other. The entanglement occurs when the photon component pair with the larger positive component oscillates outwards toward the other photon that has the photon component pair with the larger negative component oscillating pointing towards it.

Case 2: Same process when a photon travels 2 wavelengths away from the right barrier. Case 3: Same process etc.

\section*{Single slit diffraction Page 3 focusing of nodes during photon entanglement}


Only photons between paths 3 and 5 can entangle with a photon on path 1 . Other paths have photons with too much momentum toward or away from path 1 photons and/or they are not serially aligned enough to entangle with path 1 photons.

\section*{Single slit diffraction Page 4 focusing of nodes during photon entanglement}


When photon 1 entangles with photon 3, which is traveling slightly towards photon 1 , their entanglement will slow the rate they travel toward each other. This creates a dark area on the target screen between nodes 2 and 3. If photon 2 entangles with photon 4 , which is traveling slightly away from photon 2 , their entanglement will slow the rate they travel away from each other. This creates a dark area on the target screen between nodes 1 and 2 .

\section*{Single slit diffraction Page 5 Entangled photons moving toward or away from each other \\ Case 1: \\ Photons deflect outwards from each other \\  \\ Case 2: \\ Photons deflect inwards toward each other \\ }

If two photons that are not travelling parallel to each other entangle with each other, they will deflect their paths by a small amount.
Case 1: If photon 1 and photon 2 are travelling on paths that will slowly bring them together, then they can entangle with each other if they are closer than a certain distance from each other. This can occur with two barriers that are close together that deflect or attract two photons. When these two photons are entangled with each other they will want to keep the same radius of entanglement distance between themselves. If their momentum towards each other is too great then their paths towards each other will be deflected outwards a little.

Case 2: The reverse of Case 2. If photons 3 and 4 are traveling slightly away from each other and they entangle with each other, their paths are altered so they don't travel away from each other as fast as they were before entangling with each other.

\section*{Double slit diffraction Double slit diffraction pattern}


The double slit diffraction pattern shown above is an extension of the process used to create the single slit diffraction pattern. Node zero from the single slit experiment is divided into more nodes when a second slit is added. The additional nodes in the double slit pattern are created the same as the nodes in the single slit experiment. In the diagram above photon 1a at the left barrier entangles with photon 1 b when photon 1 b has travelled one wavelength away from the right barrier and its path is perpendicular to the line of entanglement from photon 1a at the left barrier. Photon 2a at the left barrier will entangle with photon 2 b at the right barrier when photon 2 b has travelled two wavelengths from the right barrier and its path is perpendicular to the entanglement line from photon 2a at the left barrier. The same for photon 3a etc.

\section*{Two photons entering glass}

Two photons having parallel paths before entering glass will have different paths in glass when their wavelengths are different
long wavelength photon 1



Time T4


At time T 1 the large negative component of photons 1 and 2 start entering the glass from the air. As soon as the negative components enter the glass their velocity slows down to the speed of light in glass. The large positive components of photons 1 and 2 are still traveling at the speed of light in air, this results in their movement away from the negative components which creates a pulling force between the positive and negative components as they try to maintain their
entanglement distance. The diagram above shows photon 2 at times T1 and T2 and how the positive component "pulls" the negative component in the upward direction. This creates a curved path in the glass for the negative component as it continues into the glass and is also pulled upwards by the positive component. The positive component is also being pulled by the negative component and this forces the positive component to swing around in an arc towards the glass. Eventually the positive component enters the glass and will have the same velocity as the negative component. The direction of the path in the glass is changed to an angle closer to the perpendicular of the glass surface. The same process occurs for photon 1 , the only difference being the positive component of photon 1 takes longer to enter the glass. The longer time allowed the negative component of photon 1 to travel farther into the glass by the time its positive component entered the glass. This results in a direction of travel farther away from the perpendicular to the glass and the photon heads in a more upwards direction shown above when compared to photon 2.

\section*{Two photons exiting glass into air}

Two photons having parallel paths before exiting glass will have different paths after exiting glass when their wavelengths are different
long wavelength photon 1


short wavelength photon 2



Time T4

photon 2 at time T1
positive
component
path entering
air
positive component path if there were still glass

At time T1 the large negative component of photons 1 and 2 start exiting the glass and entering the air. As soon as the negative components enter the air their velocity speeds up to the speed of light in air. The negative large components move away from the positive components still in the glass and the entanglement causes the negative components to drag the positive components in a
curved path as they try to speed away. The positive components slow the negative components down causing them to swing upwards to maintain their entanglement distance as show in the diagram above. At time T3 the positive component of photon 2 has reached the air and the photon will speed away at an angle larger away from the normal ( 90 degrees) to the plane of the glass. The negative component in photon 1 takes longer to swing around and when the positive component enters the air photon 1 has a path that is closer to the normal of the plane of glass than photon 2.

\section*{Entanglement by current}

Entanglement of free electron by current in wire Pg 1
Electron outside wire traveling in same direction as electrons
in a copper wire


Electrons traveling in the same direction:
When electron e2 pushes electron e3 away from the proton in the wire, the entanglement electron e3 had with the proton is lost and electron e4 is exposed to the "positive charge" of the proton and becomes entangled with the proton. When electron e4 is entangled it will try to maintain the radius of entanglement which moves it towards the wire.

Entanglement of free electron by current in wire Pg 2 Electron outside wire traveling in opposite direction as electrons in a copper wire


Electrons traveling in the opposite direction:
Electron e4 again becomes entangled with the proton and attempts to maintain the radius of entanglement and moves away from the wire.

As seen in the above diagram at Time T 2 some of the protons positive charge is experienced by electron e4 in the downward direction. Electron e2 pushed electron e3 downwards and took the entanglement with the proton away from electron e3 and allowed the temporary gap for the positive charge to be experienced by electron e4. At Time T3 electron e2 has blocked/shielded the positive charge from the proton. The temporary gap at time T 2 creates a virtual dipole.


\section*{Magnets}

\section*{3s, 3p, and 3d electrons in iron atom}

Northern hemisphere electrons: s and d shell electrons are spin down p shell electrons are spin up


Southern hemisphere electrons: p shell electrons are spin down s and d shell electrons are spin up


An iron atom has six 3d electrons, five of them can be spin up and the sixth will be spin down. In a strong external magnetic field, the spin down 3 d electron can be pushed/pulled by the external magnetic field to one of the four empty 3d positions to maximize the alignment of the atoms magnetic/electric field with that of the external magnetic field. The 3p electrons weak entanglements with surrounding electrons may be overcome by a strong external magnetic field in order for the 3 p electron to move to a new position and entangle with the electrons surrounding the new position. In a weaker magnetic field, the \(3 p\) electron could move a small distance away from its equilibrium position without breaking/losing its entanglement with the surrounding electrons. In this case the 3 p electron would move back to its original position when the external magnetic field is removed. The side of the iron atom with the five 3d electrons will be the negative side of the iron atom and the other side with only one 3d electron will be the positive side of the iron atom due to the positive nucleus has fewer electrons to block its positive charge.

