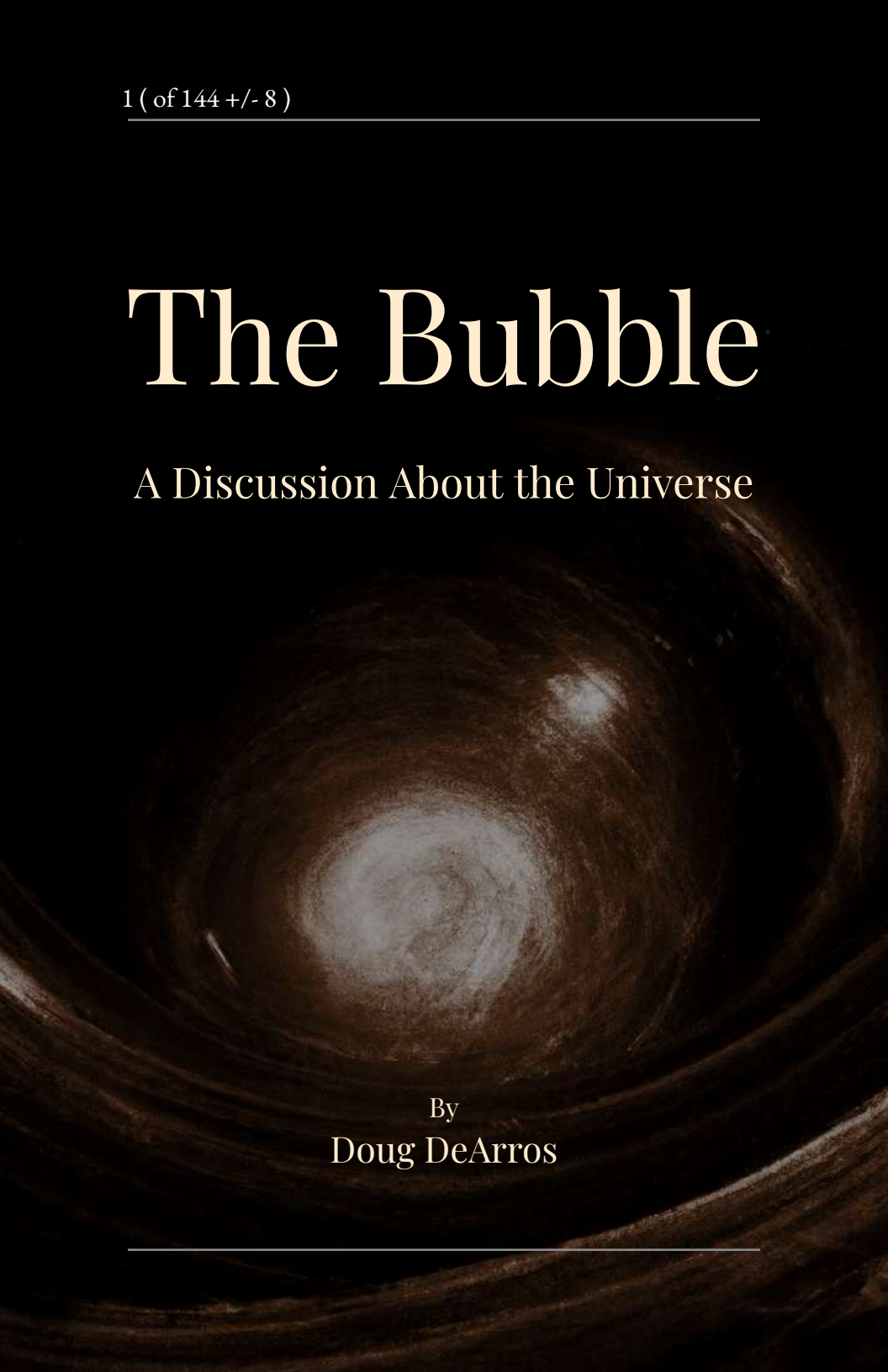
The Bubble

A Discussion About the Universe



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ISBN (Hardback): 978-0-6928265-6-0
ISBN (Paperback): 978-1-7173577-5-5
LCCN: 2018905094

Returns & requests mail to:

General Delivery, DeArros Publishing
Oak Island, NC
28465

To my parents,

Thank you for everything.

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Introduction

Welcome to an exciting exploration that will take you on a journey into the heart of a captivating theory, one that challenges the way we think about our world. At its core lies a groundbreaking idea – the Inside-Out Earth!

In the pages ahead, we invite you to join us on a quest for knowledge, where we seek to answer some of the Universe's most intriguing questions. Why does our current understanding of the cosmos fall short when we examine the very large or the incredibly small? The answer lies in a missing dimension – The speed of light!

This theory offers a fresh perspective, turning the Earth's surface into a concave container of which the Universe is encased. Here, space is not a distant realm but an internal balance between the nature of light and the observed reality.

One of the central ideas challenges the long-held belief that the speed of light is an unchanging constant. Instead, we propose a Universe where light flows gracefully, adapting to the rhythms of space and time. Picture a reality where light doesn't always travel in straight lines, and time doesn't march to the same beat everywhere. It's a concept that defies convention and opens the door to a profound reimagining of our understanding.

Our journey begins on the smallest scale imaginable – a Universe with just a single atom. From there, we venture into a realm of increasing complexity. Along the way, we note patterns and connections that bridge the known and the unknown.

Start from the back to catch a glimpse of our destination, a reality that questions established ideas. Then, work your way back to the front, where each step links our ultimate goal with the hypothesis we're eager to validate.

This book is a testament to the pursuit of knowledge with limited resources. The research within these pages relies on publicly available data, and while our arguments are persuasive, the scientific journey is an ongoing quest. As scientists, we appreciate the need for continuous exploration and experimentation.

Your support as a reader not only benefits this book but also fuels our ongoing search for understanding. A significant portion of the proceeds will be reinvested in exploring the idea that our world may be, quite literally, inside out.

With that, we invite you to embark on this exciting adventure, question the foundations of knowledge, and journey beyond the boundaries of the familiar. We hope you find inspiration, insight, and a sense of wonder within these pages.

Enjoy the voyage ahead.

Chapter 1

The Origin of Matter

Before the beginning of time, there was nothing.

Nothing is like a smooth planet with no hills or ocean; just the soft soil under your feet.

Suppose you were on this planet all by yourself and you started digging with unlimited time and energy.

Once you've dug up half the planet, however, you would not have anywhere to put the dirt except by filling in the holes you already dug up.

Even if you could continue digging until every shovel of dirt had been moved, it would look like you didn't dig anything at all. This is because whenever piles and holes are in the same place they cancel out and leave nothing behind.

That is,

"A pile plus a hole equals nothing"

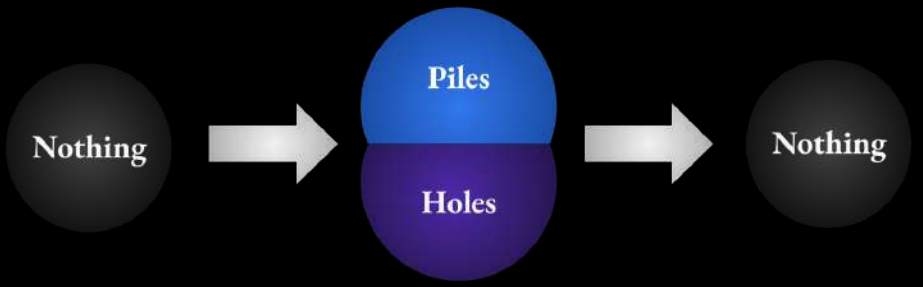


Fig 1.1

Let's relate this analogy to a mathematical equation; setting the piles equal to "positive one" and the holes equal to "negative one."

$$1 + (-1) = \textit{Nothing}$$

Since neither can exist while they're on the same side of the equation (in the same place) we can say that:

one *plus* ***negative one*** *equals zero*

Up to this point everything should be common sense, but now we're going to take a turn into the *imaginary* realm.

If we want the piles to exist without the holes canceling them out then we need to break down the negative component (the holes/negative one) into its square roots.

Unlike a positive number, a negative number doesn't have a normal square root. This is because there isn't any real number you can multiply by itself to make a negative number

(since a negative times a negative equals a positive), so its roots are said to be **complex**; which just means it has imaginary parts.

The **imaginary number, *i***

"A complex number; equal to the square root of negative one."

Therefore, **-1** is said to be the product of squaring the imaginary number.

That is,

$$-1 = i \times i = i^2$$

Now, our "piles and holes" equation becomes:

$$1 + i^2 = 0$$

With that, we can describe the nature of **matter** and **antimatter** with our analogy of **piles** and **holes** or **1** and **-1**.

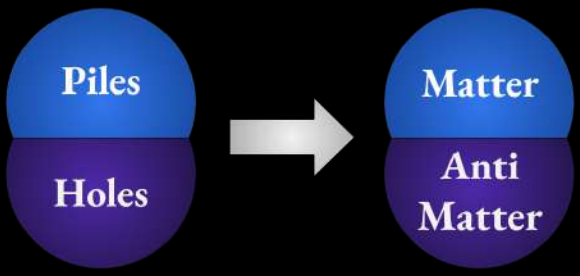


Figure 1.2

Since **antimatter** is the product of two opposite and imaginary things existing in the same place, then by separating the two imaginary components, the two can co-exist.

In terms of our analogy we can fill in the **holes** with **imaginary dirt** while keeping the **opposite of imaginary dirt** far away.

But how?

To explain this, we're going to make an assumption and then test it later to see if we're right.

Assume that at the moment of creation, some **entity** physically separated the two imaginary particles *like a spring* between them with the particles attached at either end. Also assume that this entity remains between the two particles; enabling them to exist forever.

This magical spring has been historically referred to as the **aether** due to it also being the medium which light travels through (but we'll talk more about that later in the book).

For now, all we need to know is that this spring of aether is responsible for the creation of the two imaginary particles.

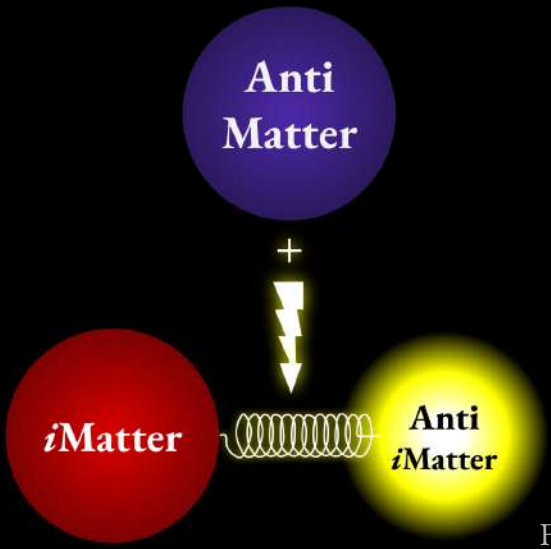


Figure 1.3

If the spring were to disappear then the two particles would *charge* towards each other; recombing into antimatter. Because of this behavior we say that these particles are **charged**.