\section*{Arrangment of iron atoms in a magnet}
the spin down 3d electrons position in the iron atoms gives
the iron atoms an arrangment where they align in a roughly circular pattern throughout the magnet as shown below:


Magnets attracting and repelling each other Attraction: north pole facing south pole
The negatively charged sides of the atoms in one magnet attract the positively charged sides of the atoms in the other magnet causing the 2 magnets to move closer together


Repulsion: south pole facing south pole The negatively charged sides of the atoms in one magnet repel the negatively charged sides of the atoms in the other magnet and the positive sides in one magnet repel the positive sides in the other magnet causing the 2 magnets to move away from each other


Magnets side by side
Case 1: N and S attraction is stronger than repulsion and the


When side by side, 2 bar magnets with either attract each other, north and south poles on both ends, or repel each other, same poles on each end. The diagram above shows the attraction is due to the atoms in one magnet that are closest to the other magnet are aligned such that their positive end points towards the negative end of the atoms in the other magnet. Being the closest atoms in both magnets causes a net attraction. For the magnets that have both north poles on the same ends together they have the opposite situation. The atoms in one magnet that are closest to the other magnet have their positive ends pointing at the positive ends in the other magnet and the negative ends point at the negative ends in the other magnet and this give a net repulsion between the 2 bar magnets.
Magnet pushed through loop of wire
Entanglement of electrons in magnet with electrons in wire want to maintian same entanglement distance. Moving the magnet causes electrons in wire move.
```

magnet pushed into loop of wire

```
    -----
    -----
entanglement
entanglement
pushing electrons
pushing electrons
in wire
in wire
entanglement
entanglement
pushing back on
pushing back on
protons in magnet
protons in magnet


An iron magnet is pushed into a coil of wire. Many of the iron atoms in the magnet have the 3d electron with a spin value different than the other five 3 d electrons and that one 3 d electron is aligned with the 3 d electron in other iron atoms. The iron atoms are aligned positive end of one atom next to the negative end of the atom next to it. The atoms are aligned together in a circular pattern as seen in the magnet above. This pattern extends all the way to the center of the magnet. The negative side of the atoms in the magnet, the five 3d electrons, entangle with the electrons in the coil of wire and the magnet is pushed towards the coil of wire. The electrons in the magnet and the electrons in the coil want to maintain the same entanglement distance, but with the magnet pushed towards the coil the distance shortens between the electrons and they push on each other to maintain the entanglement distance. The electrons in the magnet are bound tightly to the nucleus whereas the valence electrons in the coil are loosely bound and they will move in the coil to maintain the entanglement distance. The moving electrons in the coil will also entangle with the protons and positive end of the electrons in the magnet causing resistance to the magnet being pushed into the coil. Stronger entanglements will be created as the magnet is pushed closer to the coil. The virtual dipoles in the wire also helps to repel the magnet.

Moving electron entangled with a "positive" charge


A fast-moving electron passing a fixed "positive charge will become entangled with the positive charge. The electron can be centimeters away and become weakly entangle at one of the positive charges "radius of entanglement" spheres. Once entangled, the electron will continue to travel closer to the positive charge but the positive charge will push the electron away when it is inside the radius of entanglement. This "repulsion: will continue while the electron is inside the radius of entanglement. When the electrons velocity takes it back outside the radius of entanglement then the positive charge will pull on the electron and change the electrons path again. The electrons momentum allows it to continue moving away from the positive charge with less deflection the farther away the electron travels.

\section*{Moving electron in magnetic field}

\section*{Time T1 and T2}


An electron moving above the north pole of a magnet will entangle with the "positive" side of the iron atoms in the magnet.
There are 3 actions that take place when the electron is moving:
EE: Electron entangles with an iron atom
EPC: Electron is pulled closer
EPA: Electron is pushed away
The diagram above shows the electron entangling with 7 iron atoms. The entanglement occurs at one of the "radius of entanglement" spheres around the "positive" charge of an iron atom. If the electron travels inside the radius of entanglement the positive charge will try to push the electron away. If the electron travels outside the radius of entanglement the positive charge will try to pull the electron closer. As the electron travels above the magnet there will be areas where the negative side of the iron atom is pointing towards the electron and this shields the electron from the positive side of the iron atom and there will be no entanglement.

\section*{Moving electron in magnetic field Time T3}


Time T4


At Time T3 the electron has 5 iron atoms trying to push it away and 2 iron atoms are trying to pull the electron closer.
At Time T4 the electron still has 5 iron atoms trying to push it away and 2 iron atoms are trying to pull the electron closer.

As the electron moves over the magnet more and more iron atoms will entangle with the electron and with the pushing and pulling of the iron atoms the electron will forced into a curved path over the magnet.

\section*{Silver atom moving in inhomogeneous magnetic field}


The diagram above shows how the nucleus and the 5 s 1 electron likely align themselves in the nonhomogeneous magnetic field, this is the Stern-Gerlach experiment.

\section*{Right side of wedge magnet}


Top diagram above: A positive charge enters from the right. The positive charge entering from the right entangles with more negative charges above its path and entangles with fewer negative charges below its path as it travels past the magnet. With greater numbers above its path the positive charge will be pulled upwards.
Bottom diagram above: A negative charge enters from the right. The negative charge will entangle with more positive charges in the bottom part of the magnet than in the top part of the magnet and this will pull the negative charge in a direction towards the bottom of the magnet.

Left side of wedge magnet


Negative charge entering
magnetic field at Time \(1 \quad\) Negative charge


Top diagram above: A positive charge enters from the left. The positive charge entering from the left entangles with more negative charges below its path and entangles with fewer negative charges above its path as it travels past the magnet. With greater numbers below its path the positive charge will be pulled downwards.
Bottom diagram above: A negative charge enters from the left. The negative charge will entangle with more positive charges in the top part of the magnet than in the bottom part of the magnet and this will pull the negative charge in a direction towards the top of the magnet.

\section*{Silver atoms deflected up or down in a magnetic field}


Detailed view of silver atoms moving in magnetic field


The silver atoms in the diagram above are moving out of the page below a wedge-shaped magnet with its north pole facing down at the silver atoms as they pass by. The south pole below the silver atoms is not shown. The orientation of the silver atoms are random and when they enter the nonhomogeneous magnetic field and they will attempt to line up horizontally due to entangling with atoms in the magnets. The slanted surface of the top magnet causes unequal deflection of the silver atoms based on which "charged" component is closer to one of the wedge surfaces of the wedge magnet. The diagram above shows two 5 s 1 electrons and shows the difference in the magnitudes of the "forces" exerted on the components that determine which electrons are moved in the up direction or the down direction.

\section*{Gamma rays produced by colliding quarks page 1}

\section*{2 colliding up quarks and 2 colliding down quarks}

High velocity proton 1 heading into paper to collide with proton 2


The 2 down quarks in the middle collide with each other and the 2 up quarks on the right collide with each other.

2 up quarks colliding and 2 down quarks colliding


Two protons can collide at high velocity and produce 2 gamma rays. To do this the two quarks in each proton need to collide with each other. A down quark in each proton needs to collide and an up quark in each proton need to collide with each other. The components of the quarks also need to be aligned so that a "negative" component is colliding with a "positive" component in the other quark. This process will create two gamma ray photons. Time T1 shows the quarks components approaching each other. Time T2 shows the gamma ray photon components beginning to form.

Gamma rays produced by colliding quarks, page 2 photons created


Time T5 protons and photons moving away


Time 3 shows the gamma ray components separate from the parent components. Time 4 shows the gamma ray components accelerated up to the speed of light.
Time 5 shows the gamma rays speeding away.

\section*{Particle creation: an extension of photon creation}


A pion can be created by colliding 2 protons where an up quark in one proton collides with a down quark in the other proton. This is the same process as photon creation. When the "positive" component in the up quark collides with the "negative" component in the down quark and the "negative" component in the up quark collides with the "positive" component in the down quark with enough velocity then a pair of pions are created.

\section*{Pion creation page 2}
up quark and down quarks colliding with much higher velocity create a jet of pions


If the 2 protons are accelerated to a much higher velocity and an up quark in one proton collides with a down quark in the other proton then a jet of pions occur. The number of pions in the jet increases as the proton's velocity is increased. When each pair of pions are created they will be repelled by their parent components at which point another pion pair will be created. This collision process creates all the heavier particles.

Negative pion decay


When a negative pion is created from an up quark and down quark collision the pion's components are the same distance apart as down quark components. This distance is too short for the mass of the negative pion. The 2 pion components quickly create a muon neutrino which increases the distance between the pion components and the negative pion becomes a negative muon. The neutrino that was created is a muon neutrino. The distance between the muon components in the negative muon causes a decay into a negative reint and a reint neutrino to acquire the longer distance between components, "reint" from reinterpretation. This new longer distance between the components is still too close so the negative reint decays into an electron
and an electron antineutrino to get to the natural distance for the mass of the components, which is now an electron.

\section*{Neutron decay page 1}

Time T1
The kinetic energy of the 2 down quarks in the neutron can cause the 2 down qaurks to sometimes rotate in sync in different directions around the up quark leading to the decay of the neutron into a proton.


\section*{Time T2}

At time t2 the down quarks are part way through their rotation


The neutron begins the decay process when its two down quarks swing around the up quark that is in between them, this action happens at random. When the down quarks swing/rotate around the up quark they move from being serial aligned to the up quarks to being parallel aligned with the up quarks and they will be on opposite sides of the up quark. As the down quarks approach the up quark new small components start forming due to how close the down quarks are to the up quarks. The Time T2 diagram shows new components forming.

\section*{Neutron decay Page 2}

Time T3
Components: result
1 and 2: will change to an up quark
3 and 4: will remain an up quark
5 and 6: will remain a down quark
7 and 8: newly created components that
will break the entanglement
between the down quark and
up quark (components 2 and 3)
Time T3 shows the creation
of new components that will
lead to the creation of a proton and an electron


At time T3 the small components have formed and separated from their parent components. 4 new components have formed. 2 components, 9 and 10 , have formed a "reint" particle which will decay to an electron and an electron antineutrino. The other 2 components 7 and 8 , a "medium" sized particle, will break the entanglement between down quark A and up quark A .

Neutron decay Page 3
Time T4


Components 7 and 8 create a "Medium" sized particle. Very quickly component 7 merges with component 3 and component 8 merges with component 2 and removes the entanglement between Components 3 and 2. The creation of components 7 and 8 also creates a strong entanglement between components 1 and 5 . Components 9 and 10 form a new reint particle which escapes from the new proton.


Component 1 is reduced in size and component 2 is increased in size changing the down quark to an up quark and creates a proton.

\section*{Neutron decay Page 4}

\section*{Time T6}

The 2 up quarks will rotate back to their average positions


\section*{Time T7}

New proton


With the +1 positive charges of the up quarks on the ends of the proton the nucleon is in a more stable configuration.

The nucleus
Protons and neutrons in a grid
Filling the levels in the nucleus
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline+8.5 & -7.5 & +6.5 & -5.5 & +4.5 & -4.5 & +5.5 & -6.5 & +7.5 & -8.5 \\
\hline-7.5 & +6.5 & -5.5 & +4.5 & -3.5 & +3.5 & -4.5 & +5.5 & -6.5 & +7.5 \\
\hline+6.5 & -5.5 & +4.5 & -3.5 & +2.5 & -2.5 & +3.5 & -4.5 & +8.5 & -6.5 \\
\hline-5.5 & +4.5 & -3.5 & +2.5 & -1.5 & +1.5 & -2.5 & +3.5 & -4.5 & +5.5 \\
\hline+4.5 & -3.5 & +2.5 & -1.5 & +0.5 & -0.5 & +1.5 & -2.5 & +3.5 & -4.5 \\
\hline+4.5 & -3.5 & +2.5 & -4.5 & +0.5 & -0.5 & +1.5 & -2.5 & +3.5 & -4.5 \\
\hline-5.5 & +4.5 & -3.5 & +2.5 & -1.5 & +1.5 & -2.5 & +3.5 & -4.5 & +5.5 \\
\hline+6.5 & -5.5 & +4.5 & -3.5 & +2.5 & -2.5 & +3.5 & -4.5 & +5.5 & -6.5 \\
\hline-7.5 & +6.5 & -5.5 & +4.5 & -3.5 & +3.5 & -4.5 & +5.5 & -6.5 & +7.5 \\
\hline+8.5 & -7.5 & +6.5 & -5.5 & +4.5 & -4.5 & +5.5 & -6.5 & +7.5 & -8.5 \\
\hline
\end{tabular}

The blue colored neutron has a value of -1.5
spin in the grid.

The red colored proton has a value of +3.5 spin in the grid.


The atomic nucleus has planes/levels that are created by parallel-entangled protons and neutrons. The levels start with level 0 which is the level that is populated first and will contain the highest number of nucleons as the levels become populated. Levels \(1,2,3\), etc. will be filled above level 0 and levels \(-1,-2,-3\), etc. will be filled below level 0 . The 4 quadrants in each level are populated by either protons or neutrons. Quadrants 1 and 3 are filled by neutrons and quadrants 2 and 4 are filled by protons. Proton-proton and neutron-neutron parallel entanglements are more stable than the parallel entanglement between a proton and a neutron. Spin values of protons and neutrons for specific locations in the nucleus are shown in the grid. Each layer has the same spin values as the layers above and below. Protons and neutrons in one layer are serially entangled with the protons and neutrons in the adjacent layers above and below. Nucleons in the same layer are parallel entangled with each other. The initial layer populated is level 0 . If a nucleus has levels \(-1,0,+1,+2\), the topmost level is the +2 level. The diagrams look down from the top of the nucleus.

\section*{Alpha decay example} Before decay


An alpha decay occurs in level 2 shown above. The 2 protons and 2 neutrons in the green square have a weak entanglement with the nucleons in the levels above or below and/or the nucleons next to them in the same level. The chaotic vibrations in the nucleus plays a part and may be too great and will help with the ejection of the alpha particle. The loss of this alpha particle can create an imbalance in the symmetry in the nucleus which can lead to additional alpha and/or beta decays. The spin values of the ejected alpha particle add up to zero and the nucleus spin value does not change after the alpha particle ejection.

\section*{Neutron assisted alpha decay example}


In neutron assisted alpha decay, 2 neutrons have been put into a weakly entangled state at their original positions due to 2 previous alpha decays. The 2 neutrons move and entangle with the 2 protons shown above. This new entanglement with the 2 protons weakens the protons entanglement with the other nucleons around them and causes the 2 neutrons and 2 protons to be ejected as an alpha particle.

\section*{Beta decay example Before decay}


In this beta decay example, a neutron in level 2 with a spin of -4.5 decays into a proton, electron, and an electron antineutrino and the new proton serially entangles with the proton in quadrant 2 that has a spin of -0.5 . This puts the new proton in level 3 of the nucleus and the new proton now has a spin of -0.5 . If the nucleus originally had a spin of 0 it now has a spin of +4 .
Math: \(((-0.5)-(-4.5))=+4\).

\section*{The 4 sections on the nucleus:}

Adding nucleons to nuclear shells (Krane, 1988):
In this section there are diagrams showing the locations of protons and neutrons added to fill a particular subshell. The nucleons are added from lowest energy to highest energy. The spin value and numbers of protons and neutrons added are shown and a 3D view shows where in each level the nucleons are added.

\section*{Adding protons and neutrons to level 1 from sulfur- 32 up to calcium-40:}

This section shows locations of protons and neutrons added in order for elements sulfur-32, Chlorine-35, Argon-36, Potassium-39, and calcium-40.

\section*{Uranium-238 to Lead-206 decay chain:}

This section shows the alpha and beta decay steps for the decay chain from Uranium-238 to Lead-206. The locations and levels of where the nucleons are ejected from are shown.

\section*{Fission of Uranium-235 into Xenon-140 and Strontium-94:}

This section shows the initial state of the Uranium-235 configurations and the decay chains for Xenon-40 and Strontium-94.