The **charged imaginary matter** and **charged opposite of imaginary matter** are oppositely charged because they are on opposite ends of the spring.

Therefore if we consider one to be **positively charged matter** then we must consider the other to be **negatively charged matter**. These subatomic particles are commonly referred to as:

Protons and Electrons

Since the original **piles of matter** in our analogy have **no charge**, they are **neutral**, so we call them:

Neutrons

The following diagram summarizes everything we have discussed so far:

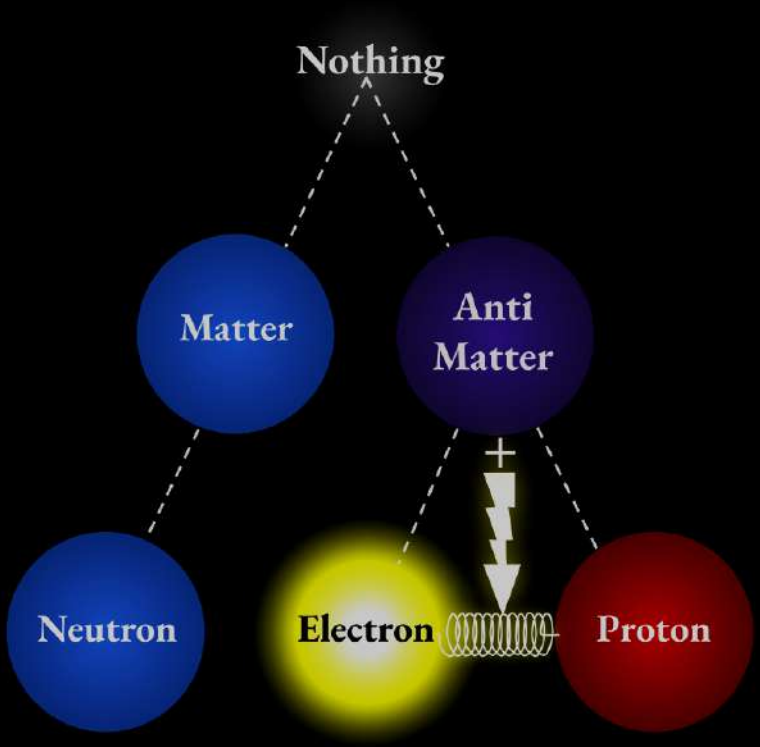
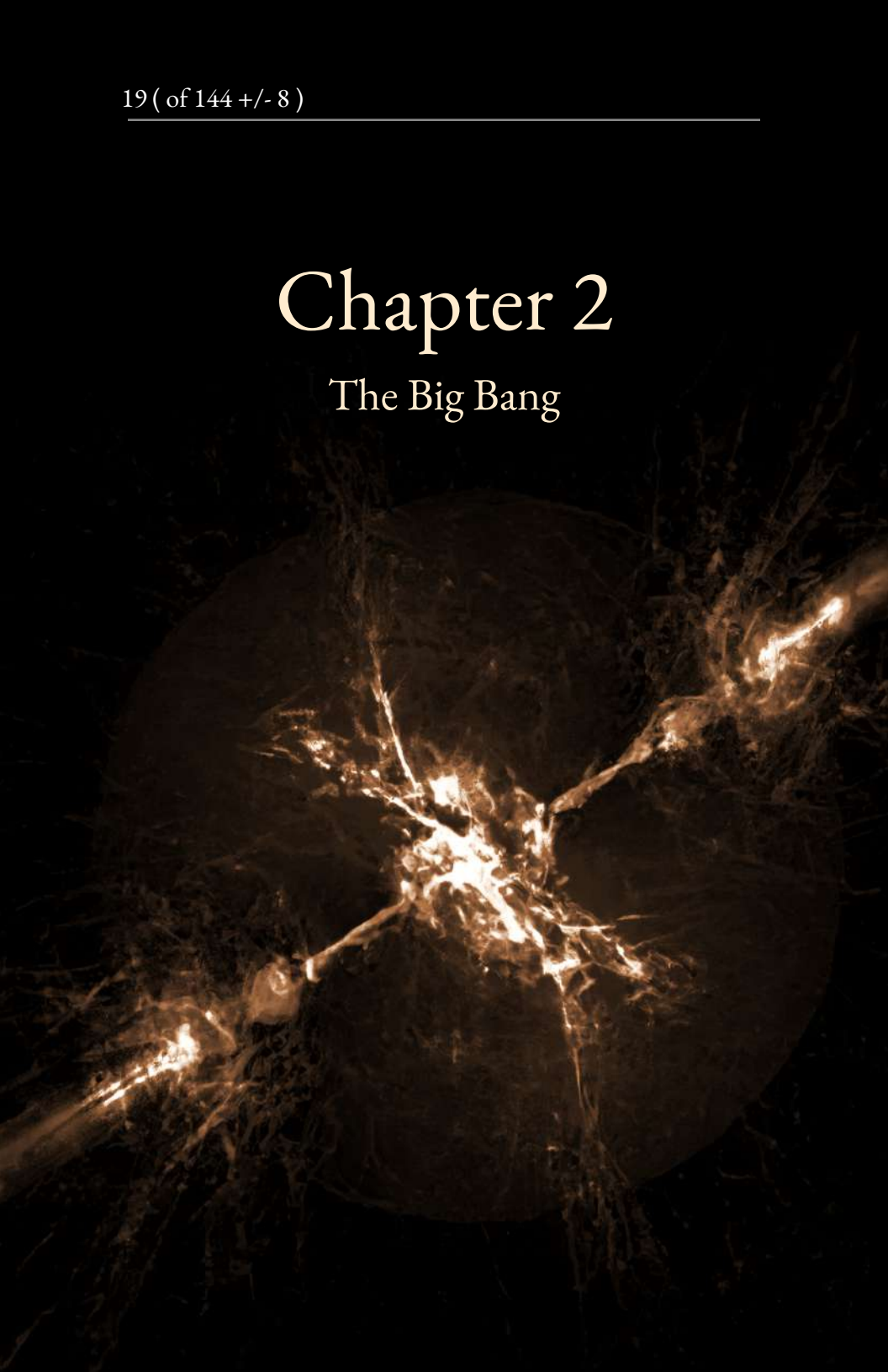


Figure 1.4

Chapter 2

The Big Bang



In this chapter we will be discussing the forces involved during the first moments of time, commonly referred to as:

The “Big Bang”

Imagine a Universe with only 4 sets of particles. That is; 4 protons, 4 neutrons, and 4 electrons made possible by 4 springs of aether, as shown below:

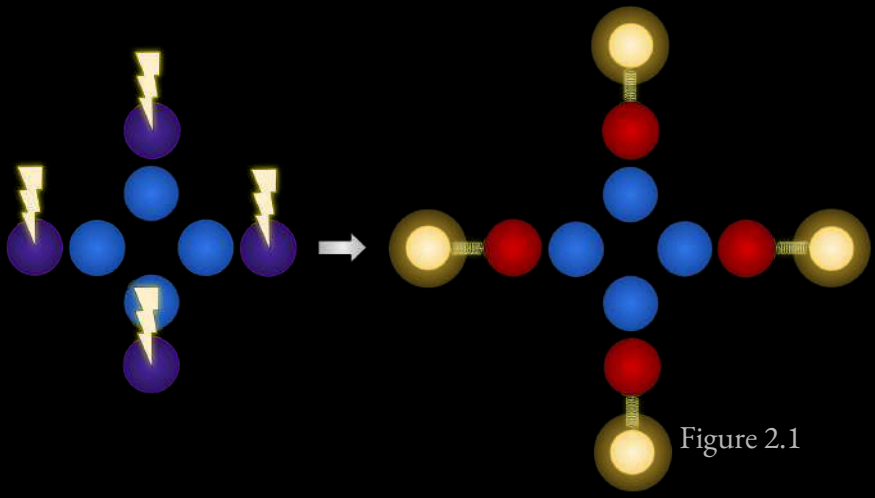


Figure 2.1

The figure on the next page shows an example of how these charged particles exert forces on each other.

The **dotted line arrows** represent repulsive forces; which push like-charged particles away from each other.

The **solid line arrows** represent attractive forces; which pull oppositely-charged particles together.

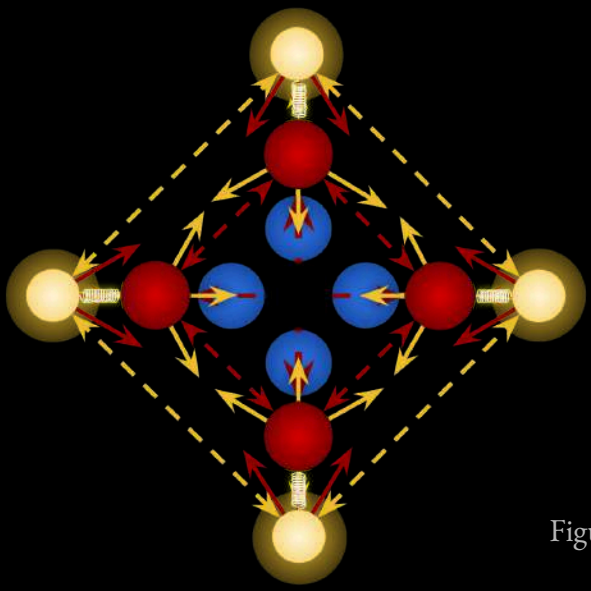


Figure 2.2

As you can see, there are three magnetic forces pushing each particle, three pulling each particle, and one variable force from the spring of aether, depending on the distance between them.

Since the aether acts like a spring, the force between the sibling particles should be:

1. Repulsive when they're close together:

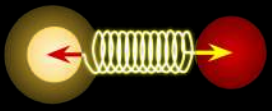


Figure 2.3

2. Attractive when they're far apart:

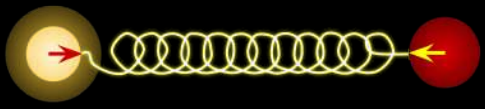


Figure 2.4

Since there was no space between the **proton** and **electron** before the **aether** was introduced the spring must have been fully compressed in order to be introduced to the **anti-matter**.

Therefore, immediately after the moment of creation, all of the potential energy within the spring was released in an explosive manner. This event is what we call the Big Bang, and it marks the start of our Universe.

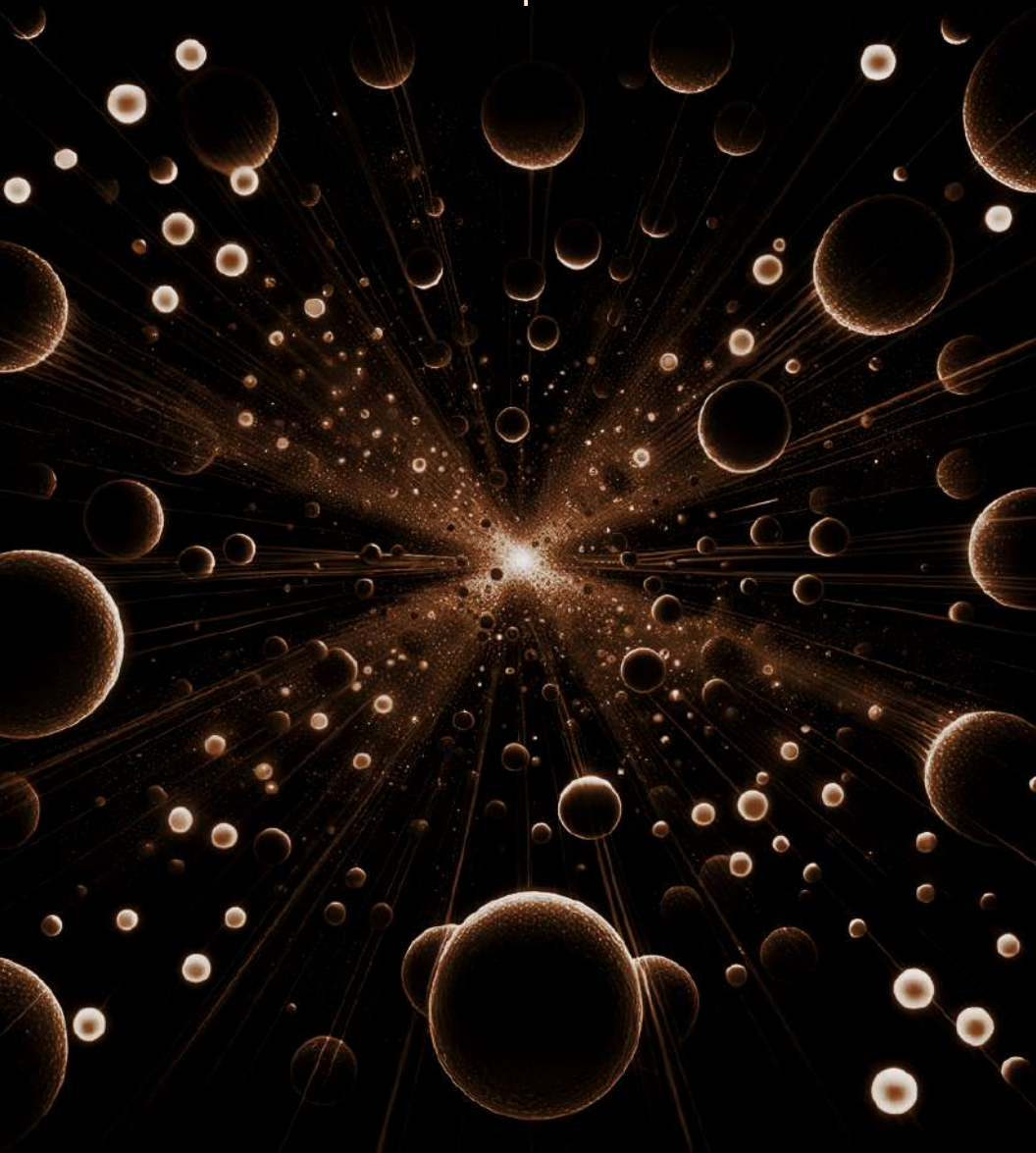
After this huge explosion, things don't just stop. The aether, which helped push the particles apart, still plays a big role. It keeps working on the scattered particles, setting up for some interesting changes.

As we move into Chapter 3, we'll see what happens after the Big Bang.

It's not just a random scattering of particles. Instead, something more orderly starts to take shape.

Chapter 3

The Implosion



After the initial explosion, two shells of matter emerge, moving rapidly away from the center. The outermost shell consists of **electrons,** while the innermost shell is made up of **protons**.

These shells are magnetically attracted to each other.

Additionally, as the charged particles spread out, away from the center, the spring force that initially pushes the shells apart weakens and then starts to pull everything back together.

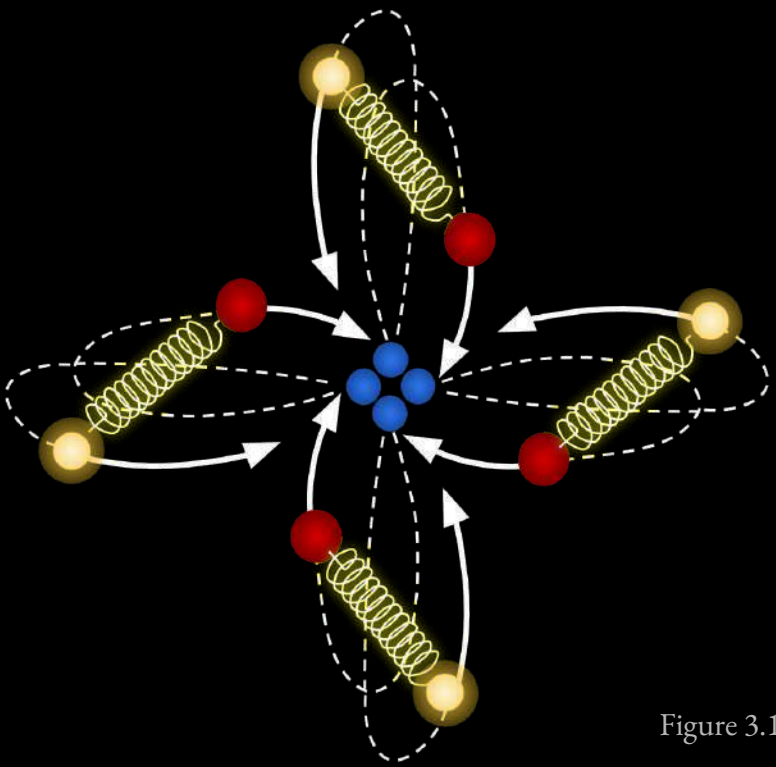


Figure 3.1

Therefore, we can visualize that just after the Big Bang, there is...

The "Big" Implosion

At the time of the implosion many of the springs become entangled; causing particles to become bundled together:

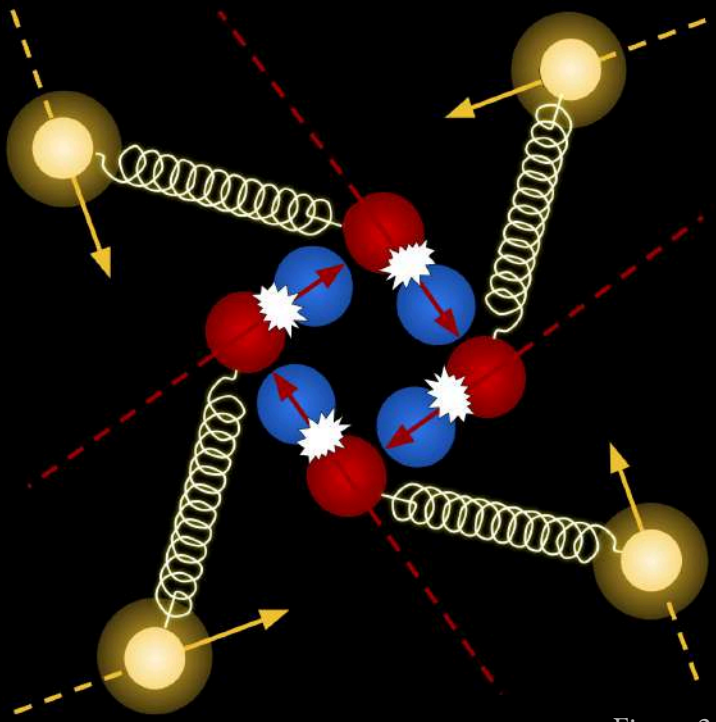


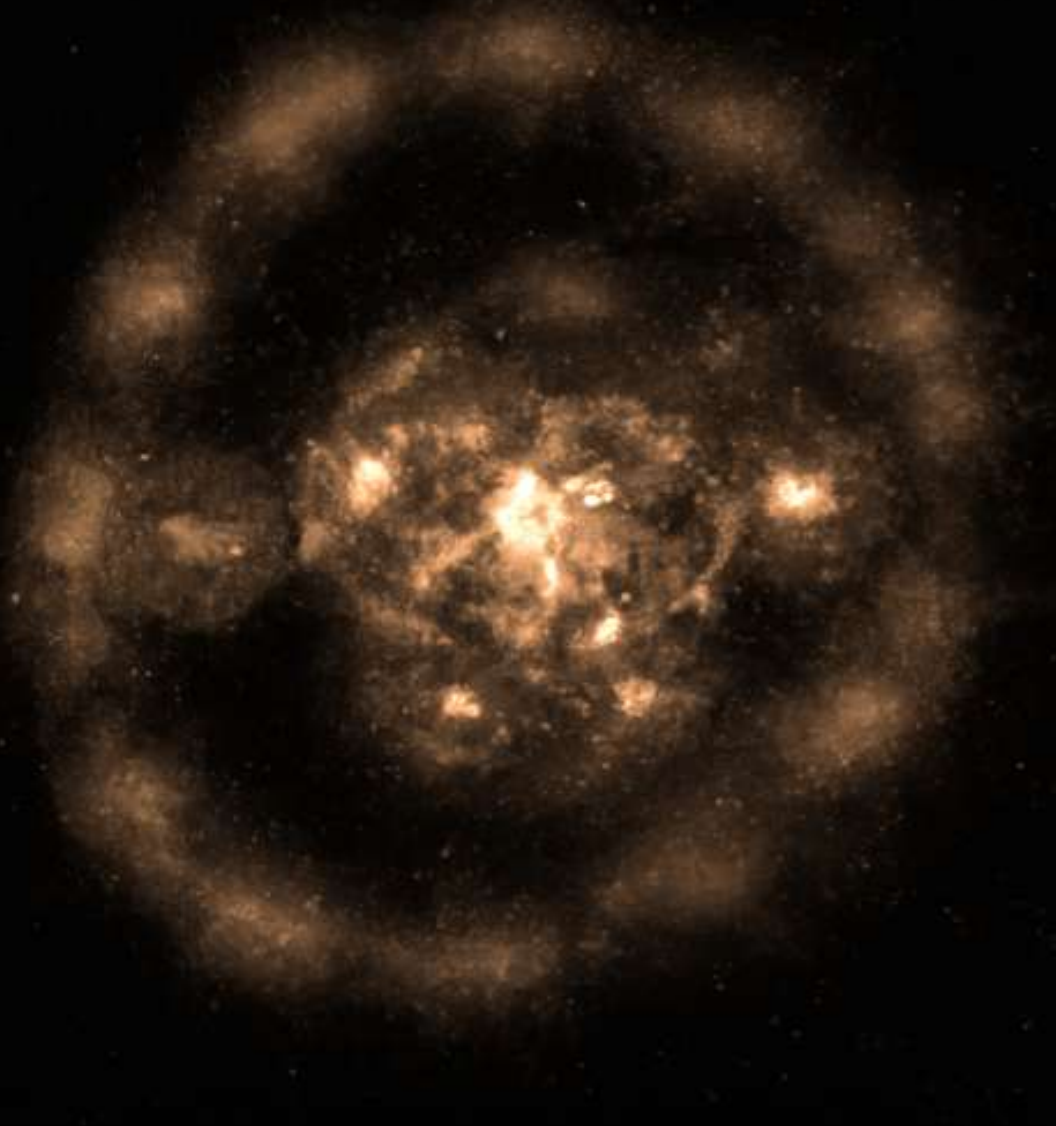
Figure 3.2

As the Universe begins to spin, and as particles push themselves apart, the protons closest to the edge free themselves easily whereas the ones closer to the center take longer to become untangled.