Adding nucleons to nuclear shells
level 0 , subshell 1 s spin \(1 / 2\), 2 protons, 2 neutrons added
- Total Protons:
2

Total Neutrons:
2
Total Spin: 0

arrows indicate
\(\downarrow\) protons and
neutrons added
to the level
Element: 4 He - Helium
level 0 , subshell 1 p spin \(3 / 2,4\) protons, 4 neutrons added

level 1, subshell 1 p spin \(1 / 2,2\) protons, 2 neutrons added
 Total Spin: 0

Bement: 160 -Oxygen

level 0, subshell 1 d spin 5/2, 6 protons, 6 neutrons added
- Total Protons: 14
- Total Neutrons: 14

Total Spin: 0
Dement: \(\square\) 28 Si - Silicon

level 0
\begin{tabular}{|c|c|c|c|c|c|}
\hline+4.5 & -3.5 & -2.5 & -2.5 & +3.5 & -4.5 \\
\hline-3.5 & -2.5 & -4.5 & -4.5 & -2.5 & +3.5 \\
\hline-2.5 & -1.5 & -0.5 & -0.5 & +1.5 & -2.5 \\
\hline-2.5 & 4.5 & -0.5 & -0.5 & -1.5 & -2.5 \\
\hline-3.5 & -2.5 & -1.5 & -1.5 & -2.5 & +3.5 \\
\hline+4.5 & -3.5 & -2.5 & -2.5 & +3.5 & -4.5 \\
\hline
\end{tabular}

level -1 , subshell 2 s spin \(1 / 2,2\) protons, 2 neutrons added
- Total Protons: 16

Total Neutrons: 16
Total Spin: \(\square\)

Element: 32 S - Sulfur


level

level 1, subshell 1d spin 3/2, 4 protons, 4 neutrons added
Total Protons:
Total Nectrons:


Total Spin: \(\square\)
Bement:
```

40Ca-Calcum

```

\begin{tabular}{|c|c|c|c|}
\hline \multicolumn{4}{|c|}{level 0} \\
\hline +4.5 & -3.5 & \[
\begin{array}{|c|c|}
\hline-2.5 & +3.5
\end{array}
\] & -4.5 \\
\hline -3.5 & \[
12
\] & & +3.5 \\
\hline & & & \\
\hline & & & \\
\hline -3.5 & & & \\
\hline +4.5 & -3.5 & \[
(2.5)(-2.5)+3.5
\] & -4.5 \\
\hline
\end{tabular}
\[
\text { level } 1
\]

level 0 , subshell 1 f spin \(7 / 2\), 8 protons, 10 neutrons added
level 0
level -1

\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline+6.5 & -5.5 & +4.5 & -3.5 & -3.5 & -4.5 & +5.5 & -6.5 \\
\hline-5.5 & +4.5 & -3.5 & -2.5 & -2.5 & -3.5 & -4.5 & +5.5 \\
\hline+4.5 & -3.5 & -2.5 & -4.5 & -1.5 & -2.5 & -3.5 & -4.5 \\
\hline-5.5 & -2.5 & -1.5 & -0.5 & -0.5 & -1.5 & -2.5 & -3.5 \\
\hline-3.5 & -2.5 & -4.5 & -0.5 & -0.5 & 1.5 & -2.5 & -3.5 \\
\hline+4.5 & -3.5 & -2.5 & -4.5 & -4.5 & -2.5 & -4.5 & -4.5 \\
\hline-5.5 & +4.5 & -3.5 & -2.5 & -2.5 & -3.5 & -4.5 & +5.5 \\
\hline+6.5 & -5.5 & +4.5 & -3.5 & -3.5 & -4.5 & +5.5 & -6.5 \\
\hline
\end{tabular}

level -1 , subshell 2 p spin \(3 / 2,4\) protons, 12 neutrons added

Total Protons: 32
Total Neutrons: 42
Total Neutrons:
Total Spin: \(\square\)
Element: 74 Ge -Gernanium
level 2, subshell \(2 p\) spin \(1 / 2\), 2 protons, 0 neutrons added
- Total Protons: \(\square\)
\(\square\)
- Total Neutrons:

Total Spin: \(\square\)
Element: 90 Zr -Zrconium
\(\square\)
\(90 Z\)-Zirconimint
level 0

level 0 , subshell 1 g spin 9/2, 10 protons, 20 neutrons added

level 1, subshell 1 g spin \(7 / 2\), 8 protons, 12 neutrons added

level 1
\begin{tabular}{|c|c|c|c|c|c|}
\hline +6.5 & -5.5 & \[
+4.5
\] & & & -6 \\
\hline -5.5 & +4.5 & & & & \\
\hline +4.5 & & & & & \\
\hline & & & & & \\
\hline & & & & & \\
\hline & & & & & \\
\hline & & & & & \\
\hline & & & & & \\
\hline & & & & -4.5 & +5.5 \\
\hline & & & & & \\
\hline +6.5 &  & & \[
15-4.5
\] & +5.5 & -6.5 \\
\hline
\end{tabular}
\begin{tabular}{|l|l|}
\multicolumn{1}{l}{ level 2} \\
\hline 0.5 & 0.5 \\
\hline 0.5 & 0.5 \\
\hline & \\
\hline
\end{tabular}
level 0

level -1 , subshell spin 5/2, 6 protons, 12 neutrons added


Element: 158 Gd-Gadolinium

level 1
\begin{tabular}{|c|c|c|c|c|c|}
\hline +6.5 & -5.5 & +4.5 & 3.5) 3.5 & & \\
\hline -5.5 & +4.5 & & & & \\
\hline 4.5 & 3.5 & & & & \\
\hline & & & & & \\
\hline & & & & & \\
\hline & & & & & \\
\hline & & & & 5. & \\
\hline & & & & -4.5 & +5.5 \\
\hline +6.5 & \[
-5.5
\] & & \[
\text { (3.5) }-3.5 \text {-4.5 }
\] & +5.5 & -6.5 \\
\hline
\end{tabular}
level 2

\begin{tabular}{|c|c|c|c|}
\hline \multicolumn{4}{|c|}{level -1} \\
\hline +4.5 & -3.5 & 2.5 & \\
\hline \multicolumn{4}{|l|}{-3.5} \\
\hline \multicolumn{4}{|l|}{} \\
\hline \multicolumn{4}{|l|}{\multirow[t]{2}{*}{-2.5 \(\uparrow\)-1.5 0.500 .50 .5}} \\
\hline & & & \\
\hline \multicolumn{4}{|l|}{\multirow[t]{2}{*}{}} \\
\hline & & & \\
\hline \multicolumn{4}{|l|}{\multirow[t]{2}{*}{}} \\
\hline & & (2.5) \(-2.5{ }^{+3.5}\) & \\
\hline
\end{tabular}

level 2, subshell spin 3/2, 4 protons, 4 neutrons added

level 1

level 0

level 3, subshell spin \(1 / 2,2\) protons, 6 neutrons added
- Total Protons:

Total Nectrons:
Total Spin:
\(\square\)
70
\(\square\)
0
Element: 174 Yb - Mterbium


level 3

level 0

level -1

level 2
\begin{tabular}{|c|c|c|c|c|c|}
\hline+4.5 & -3.5 & -2.5 & -2.5 & -3.5 & -4.5 \\
\hline-3.5 & -2.5 & -4.5 & -1.5 & -2.5 & -3.5 \\
\hline-2.5 & -1.5 & 0.5 & -0.5 & +1.5 & -2.5 \\
\hline-2.5 & 1.5 & -0.5 & -0.5 & 1.5 & -2.5 \\
\hline-3.5 & -2.5 & -4.5 & -1.5 & -2.5 & +3.5 \\
\hline+4.5 & 3.5 & -2.5 & -2.5 & +3.5 & -4.5 \\
\hline
\end{tabular}
level 1
\begin{tabular}{|c|c|c|c|c|c|}
\hline +6.5 & -5.5 & +4.5 & & & - \\
\hline -5.5 & +4.5 & & & & \\
\hline +4.5 & & & & & \\
\hline & & & & & \\
\hline & & & & & \\
\hline & & & & & \\
\hline & & & & & \\
\hline & & & & & \\
\hline & & & & -4.5 & +5.5 \\
\hline & & & & & \\
\hline +6.5 & & & \[
-4.5
\] & +5.5 & -6.5 \\
\hline
\end{tabular}
level 0 , subshell spin \(11 / 2,12\) protons, 22 neutrons added
- Total Protons: 82