In the next chapter, we'll see how the springs of aether allow the protons to drag the electrons along with them as they are flung away from the center.

Chapter 4

The Spinning Universe



Entropy

"A scientific term that describes how things naturally tend to become mixed up."

In our tiny Universe, the first effect of entropy is determining the direction of spin for protons and electrons.

The following diagram shows that when an electron moves it gets closer to neighboring electrons and they all start to move in the same direction around the center.

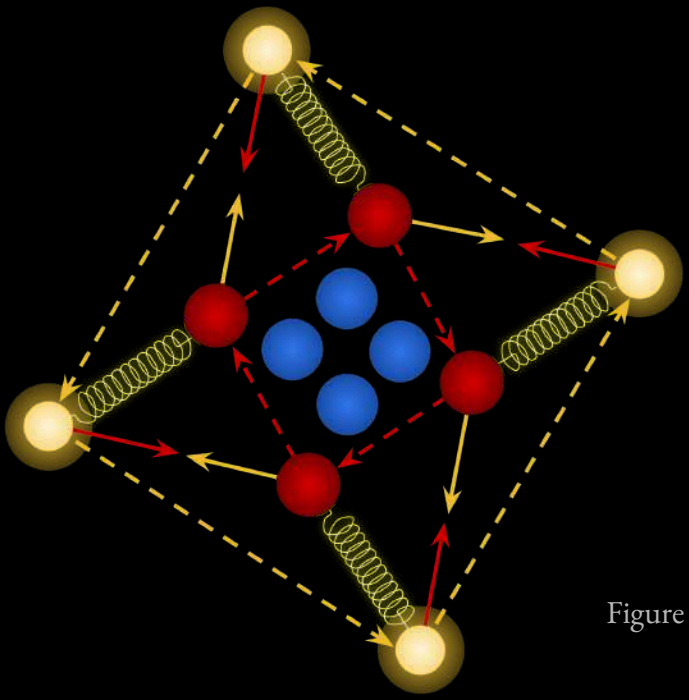


Figure 4.1

The same goes for the protons, except that they travel in the opposite direction due to their attraction to the electrons all around them.

The next chapter will challenge every atomic model that has been proposed over the last 215 years; as shown below:

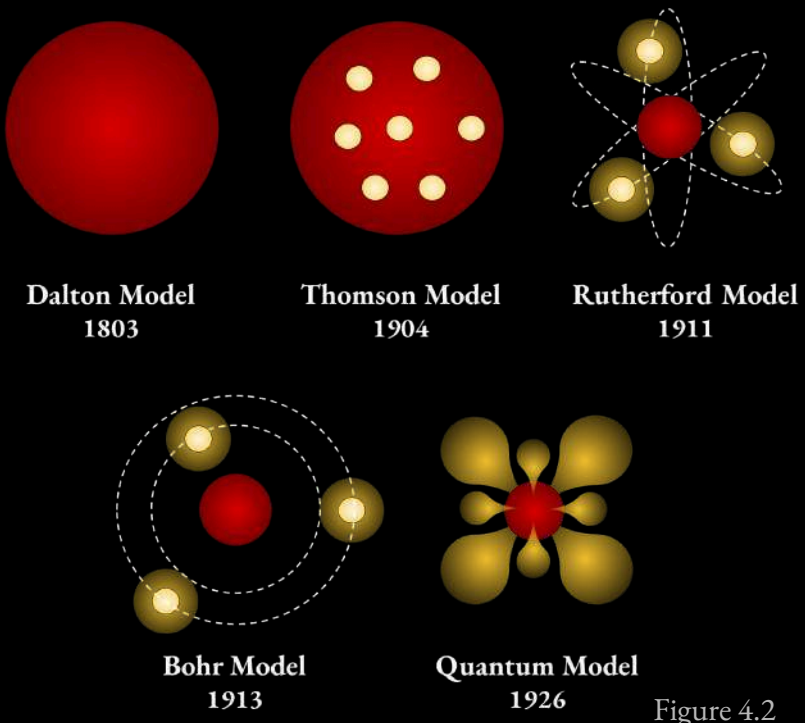
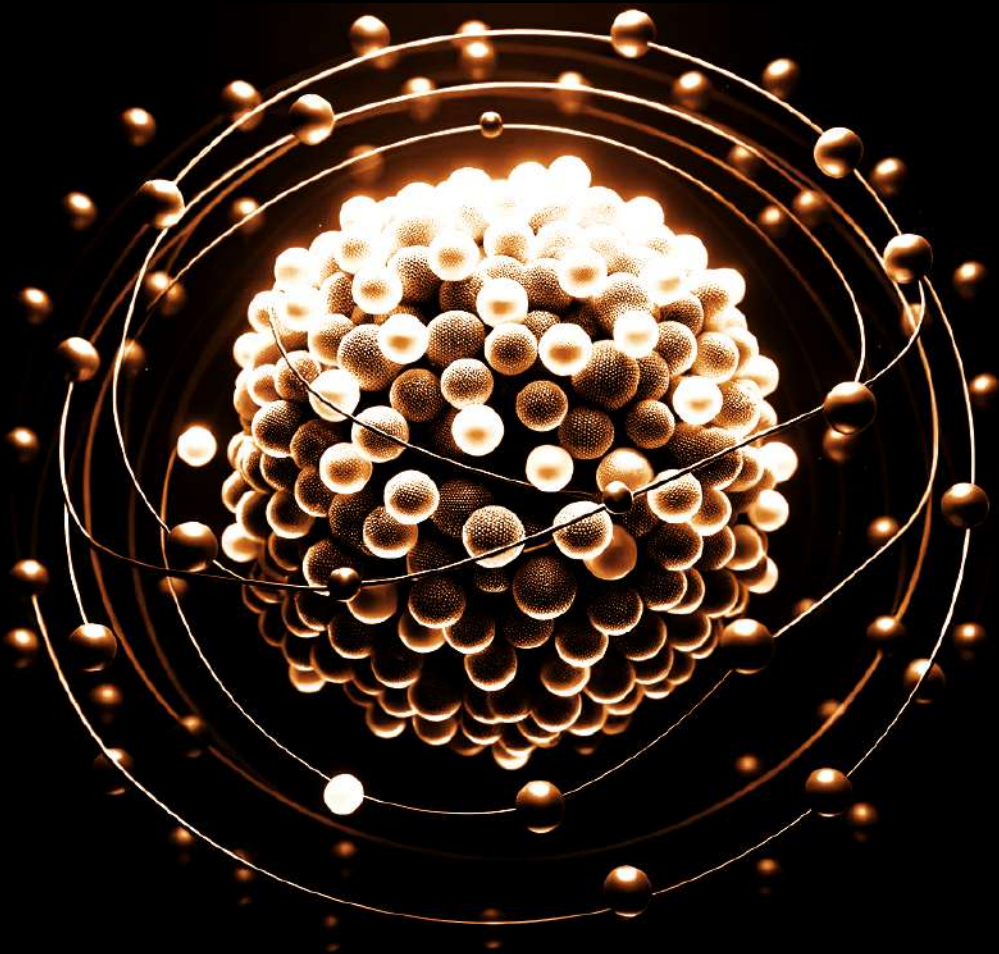


Figure 4.2

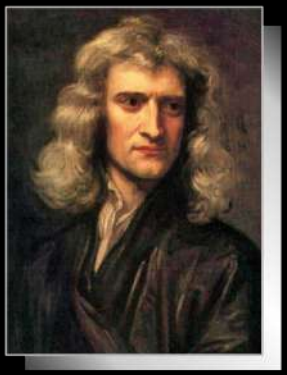
Our model is about to show that the electrons reside in the center and that all of the protons in the Universe go around the center; much like the Bohr model, but inside out!

Chapter 5

The New Atomic Model



What we're going to explore next is quite surprising. But before we get into that, we need to grasp some fundamental concepts of physics.



Sir Isaac Newton

Commonly known as the father of physics. His simple rules help us understand how forces act on objects in various scenarios.

Newton's first law

States that an object traveling in a straight line will continue to travel in a straight line unless something causes that object to change direction. In other words:

"An object in motion stays in motion"

Additionally, if you were an object in motion, traveling in a straight line, you would feel as if you weren't moving at all! This concept was expanded on by Albert Einstein but we'll come back to that later.

For now, you just need to imagine that you are an object going around in circles (not a straight line). In that case, you would feel a force pushing you away from the center. This is called...

Centrifugal Force

"A force that appears to push outward on an object that is moving in a circle "

It's the same force you feel when inside of a **moving** vehicle that **turns a corner**. The **force of the car turning** is equal and opposite to the force that you feel.

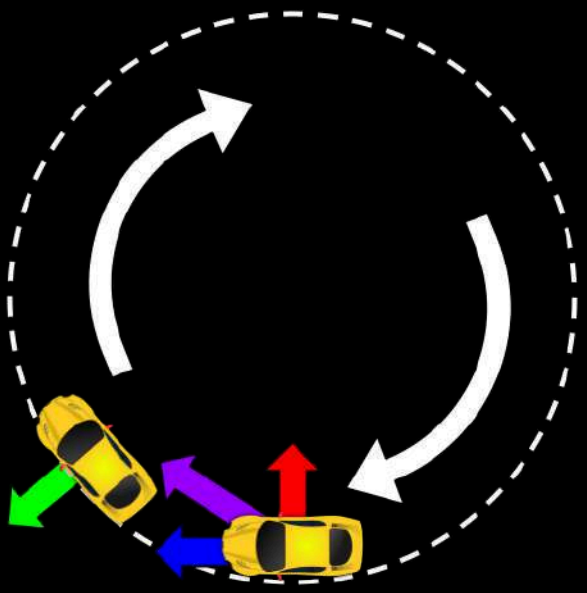


Figure 5.1

It's also the same force that forces massive particles (protons and neutrons) away from the center of the Universe (shown on the next page).

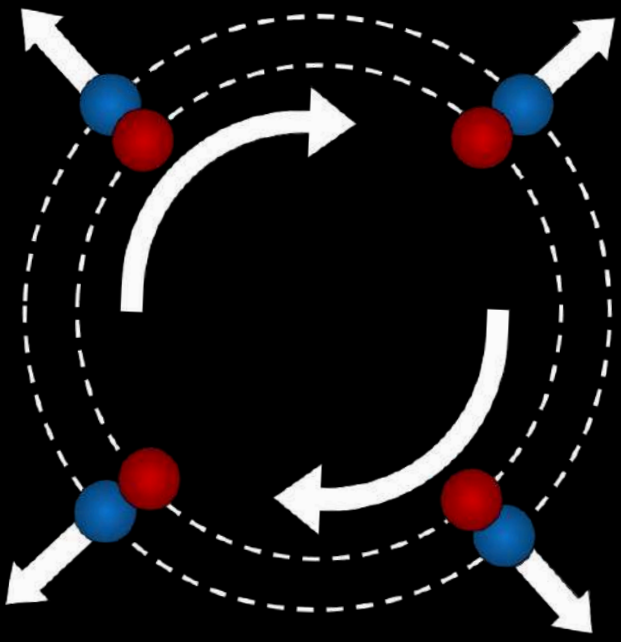


Figure 5.2

It would seem that these massive particles (also known as nuclei) would be flung off into the abyss; but that doesn't happen.

Why?

Because the springs of aether and the electron on the other end keep everything together. Since the spring connects every proton to an electron, then as the proton moves away from the center, it pulls the electron with it.

However, since the electrons are magnetically attracted to all the other protons, they tend to stay in the middle (because that's the average location of all the positive charges) and pull back.

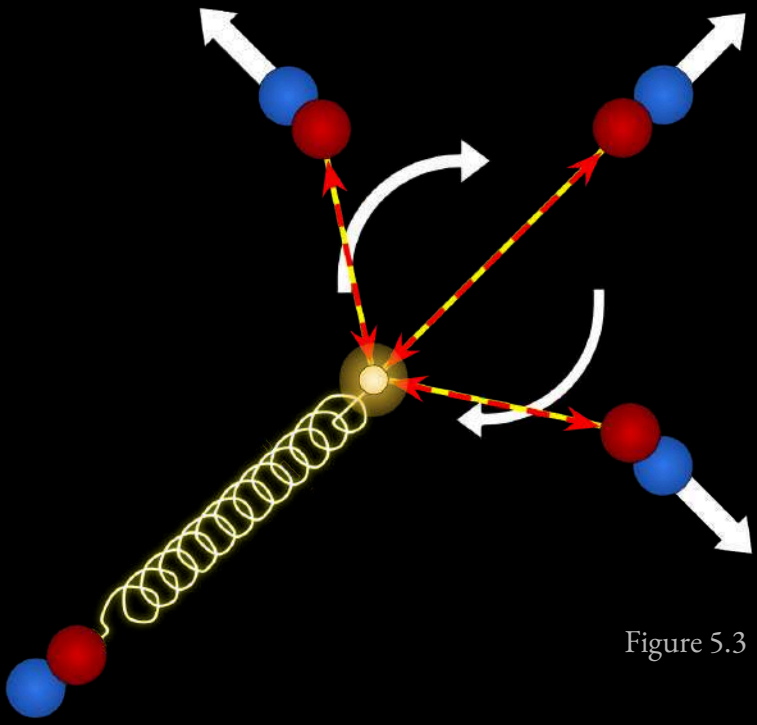


Figure 5.3

This keeps everything in balance and prevents particles from being flung off into space.

We can now see that centrifugal forces from a spinning Universe act on the various nuclei, forcing them to go to the outside edge while the aether keeps the electrons close to the center.

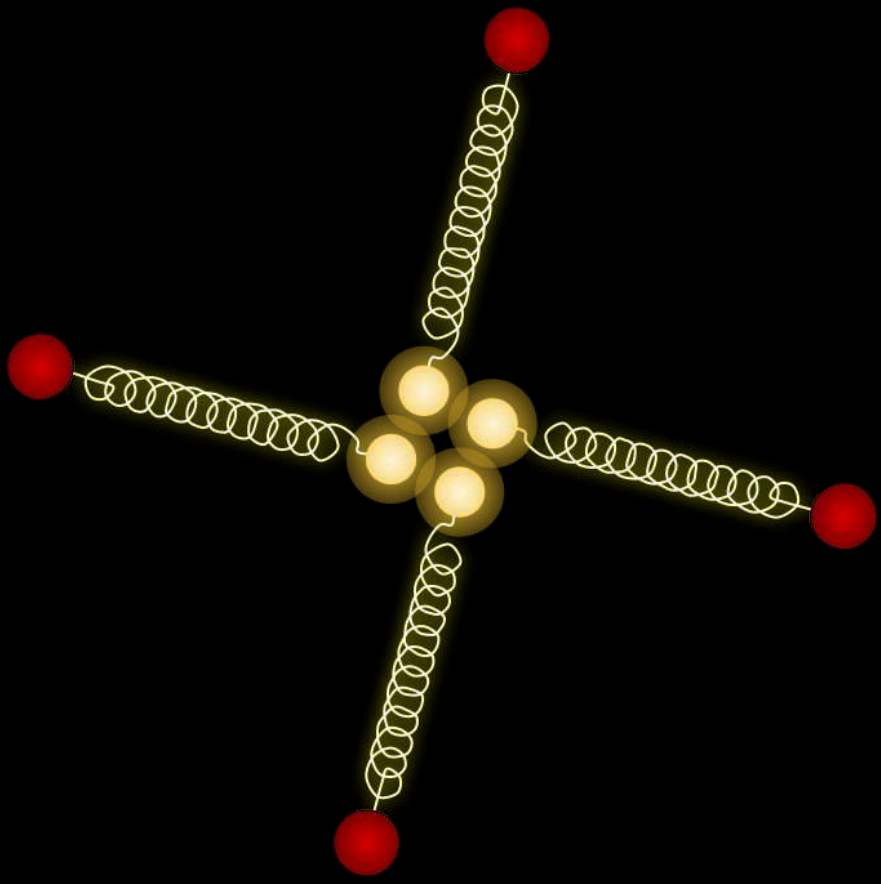
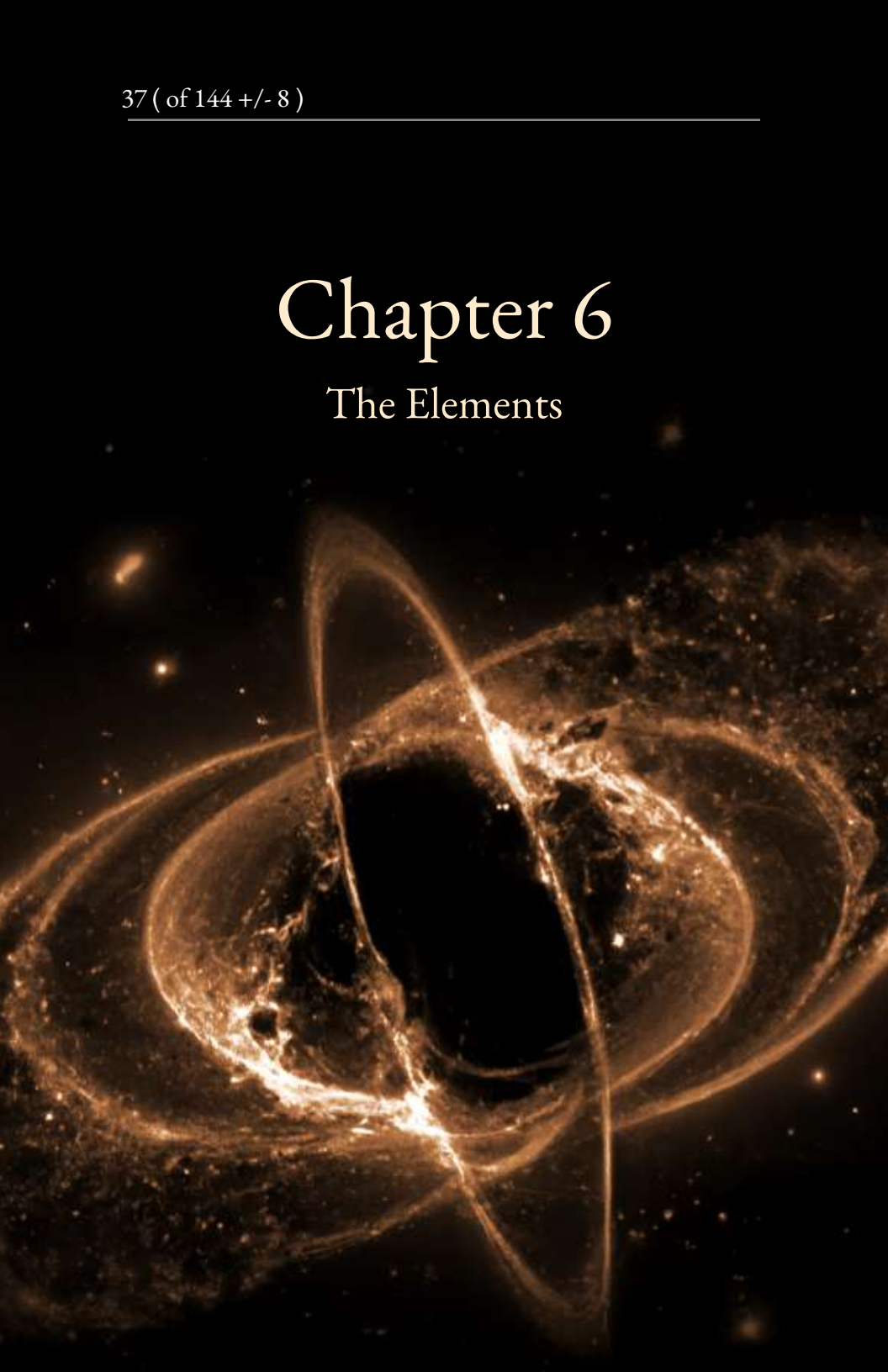


Figure 5.4

In other words, the new atomic model is just like the old one, but inside out!

Chapter 6

The Elements



Consider a Universe with more than just 4 sets of particles. With more particles, there would be a wider variety of elements. For simplicity, the only elements we'll consider in this chapter will be hydrogen and helium.