Total Neutrons: 126
Total Son: \(\square\)
Element: 208 Pb -Lead
Elemert: 208 Pb-Lead

level 3
level 0

level -1

\begin{tabular}{|r|r|}
\hline 0.5 & -0.5 \\
\hline 00.5 & -0.5 \\
\hline
\end{tabular}
level 2

level 1
\begin{tabular}{|c|c|c|c|c|c|}
\hline +6.5 & -5.5 & +4.5 & & & \\
\hline -5.5 & +4.5 & \[
3.5
\] & & & \\
\hline +4.5 & 6. & & & & \\
\hline & & & & & \\
\hline & & & & & \\
\hline & & & & & \\
\hline & & & & & \\
\hline & & & & & \[
-4.5
\] \\
\hline & & & & -4.5 & +5.5 \\
\hline & & & & & \\
\hline & & & \[
\begin{array}{l|l|l|}
\hline-3.5 & (3.5 & -4.5 \\
\hline
\end{array}
\] & +5.5 & -6.5 \\
\hline
\end{tabular}
level 1, subshell spin 9/2, 10 protons, 20 neutrons added


Total Spin: 0

level 1

level 3

level 0

level -1

level 2
\begin{tabular}{|c|c|c|c|}
\hline *4.5 & -3.5 & (2.5) 2.5 & \\
\hline -3.5 & \[
6.5
\] & + & \\
\hline 2.5 & & & \\
\hline & & & \\
\hline & & & \\
\hline & & & \\
\hline & & & \\
\hline & & 2.5)-2.5) +3.5 & 5 \\
\hline
\end{tabular}
level 1
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline +8.5 & -7.6 & +6.5 & -5.5 & \[
+.5
\] & \[
+4.5+5.5
\] & \[
6.5
\] & +7.5 & -8.5 \\
\hline -7.5 & +6.5 & -5.5 & \[
+.5
\] & & \[
5
\] & & & \\
\hline +6.5 & -5.5 & \[
64.5
\] & & & +3.5 & & & \\
\hline -5.5 & \[
0.5
\] & & & & \[
5
\] & & & \\
\hline  & & & & &  & & & \\
\hline & & & & & & & & \\
\hline & & & & &  & & & \(+5.5\) \\
\hline & & & & & \[
-2.5+3.5
\] & \[
4.5
\] & +5.5 & -6.5 \\
\hline & & & & &  & +5.5 & -6.5 & +7.5 \\
\hline +8.5 & \[
5
\] & \[
6.5
\] & \[
5.5
\] & \[
1.5
\] & \[
+4.5)+5.5
\] & -6.5 & +7.5 & -8.5 \\
\hline
\end{tabular}

Adding protons and neutrons to level 1 from sulfur-32 up to calcium-40



Bement: 35 Cl -Chlorne
1 proton and 2 neutrons added to make Chlorine- 35

1 proton added to make Argon-35



Bement: 39 K -Potassium
1 proton and 2 neutrons added to make Potassium-39

1 proton added to make Calcium-40


U238 to Pb206 decay chain


Step 1: Uranium-238 alpha decay


Result: Thorium-234

level 3
\begin{tabular}{|c|c|}
\hline+0.5 & -0.5 \\
\hline+0.5 & -0.5 \\
\hline
\end{tabular}

Step 2: Thorium-234 beta decay


Result: Protactinium-234

level 2

level 2

level 2

level 3


Element: 234 U-Uranium

level 2


Step 4: Uranium-234 alpha decay


Result: Thorium-230

level 2

level 3

level 3


Element: 226 Ra -Radium
Step 6: Radium-226 alpha decay
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline & & & \multicolumn{4}{|c|}{level -1} \\
\hline 0 & Total Protons: & 88 & +2.5 & -1.5 & +1.5 & -2.5 \\
\hline 0 & Total Neutrons: & 138 & 4.5 & +0.5 & -0.5 & +1.5 \\
\hline & Total Spin: & 0 & & 5 & & \\
\hline Element: & 226 Ra - Radium & & 5 & 4.5 & 5 & -2.5 \\
\hline
\end{tabular}

Result: Radon-222

level 2

level 3


Step 7: Radon-222 alpha decay


Result: Polonium-218

level 2

level 3

level 2

level 3


Step 8a: Polonium-218 neutron assisted alpha decay


Total Spin:
Element
218 Po - Polonium

level 2



Result: Lead-214

level 2

level 2

level 3
\begin{tabular}{|l|l|}
\hline+0.5 & -0.5 \\
\hline+0.5 & -0.5 \\
\hline
\end{tabular}
level 3
\begin{tabular}{|l|l|}
\hline+0.5 & -0.5 \\
\hline+0.5 & -0.5 \\
\hline
\end{tabular}
level 3
\begin{tabular}{|l|l|}
\hline+0.5 & -0.5 \\
\hline+0.5 & -0.5 \\
\hline
\end{tabular}

Step 10: Bismuth-214 beta decay
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline & & & \multicolumn{4}{|c|}{level -1} \\
\hline 0 & Total Protons: & 83 & +2.5 & -1.5 & +1.5 & -2 \\
\hline - & Total Neutrons: & 131 & (8) & +0.5 & -0.5 & 5 \\
\hline & Total Spin: & 1 & & +0.5 & -0.5 & \\
\hline Element: & 214 Bi - Bismuth & & 5 & -1.5 & +1.5 & -2.5 \\
\hline
\end{tabular}

Result: Polonium-214
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline & & & \multicolumn{4}{|c|}{level -1} \\
\hline 0 & Total Protons: & 84 & +2.5 & -1.5 & +1.5 & 2.5 \\
\hline 0 & Total Neutrons: & 130 & 4.5 & +0.5 & -0.5 & \\
\hline & Total Spin: & 0 & & +0.5 & -0.5 & ) \\
\hline Eement: & 214 Po - Poloniu & & +2.5 & -1.5 & +1.5 & -2.5 \\
\hline
\end{tabular}
level 2

level 3
\begin{tabular}{|l|l|}
\hline+0.5 & -0.5 \\
\hline+0.5 & -0.5 \\
\hline
\end{tabular}

Eement: \(\square\)
alpha decay
Step 11: Polonium-214

level 3
\begin{tabular}{|c|c|}
\hline+0.5 & -0.5 \\
\hline+0.5 & -0.5 \\
\hline
\end{tabular}

Result: Lead-210

level 2
\begin{tabular}{|c|c|c|c|c|c|}
\hline+4.5 & -3.5 & +2.5 & -2.5 & +3.5 & -4.5 \\
\hline-3.5 & -2.5 & -4.5 & +1.5 & -2.5 & +3.5 \\
\hline+2.5 & -1.5 & +0.5 & -0.5 & +1.5 & -2.5 \\
\hline+2.5 & -1.5 & +0.5 & -0.5 & +1.5 & -2.5 \\
\hline-3.5 & +2.5 & -1.5 & -1.5 & -2.5 & +3.5 \\
\hline+4.5 & -3.5 & +2.5 & -2.5 & +3.5 & -4.5 \\
\hline
\end{tabular}
level 3
\begin{tabular}{|l|l|}
\hline+0.5 & -0.5 \\
\hline+0.5 & -0.5 \\
\hline
\end{tabular}