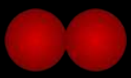
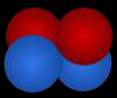
Name	Image	PM Ratio
hydrogen		**100% protons**
Diatomic hydrogen		**100% protons**
helium		**50% protons**

Table 6.1

Each element has a unique:

Proton to Mass (PM) Ratio

The percentage of particles in the nuclei that are protons.

The PM ratio determines how far away from the center a particle will find its **equilibrium**; as shown in the diagram on the next page.

Only protons can contribute to the positively oriented mass. Since neutrons have no charge, the higher the percentage of neutrons an element has in its nuclei, the more dead weight it has.

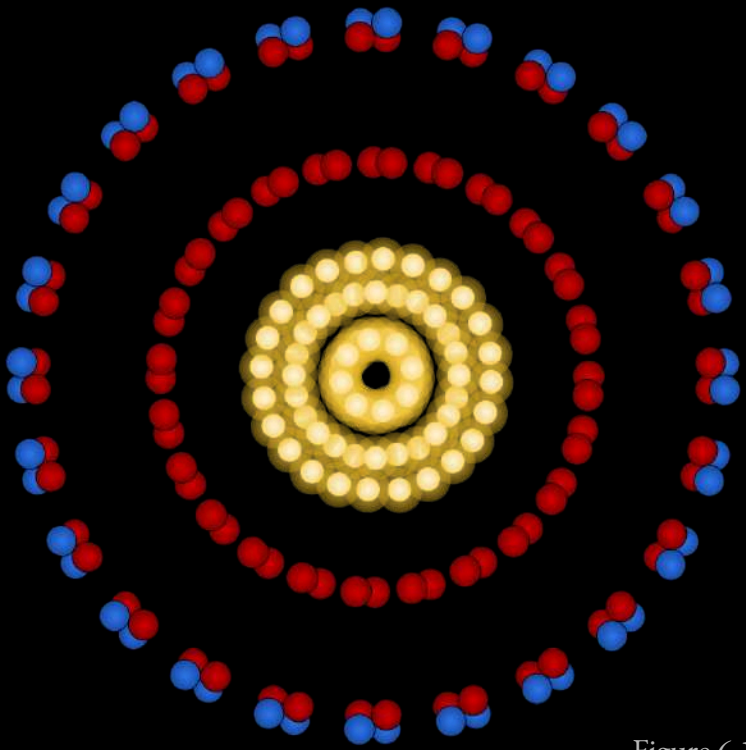


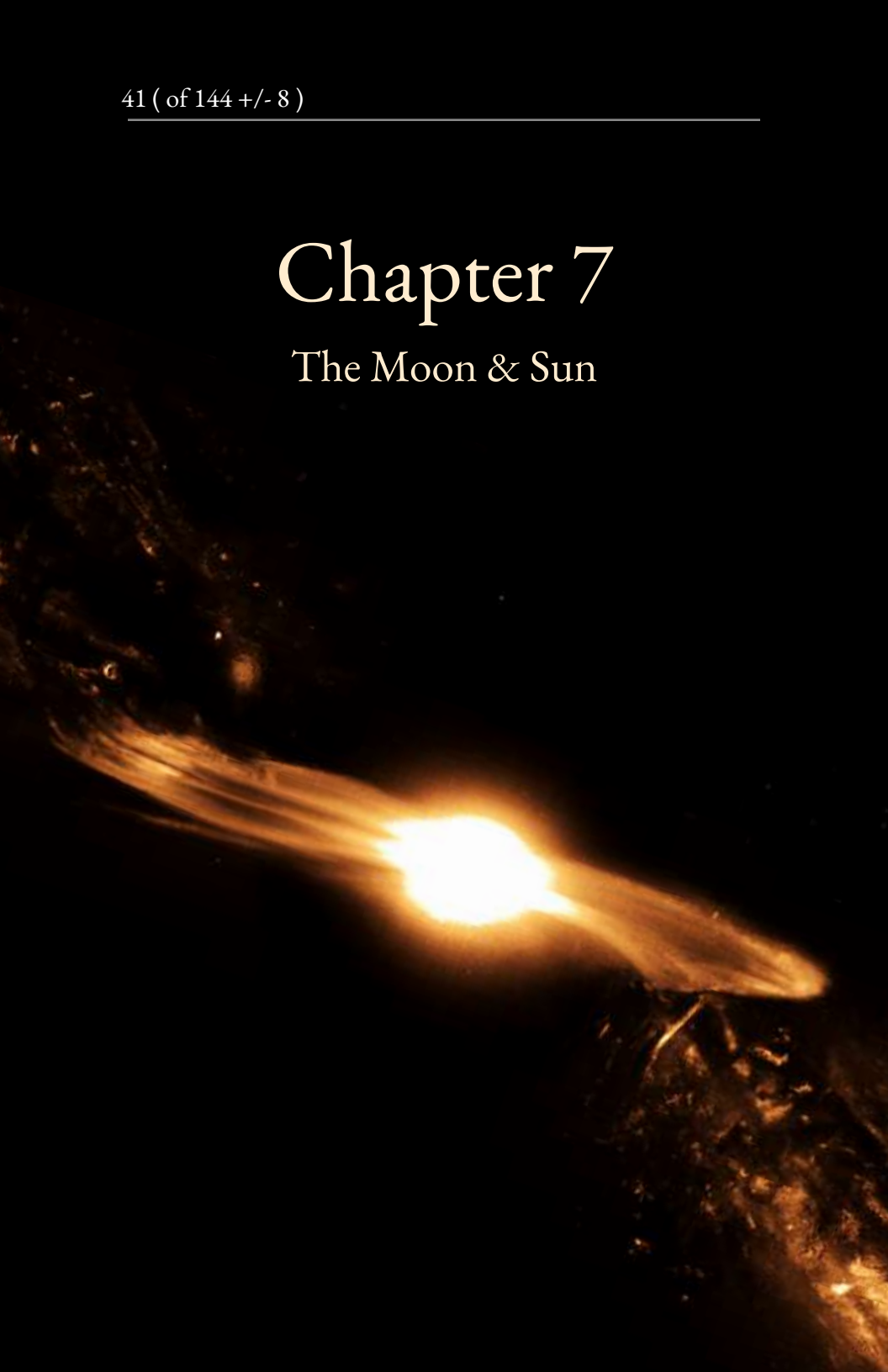
Figure 6.1

We can also say that the PM ratio determines the distance between the center of the Universe and each radii.

As we consider a Universe with even more particles we will see a greater variety of elements tend to organize according to their PM ratio.

Chapter 7

The Moon & Sun



In this chapter, we will consider the existence of an **isotope** of helium, namely helium-5, which has 2 protons and 3 neutrons in its nucleus; therefore a PM ratio of 40%.

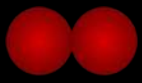
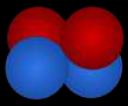
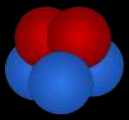
Diatomic hydrogen	**helium-4**	**helium-5**
		
100%	**50%**	**40%**

Table 7.1

With an abundance of atoms in this spinning Universe, all of the helium-5 atoms will create a shell around the outside edge. Since this shell is made of protons, it emits a positively charged field that pushes inward on all the other protons within the shell, causing the inner bubbles to collapse into a solid sphere.

The solid sphere will be made of a mixture of elements. The elements with the higher PM ratio will accumulate on one side and face towards the center.

The elements with the lowest PM ratio will likely be found on the side that faces out.

These principals will be shown in the diagram on the next page.

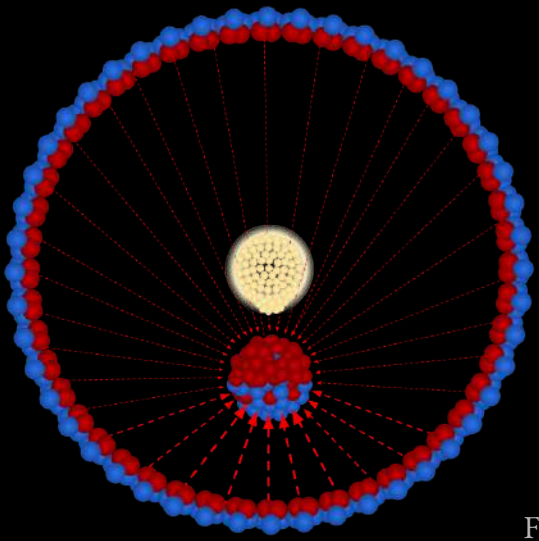


Figure 7.1

If there are enough protons in this sphere, then it can pull out a bundle of electrons, the Sun, out from the center.

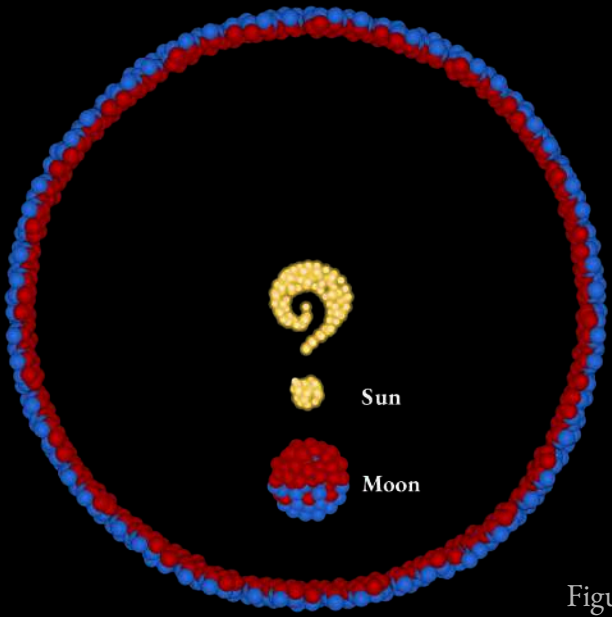
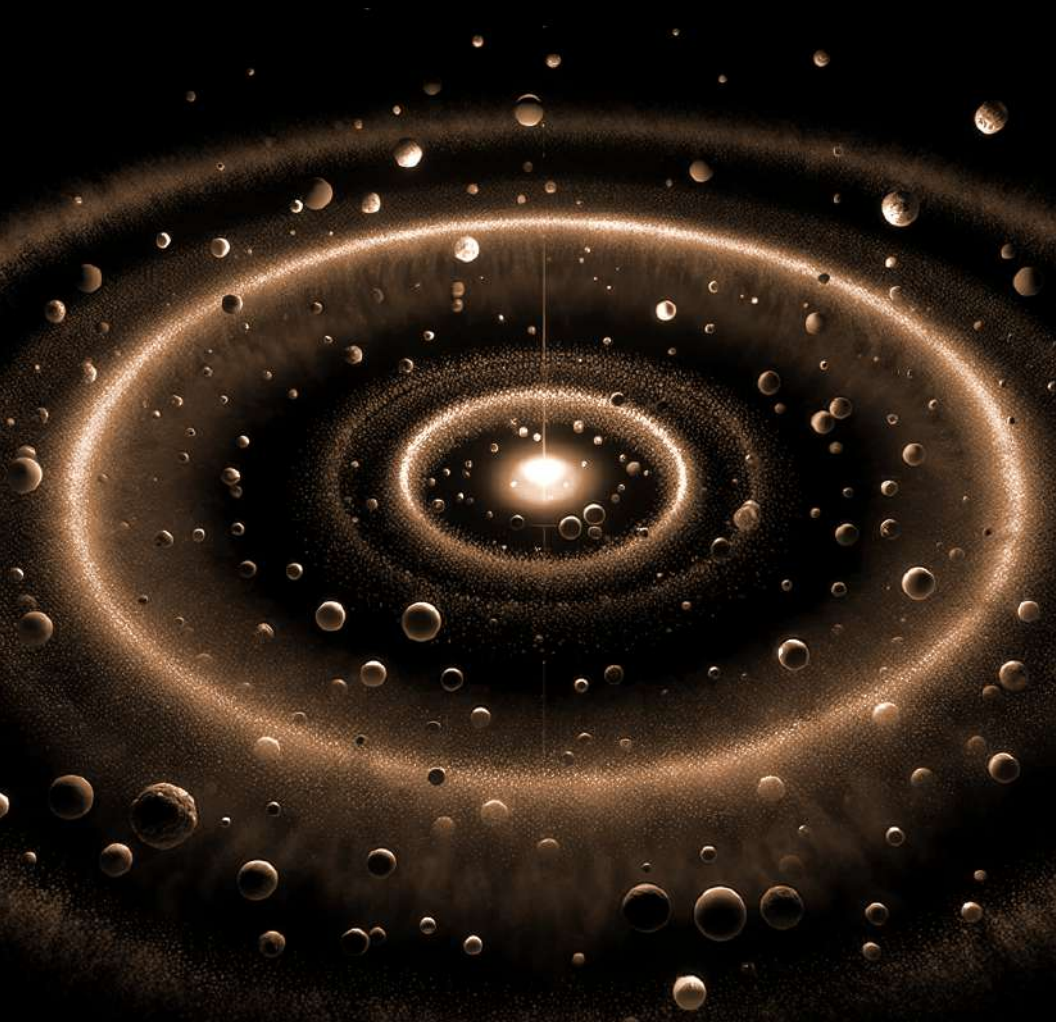


Figure 7.2

Chapter 8

The Planets



The **atomic number** of an element represents the number of protons in each nuclei. The atomic number of hydrogen is 1 because hydrogen has 1 proton in its nucleus. Hydrogen is the only element with no neutrons, so its **atomic mass** is the same as its atomic number. Helium has an atomic number of 2 because it has two protons as well as 2 neutrons; so, it has an atomic mass of 4.

An important trend to notice is that:

"The greater the atomic number is, the lower the PM ratio tends to be."

The more protons there are in a single nucleus, the more they want to push themselves apart. Therefore extra neutrons are present to help stabilize large nuclei. Elements with the highest PM ratios have enough magnetic attraction to the electrons in the center to be commonly found in suspension close to the center.

As you get further away from the center you will tend to find elements with higher PM ratios. Consider a Universe with a second **celestial body** besides the Moon. Let's assume that this new sphere will be made of nothing but hydrogen.

To determine the PM ratio of the Moon, we can do a quick internet search asking what elements are known to be found on the Moon.

By dividing each of these elements' atomic number by their atomic mass, we can determine that each of the ratios will be just *under* 50%. That makes sense since almost every element is between 40% - 50%.

Recall that hydrogen is the only element made up of 100% protons; so its PM ratio is at least double that of any other element.

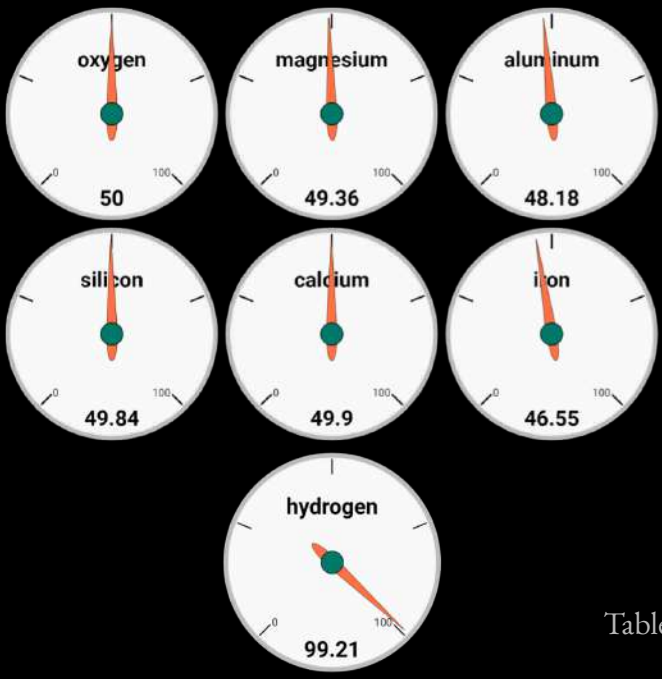


Table 8.1

Since both the center of the Universe and the Sun are negatively charged (being composed entirely on electrons), the hydrogen planet will find its equilibrium roughly between the Sun and the center of the Universe As shown in the diagram on the next page.

The planets that orbit the Sun must be greater than 50% and less than 100%. We can test this claim by researching what the known Planets are made of.

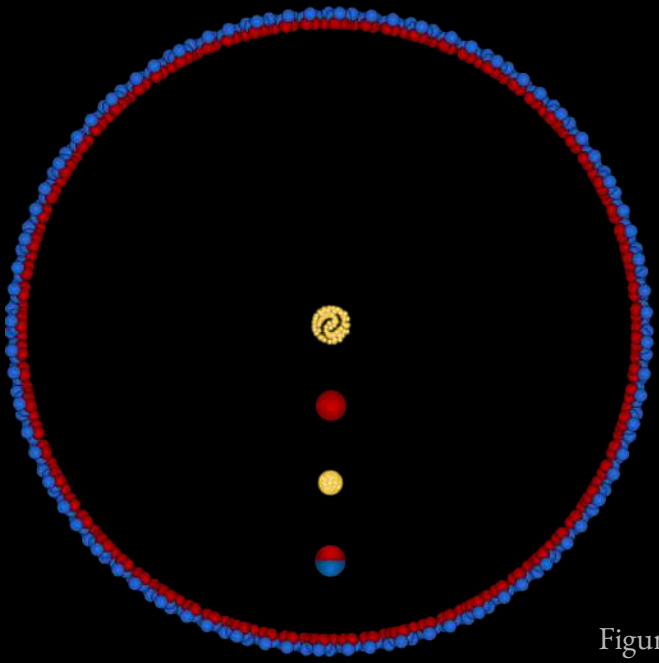


Figure 8.1

A method of determining what each planet is made of is called **spectrography**. Every element absorbs light in a unique way. If we take the light from a planet and diffract it through a prism then some of the colors will be missing; a sort of fingerprint unique to each element.

The exact reason is beyond the scope of this text. For now it will suffice to know that each element absorbs a unique selection of colors, as shown on the next page.

This is hydrogen through a spectrograph:

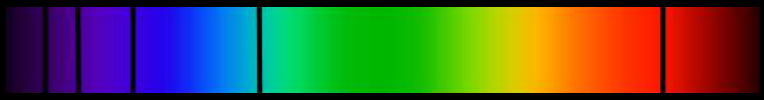


Figure 8.2

Through this method we can determine what elements are on the surface of each planet; which can give us a good idea of which elements would make up the entire planet.

We already determined that the Moon is slightly less than 50%. It turns out that Venus and Mars have a blend of elements that make them almost exactly 50% protons. Even more interestingly; Mercury has so much hydrogen that it's 60%! That should explain why Mercury is the closest to the Sun.

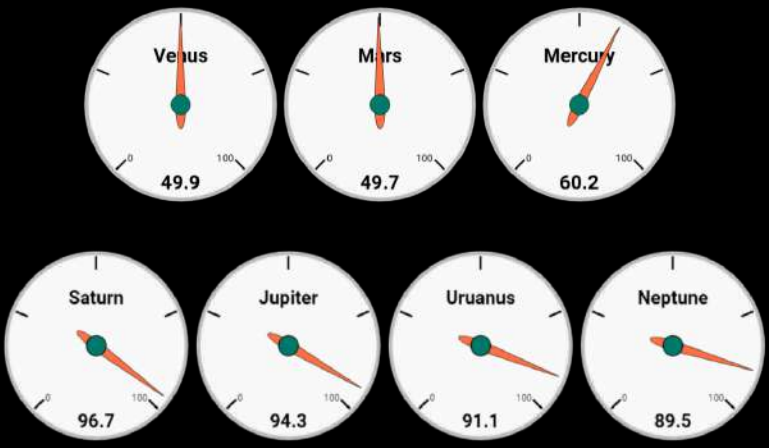


Table 8.2

Since the gas planets should be mostly hydrogen then it makes since it turns out they have PM ratios that range between 89 and 98.

In the old model the solid planets are referred to as the Inner planets because they are closer to the Sun than Earth is. In our model, this translated to "the solid/inner planets remain in a close proximity to the Sun. Note that in our model the Sun orbits the center. So while the Sun orbits the center, the solid planets are doing a loop de loop as they move through space. This apparent stop-and-go behavior is a phenomenon called **retrograde motion**.