Step 12: Lead-210 beta decay


level 2
\begin{tabular}{|c|c|c|c|c|c|}
\hline+4.5 & -3.5 & +2.5 & -2.5 & +3.5 & -4.5 \\
\hline-3.5 & +2.5 & -1.5 & +1.5 & -2.5 & +3.5 \\
\hline+2.5 & -1.5 & -0.5 & -0.5 & +1.5 & -2.5 \\
\hline+2.5 & -1.5 & +0.5 & -0.5 & +1.5 & -2.5 \\
\hline-3.5 & +2.5 & -1.5 & +1.5 & -2.5 & +3.5 \\
\hline+4.5 & -3.5 & +2.5 & -2.5 & +3.5 & -4.5 \\
\hline
\end{tabular}
level 3
\begin{tabular}{|l|l|}
\hline+0.5 & -0.5 \\
\hline+0.5 & -0.5 \\
\hline
\end{tabular}
level 2
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline +4.5 & -3.5 & +2.5 & -2.5 & \(+3.5\) & -4.5 & \multicolumn{2}{|l|}{\multirow[b]{2}{*}{level 3}} \\
\hline -3.5 & 5 & -1.5 & +1.5 & -2.5 & & & \\
\hline & & & -0.5 & +1.5 & & +0.5 & -0.5 \\
\hline 2.5 & & & 0.5 & & & +0.5 & -0.5 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|}
\hline+4.5 & -3.5 & +2.5 & -2.5 & +3.5 & -4.5 \\
\hline-3.5 & +2.5 & -1.5 & +1.5 & -2.5 & +3.5 \\
\hline+2.5 & -4.5 & +0.5 & -0.5 & +1.5 & -2.5 \\
\hline+2.5 & -1.5 & +0.5 & -0.5 & +1.5 & -2.5 \\
\hline-3.5 & +2.5 & -1.5 & +1.5 & -2.5 & +3.5 \\
\hline+4.5 & -3.5 & +2.5 & -2.5 & +3.5 & -4.5 \\
\hline
\end{tabular}

level 3
\begin{tabular}{|l|l|}
\hline+0.5 & -0.5 \\
\hline+0.5 & -0.5 \\
\hline
\end{tabular}

Result: Polonium-210
Element: 210 Po - Polonium
\begin{tabular}{l}
\multicolumn{1}{c}{ level -1 } \\
\begin{tabular}{|c|c|c|c|}
\hline+2.5 & -1.5 & +1.5 & -2.5 \\
\hline+1.5 & +0.5 & -0.5 & +1.5 \\
\hline-1.5 & +0.5 & -0.5 & +1.5 \\
\hline+2.5 & -1.5 & +1.5 & -2.5 \\
\hline
\end{tabular}
\end{tabular}

Step 13a: Polonium-210 neutron

level 2


Step 13b: Polonium-210 alpha decay


Result: Lead-206

level 0

level -1
\begin{tabular}{|c|c|c|c|}
\hline+2.5 & -1.5 & +1.5 & -2.5 \\
\hline-1.5 & +0.5 & -0.5 & +1.5 \\
\hline-1.5 & +0.5 & -0.5 & +1.5 \\
\hline+2.5 & -1.5 & +1.5 & -2.5 \\
\hline
\end{tabular}
level 2
\begin{tabular}{|c|c|c|c|c|c|}
\hline+4.5 & -3.5 & +2.5 & -2.5 & +3.5 & -4.5 \\
\hline-3.5 & +2.5 & -1.5 & +1.5 & -2.5 & +3.5 \\
\hline+2.5 & -1.5 & +0.5 & -0.5 & +1.5 & -2.5 \\
\hline+2.5 & -1.5 & +0.5 & -0.5 & +1.5 & -2.5 \\
\hline-3.5 & +2.5 & -1.5 & +1.5 & -2.5 & +3.5 \\
\hline+4.5 & -3.5 & +2.5 & -2.5 & +3.5 & -4.5 \\
\hline
\end{tabular}
level 1
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline +8.5 & -7.5 & +6.5 & -5.5 &  & \[
6.5
\] & 4.5 & -8.5 \\
\hline -7.5 & +6.5 & -5.5 & & 5 5 +3.5 -4.5 & & & \\
\hline +6.5 & -5.5 &  & & 5) -2.5 +3.5 & & & \\
\hline -5.5 &  & & & & & & \\
\hline & & & &  & & & \\
\hline & & & & & & & \\
\hline & & & & & & & +5.5 \\
\hline & & & & & & +5.5 & -6.5 \\
\hline & & & &  & +5.5 & -6.5 & +7.5 \\
\hline +8.5 & & & \[
(-5.5
\] & \[
\text { .5) } 4.5+5.5
\] & -6.5 & +7.5 & -8.5 \\
\hline
\end{tabular}

Fission of U235 into Xe140 and Sr94 page 1


Fission of U235 and decay products page 2
2 decay products: Strontium-94 and Xenon-140
U235 decay result 1 Step 1: Strontium-94

level 1
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline+6.5 & -5.5 & +4.5 & -3.5 & -3.5 & -4.5 & +5.5 & -6.5 \\
\hline-5.5 & +4.5 & -3.5 & +2.5 & -2.5 & +3.5 & -4.5 & +5.5 \\
\hline+4.5 & -3.5 & +2.5 & -1.5 & +1.5 & -2.5 & +3.5 & -4.5 \\
\hline-3.5 & +2.5 & -1.5 & +0.5 & -0.5 & +1.5 & -2.5 & +3.5 \\
\hline-3.5 & +2.5 & -1.5 & -0.5 & -0.5 & +1.5 & -2.5 & +3.5 \\
\hline+4.5 & -3.5 & +2.5 & -1.5 & +1.5 & -2.5 & +3.5 & -4.5 \\
\hline-5.5 & +4.5 & -3.5 & +2.5 & -2.5 & +3.5 & -4.5 & +5.5 \\
\hline+6.5 & 5.5 & +4.5 & -3.5 & +3.5 & -4.5 & +5.5 & -6.5 \\
\hline
\end{tabular}
level 2

level 3
\begin{tabular}{|r|r|r|r|}
\hline+2.5 & -1.5 & +1.5 & -2.5 \\
\hline-1.5 & +0.5 & -0.5 & +1.5 \\
\hline-1.5 & -0.5 & -0.5 & -1.5 \\
\hline+2.5 & -1.5 & -1.5 & -2.5 \\
\hline
\end{tabular}

Step 2: Strontium-94 beta decay

level 3
\begin{tabular}{|c|c|c|c|}
\hline+2.5 & -4.5 & +1.5 & -2.5 \\
\hline 4.5 & 0.5 & -0.5 & +1.5 \\
\hline 4.5 & -0.5 & -0.5 & -1.5 \\
\hline+2.5 & -1.5 & -4.5 & -2.5 \\
\hline
\end{tabular}

Fission of U235 and decay products page 3 Result: Yttrium-94

level 1

level 2

level 3


Step 3: Yttrium-94 beta decay

level 1

level 2

level 3


Fission of U235 and decay products page 4 Result: Zirconium-94
- Total Protons: \(\square\)

- Total Neutrons:

Total Spin: \(\square\)
\(\square\)


Element: 94 Zr - Zirconium

level 1


level 3


Fission of U235 and decay products page 5 U235 decay result 2 Step 1: Xenon-140
- Total Protons: \(\square\)
- Total Nectrons: \(\square\) Total Spin: \(\square\)
Element: 140 Xe -Xenon

level 0



Fission of U235 and decay products page 6 Step 2: Xenon-140 beta decay
- Total Protons:
Total Nectrons: \(\square\)
Total Spin:

Element: 140 Xe - Xenon
level 0

level -1


Fission of U235 and decay products page 7 Result: Cesium-140Total Protons:

Total Neutrons
Total Spin \(\square\)
Element: 140 Cs -Cesium
level 0

level -1


Fission of U235 and decay products page 8 Step 3: Cesium-140 beta decay
- Total Protons:
- Total Neutrons:
Total Spin:
Element 140 Cs -Cesium
level 0



Fission of U235 and decay products page 9 Result: Barium-140

0
Total Protons:56
- Total Neutrons:84

Total Spin: \(\square\)
Element: 140 Ba - Barhum
level 0

level -1
\begin{tabular}{|c|c|c|}
\hline +4.5 & \[
5.5-2.5
\] & -4.5 \\
\hline -3.5 & & \\
\hline & & \\
\hline & & 2.5 \\
\hline +2.5 & & \\
\hline -3.5 & & \\
\hline +4.5 & & \\
\hline
\end{tabular}

Fission of \(U 235\) and decay products page 10 Step 4: Barium-140 beta decay
- Total Protons:
- Total Neutrons:

56

84

Total Spin: \(\square\)
Bement: \(140 \mathrm{Ba}-\) Barrum


Fission of U 235 and decay products page 11 Result: Lanthanum-140

0
Total Protons:57
- Total Neutrons:
Total Spin: \(\square\)
Element: 140 La - Lanthanum
level 0

level -1


Fission of U235 and decay products page 12 Step 5: Lanthanum-140 beta decay
- Total Protons:57
- Total Neutrons:
Total Spin:

Element 140 La - Lanthanum
level 0

level -1


Fission of U235 and decay products page 13
Result: Cerium-140
- Total Protons: \(\square\)
-
Total Neutrons:
                                82

Total Spin: \(\square\)
Element: 140 Ce -Cerium

level 0

level -1
\begin{tabular}{|c|c|c|c|c|c|}
\hline+4.5 & -3.5 & -2.5 & -2.5 & +3.5 & -4.5 \\
\hline-3.5 & -2.5 & 1.5 & -1.5 & -2.5 & +3.5 \\
\hline-2.5 & -1.5 & -0.5 & -0.5 & -4.5 & -2.5 \\
\hline+2.5 & -1.5 & 0.5 & -0.5 & -1.5 & -2.5 \\
\hline-3.5 & -2.5 & -1.5 & -4.5 & -2.5 & +3.5 \\
\hline+4.5 & -3.5 & -2.5 & -2.5 & -3.5 & -4.5 \\
\hline
\end{tabular}

\section*{Cobalt-60 in magnetic field page 1}

Co60 in magnetic field from coil of wire


The above diagram shows a cobalt-60 isotope in a magnetic field created by a loop of wire. The magnets south pole is pointing upwards through the loop. This arrangement causes the cobalt-60 atoms dipole to orient itself in the magnetic field caused by the moving electrons and the virtual dipoles in the wire. The more positive side of the nucleus points in the direction of the negative side of the virtual dipoles in the wire. The opposite side of the cobalt atom has five 3d electrons that point towards the positive side of the virtual dipoles in the wire loop. In this arrangement an unstable neutron in level \(-1,+2.5\) spin location is positioned in the part of the nucleus that points in the same direction as the south pole of the magnetic field. In this position when the neutron decays to an electron and proton, the electron will have difficulties flying through the nucleus if it headed in the direction of the north pole pointing downwards. The electron will instead fly upwards in the direction of the south pole where there are no obstacles in the way. (Wu, 1957)

Cobalt-60 in magnetic field page 2 Nickel-60 after decay of Cobalt-60


The new proton fills a -2.5 spin location in level -1 and creates a spin 0 nickel- 60 isotope.

\section*{Space and time dilation by gravitational field page 1}

Compressed component beginning its' expansion


Space dilation in a gravitational field

Displacement of point
in ether when few expanded components are in the local space


Less displacement of point
in ether when many expanded components are in the local space


When half of the components, for example all the "positive" components, are at full expansion, they have created a region of less dense ether. The more local "positive" expanded components, the less dense the local ether will be. When the local "negative" components start expanding they will be expanding into a less dense background ether.

With this lower density of background ether, the entanglement distance between a positive and negative component is shorter due to there being less ether a "negative" component can use to push the "positive" component away, this causes space dilation. The lower density ether also makes it harder for a component to interact with other components and it will take more cycles to complete the interactions. This leads to time dilation.

Space and time dilation in gravitational field page 2 Entangled positive and negative component in an empty local region of space will have a maximum distance between them


Entangled positive and negative component with many other particles in local region of space will have a shorter distance between them due to space dilation
fully expanded positive component

compressed negative component is now closer to the expanded positive \(\begin{array}{r}\text { component due to less background } \\ \text { ether available to push away the } \\ \text { negative component }\end{array}\)
original density of

Space and time dilation in gravitational field page 3 many positive and negative components in local region of space causes greater space and time dilation


\section*{Space and time dilation in gravitational field page 4} Space dilation in a gravitational field
- fully compressed component

8 fully compressed and 8 fully expanded components in an area of empty space. Distance between components is due to the dense background ether in the region which allows components to push surrounding components further away.
* fully expanded component

Many expanded components in massive obects like neutron stars and black holes results in less distance between components due to the less dense background ether in the region. This diminishes the distance that surounding components can be pushed away

There is more distance between the 16 isolated components

There is less distance between the 16 isolated components when there are many more components
in the local area


The decreased amount of background ether in a black hole makes it more difficult for the components to interact with one another and results in more cycles to create the same interactions, leading to time dilation.

\section*{Gravity page 1}


The ether to the left of the component arrives back before the ether on the right due to the faster wave velocity in the denser ether to the left of the component. The ether on the right side arrives back at a later time causing a displacement of the component.

Gravity page 2
Interaction of components 50,000 light years apart \(\longleftarrow 50,000\) light years \(\longrightarrow\)
Example 1: two positive components shown spherically expanded to 25,000 light years with no interaction \(\begin{array}{ll}\begin{array}{l}\text { spherically } \\ \text { expanding } \\ \text { positive } \\ \text { component }\end{array} & \begin{array}{l}\text { no interaction } \\ \text { with each other } \\ \text { for first } 25,000 \\ \text { light years }\end{array} \\ \text { Expanding } \\ \text { positive } \\ \text { component }\end{array}\) one positive component expands first 25,000 light years, one negative component begins spherical contraction and they interact with each other


The difference in long range interaction between same charged components and two oppositely charge components is large. In the example above, two same "charge" expanding components 50,000 light years apart have no interaction during the first 25,000 light years of expansion. This greatly reduces their "repulsive force" against each other. In contrast, the two oppositely "charged" components 50,000 light years apart do interact. The "positive component has expanded 25,000 light years and has continuous interaction with the contracting "negative component during that time. The oppositely "charge" components "attraction" during this time causes the stronger "gravitational pull" that distant objects experience.

Gravity page 3
Interaction of two positive components 50,000 light years apart shows weaker "repulsion" at long distances


Time T1 particles expand spherically

no interaction
in first 25,000
light years

Time T2
particles expand spherically


From time equals zero to time T1 at a distance of 25,000 light years there is no interaction between the 2 expanding positive components. This non-interactive time reduces the amount of compressed ether experienced by the 2 positive components and they are not pushed/displaced away from each other as much as one would expect. If there is a positive component and a negative component 50,000 light years apart, they would be attracted/displaced closer to each other more than 2 positive components 50,000 light years are pushed/displaced away from each other. This difference shows up as a greater than expected gravitational attraction for objects at long distances away from each other.

Gravity page 4
Interaction of positive and negative components 50,000 light years apart shows continuous "attraction"


Time T1
p1 component expands spherically 25,000 light years


\section*{Time T2}
p1 component
negative component p2
velocityıvelocity between tens of millions
to billions of light years and is now


The diagram above shows areas of slower ether wave velocity between the two oppositely "charged" components which will give a net "attraction" and they will move closer together.

Time dilation by acceleration and velocity Page 1 Accelerating 2 components lined up in acceleration direction acceleration direction \(\longrightarrow\)

Time T1: No acceleration and no velocity


Time T2: Acceleration and medium velocity


Time T3: Acceleration and high velocity


During acceleration the negative component shown above will push more of its' ether towards the positive component during expansion and increase the velocity of the positive component.

Time dilation by acceleration and velocity Page 2 Entanglement shown for 2 components lined up in the same direction as their velocity
entangled components with slower velocity
 density in vertical direction
entangled components with higher velocity
increased ether density flowing between entangled components accounts for the increased momentum of the entangled components


Increasing the large flow of ether between the 2 components in the forward direction becomes more and more difficult as it aproaches the maximum flow. This makes it more difficult for components to interact with one another and takes more cycles to create the same interactions resulting in time dilation.

Time dilation by acceleration and velocity Page 3 2 entangled components at high velocity lined up in parallel
stationary entangled components with no velocity
less ether between the 2 moving entangled components results in the components being the components being
closer together. It is only when they are closer together that there is enough ether to push the contracting component away to maintain the shorter distance.
velocity direction \(\qquad\)
of moving components \(\longrightarrow\)


The decreasing small flow of ether between the 2 components in the vertical direction as the components have a larger and larger velocity makes it more difficult for the components to interact with one another. It takes more cycles to create the same interactions resulting in time dilation.

\section*{Supernovae explosions Page 1}

The creation of a neutron star
cross section of newly formed neutron star

the neutron grid begins forming at the center of the collapsing star and spreads outward at a slowing rate. The slowing rate allows neutron grids with different cubic grid direction to form in the outer areas of the neutron star.


Some of the gamma rays formed by the different grids hit the boundaries between the different grids and cause massive explosions. The smaller grids and portions of the large grid are vaporized, blasting out huge numbers of neutrons. These neutrons mix with and push away the stars gas that is falling toward the neutron star surface.

\section*{Supernovae explosions page 2}

Neutrons slide into pockets in neutron star and recrytalize neutron star


The resulting loss of neutrons leaves large pockets in the neutron stars surface and the collapsing of existing grid material into the pockets creates additional gamma rays as the material recrytalizes.

Very large star collapses and new neutron star is destroyed

\section*{temporary neutron star}

the neutron star that forms from a very massive star is more likely to have multiple crytalization directions form near the center of the forming neutron star. The gamma rays created in the different sections will begin vaporizing the area along the boundary and the vaporized area will grow as more gamma rays heat up the neutrons in the vaporized area. The entire neutron star will be vaporized in this process and create a massive supernova.

\section*{Photon emission by rotating neutron stars}

Photon emission by rotating neutron star with internal charge
neutron stars have photons created by charged particles escape a cubic structure of neutrons
 the interior of neutron stars by traveling through the cubic lattice structure made of neutrons. The photons exit this structure as a collimated beam.

spinning neutron star and photon emission

cubic structure orientation of neutrons in neutron star


\section*{Red Shift Page 1}

A component loses mass during each cycle
 of mass.

A small wave of ether continues outward after the component contracts
component fully
\begin{tabular}{c} 
compressed and its \\
size is slightly \\
smaller
\end{tabular}
\begin{tabular}{|c} 
Background \\
Ether \\
Density
\end{tabular}
density diagram
with the loss of the outermost ether the components ether contracts back a little faster, increasing the components expansion and contraction frequency.

The rate of mass lose for components is incredibly slow. The red shift/shrinking mass rate can be seen in distant galaxies.

\section*{Red shift Page 2}

\section*{Photon components shrink over time}
photon wavelength will appear to increase over time as the 2 component pairs shrink. The smaller mass of the components results in weaker interaction between the component pairs.
distance between strongly entangled components shrinks

photon wavelength will appear to increase over time as the 2 component pairs shrink. It is actually the shrinking of all matter in the universe that gives the illusion that the photons are red shifting.

\(\hat{\lambda}\)
oscillation distance for pair of photon components

\section*{There are 3 ways a red shift can occur.}

\section*{Red shift possibility \#1:}

Increase the distance between the component pairs and leave the component frequency and size the same.


\section*{Red shift possibility \#2:}

Leave the distance between the component pairs the same and decrease the size of the components and increase the oscillation rate of the components. The distance between the components in each pair decreases in this case due to less ether to push each other away.


\section*{Red shift possibility \#3:}

There could be a combination of both red shift possibilities 1 and 2, smaller components and distance between component pairs increase.


As the galaxies' black holes, stars, planets and dust loose mass the stars and other matter drift outwards away from the center of the galaxy. This happens because the stars maintain the same velocity but the gravitational pull on them is weaker. The stars inside and outside the dotted circle move to larger orbits by drifting outwards due to less "gravitational" pull by the stars closer to the center of the galaxy.
```

Red shift Page 4
Matter shrinking over time causes the red shift of galaxies
photon wavelengths and hydrogen atom size at different redshifts
observed wavelength is the photon wavelength at the galaxy
redshift = observed wavelength - wavelength on earth
observed wavelength = (redshift + 1) * wavelength on earth
observed wavelength =
galaxy with
redshift 5
galaxy with
redshift 1
(5 + 1) * 121.2nm = 727.2nm
Hydrogen atoms are 727.2/121.2 = 6 times
larger at that time than they are now
observed wavelength =
(1 + 1) * 121.2nm = 242.4nm
Hydrogen atoms are 242.4/121.2 = 2 times
larger at that time than they are now
observed wavelength =
galaxy with
redshift 0.25
earth
the wavelength of a photon emitted
from a hydrogen atom from shell 2
to shell 1 is 121.2nm

```

At red shift 0.25 and 2.9 billion years ago, the entry above shows how much larger the earth and sun were at that time compared to now. As the mass of the sun and earth decreased, the earth slowly increased its orbital distance from the sun due to the decreasing gravitational pull. The earth also receives less sunlight the farther away it becomes and the diameter becomes smaller, reducing the amount of sunlight hitting the earth even more. This has a cooling effect on the earth over time. The components in the atoms maintain the proper distance between each other as they shrink. With less ether in the components, they have a smaller amount to push away the surrounding components. As the components shrink their cycle time becomes shorter and time speeds up.

The Disassociation Page 1
Large neutrons in background ether shrink over time
background ether made of overlapping ocsillating spheres

all of space is made of these shrinking components and their larger harmonics


The center of mass of these components can be considered a universal matrix and a universal reference frame. These components will continue to shrink over time and eventually this process will repeat due to harmonics creating new large neutrons in the background ether.

The Disassociation Page 2
Cosmic microwave background
https://map.gsfc.nasa.gov/media/121238/11c_9yr_mol14096BW.png


\section*{The Disassociation Page 3}

Much existing old matter is swept into central black holes
The new larger protons and electrons fall into the old galaxies with the smaller protons, electrons, and neutrons and the new larger matter will sweep most if not all the old matter into the central black hole of the galaxy. The inward rush of new matter will be deflected by the rotating old matter and much of the new matter will rotate around the black hole in the same direction as the old matter. Drifting galaxies will continue to drift after acquiring the new matter.

Stationary mega size black holes in cosmic voids


The new matter also falls into existing massive black holes in the huge voids between galaxy clusters. These black holes are stationary which allows the new matter to fall directly into the black holes from all directions and prevents galaxies from forming around them. This process is repeated at the beginning of each new cycle of the universe. new matter falling into stationary massive black hole new matter falling into existing galaxies

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