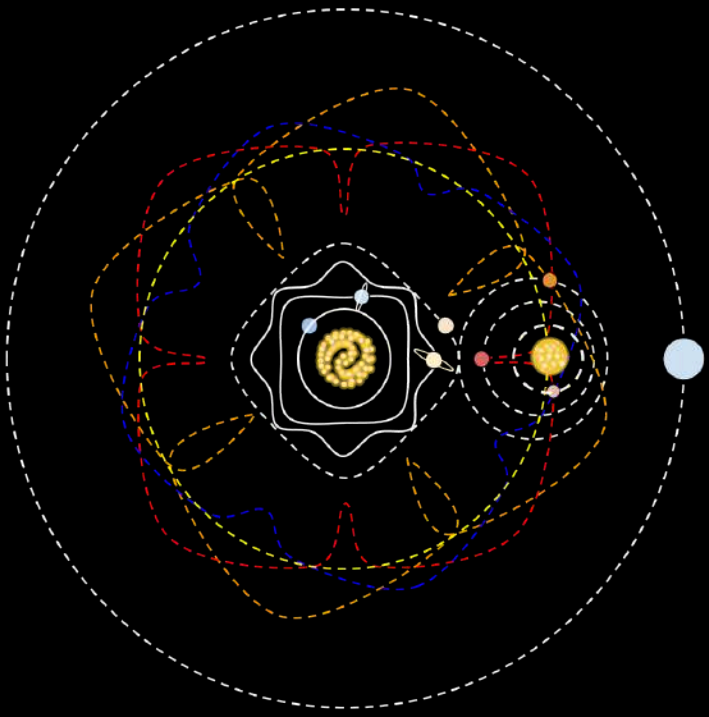
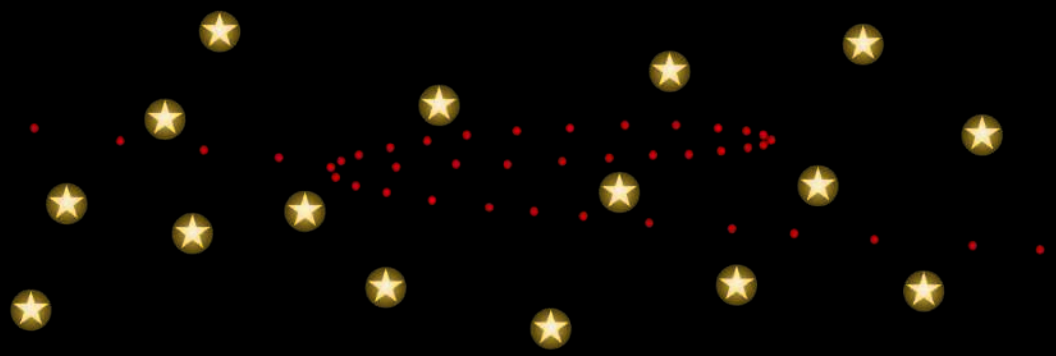


Figure 8.3

On the next page there is a time lapse of the location Mars compared to the stars in the background taken at the same time of night over a span of several weeks.



In order to understand retrograde motion in the current model, you must be able to visualize the motion of planets while you yourself are also in motion

In our model it's easy to see what's happening; the planets are actually making loop-de-loops throughout the sky due to their orbit around the Sun as the Sun goes around the center.

In the next chapter we will be introducing the largest object in (our model of) the Universe.

Chapter 9

The Earth

Below is a summary of everything we've discussed so far about our model with some additional information (in parentheses) to help fill in the gaps.

1. At the center of the Universe is a single point in space where the speed of light is zero.

2. Surrounding the center is an untold number of electrons (also known as stars). Many of which are swirling around in the form of galaxies.

3. The hydrogen planets orbit the center of the Universe.

4. The Sun orbits the center of the Universe further away than the hydrogen planets or any other electron does.

5. The solid planets (which are between 50 and 60 PM ratio) orbit the Sun.

6. The Moon is the largest and farthest celestial body from the center; it has the lowest PM ratio of all the celestial bodies: slightly less than 50%.

7. And finally, the Earth is the outside edge!

In our model, the Earth is a shell that encases the entire Cosmos*; making it the biggest thing in the Universe!

Its surface is **concave** (which means it curves *up*) like the *inside* of a ball, whereas the planets are **convex,** being solid spheres suspended within the Earth.. If this were true, shouldn't we be able to look up and see the other side?

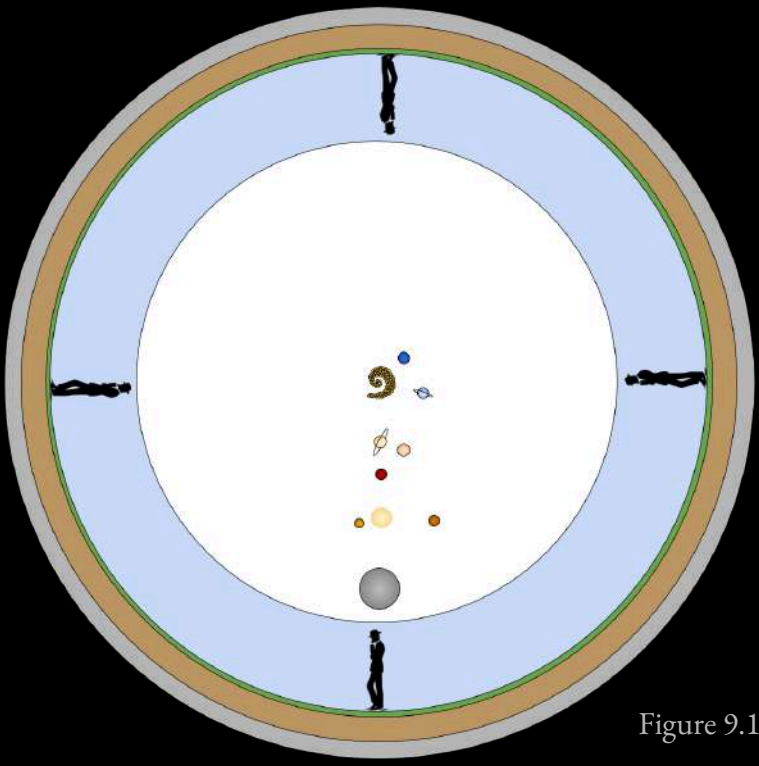


Figure 9.1

If light traveled straight, yes, but we've got evidence that says light does not travel straight!

The currently accepted models try to describe space using just **3** dimensions; which are depth, width, and height; referred to as **x**, **y**, & **z**; and the 4th dimension, **time**, **t**.

Our model, however, suggests that there is a **5**th **dimension**, **c**; which is the **speed of light**.

We will soon learn how the 5th dimension can shrink space and slow down time depending on how close you are to the center of the Universe!

Before we dive into that, let's answer the question that many scientists before us have tried to answer.

That is, "why do objects accelerate towards Earth's surface" or "what is Gravity?"

Chapter 10

Gravity

We describe the phenomenon of objects falling to Earth and objects floating in space using only the forces we have noted so far in this book; which is:

1. **Hooke's law of Springs** - Chapter 1
2. **Coulomb's law of Magnetism** - Chapter 2
3. **Newton's law of Inertia** - Chapter 3

Hooke's Law describes the nature of the aether as if it were a spring. It connects the electrons in the middle of the Universe to the protons on the edge.

Coulomb's Law describes how the protons everywhere are magnetically attracted to the electrons that make up the Sun and the stars; which is what suspends the planets above Earth's surface.

Newton's Law of Inertia describes how (as the Universe spins) centrifugal forces push everything away from the center, towards the edge.

Newton's law of Inertia is dominantly responsible for objects accelerating out towards Earth's surface.

The more wind resistance something has the slower it falls. However, if we were to remove all of the air from a room then anything we dropped would fall at the same speed.

So, why do all objects fall at the same speed when there is no ari?

The current model suggests that it's due to a mysterious force which pulls everything together, even chargeless masses; called:

Gravity

Our model doesn't require such a force. In fact, our model suggests that there is no force acting at all when an object is in free fall. Let's elaborate with an example.

When **Felix Baumgartner** ascended 24 miles above the Earth's surface in his giant helium balloon, he changed only his altitude; keeping his position above the launch site, for the most part, the same.

Since the Earth is spinning, we can say that the Earth and Felix were moving at the same speed.

Once he stepped out of his balloon-ship, he began to fall to Earth; or was it the other way around?

Our model suggests that Felix wasn't actually falling, but, rather, he was moving in a straight line and it was the Earth that curved up to meet him! This concept is illustrated on the next page.

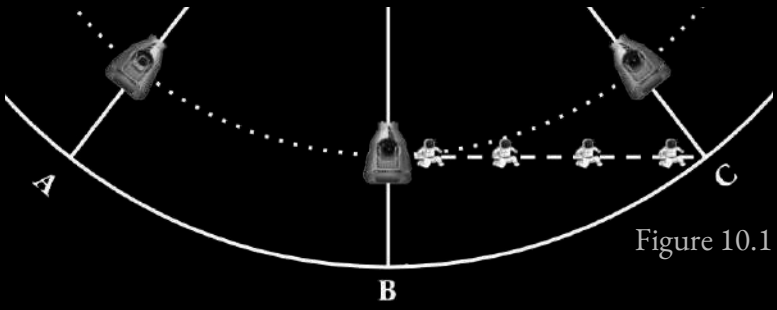


Figure 10.1

That explains why things fall to Earth, But what about objects suspended in space?

Before we answer that, let's review a brief history of how some of the greatest minds tried to solve this mystery.

If you were a Greek scholar born thousands of years ago, then your only knowledge of the Universe would be that, every day, the Sun goes down below the horizon and the sky becomes dark, revealing to you its assortment of glowing white dots. If you note the position of the brightest dots every night, you will notice that several of them move. You would call these moving dots "planetai," which in Greek means "wandering star." Today we call them **planets**.

About 2,000 years ago, the Roman Astronomer, **Claudius Ptolemy**, developed a mathematical method that predicted the motion of these planets through the sky; assuming that the Earth was the center of the Universe.

In the *early* 1500's, **Nicolaus Copernicus** developed a model of the Universe that placed the Sun at the center, rather than the Earth; suggesting that the Earth itself was a planet just like all the other planets orbiting the Sun.

In the *late* 1500's, **Johannes Kepler** developed the 3 laws of planetary motion, supporting the Copernican model. These three laws state that, 1, the planets move around the Sun in an ellipse, 2, the Sun is at the foci of that ellipse and, 3, the farther away a planet is from the Sun the slower it moves.

In the late 1600's, **Sir Isaac Newton** (mentioned earlier) studied the tendency for objects to fall to Earth's surface with a constant acceleration of 9.8 meters per second per second; or "meters per second squared". He thought that whatever caused objects to fall to Earth may also be causing the motion of objects in the sky, suggesting that massive objects pull each other together like magnets.

Around 1922, **Albert Einstein** expanded on the idea of gravity with his proposed concept of *spacetime.* Einstein defined his new concept as being like an elastic surface with heavy spheres on it; causing the spacetime to warp towards mass:

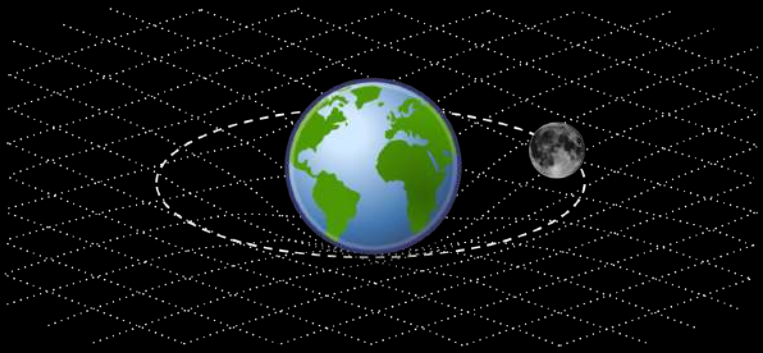


Figure 10.2

Of course, he doesn't suggest that there is an actual fabric that everything rests upon; the previous diagram of 2-dimensional fabric is just easier to grasp. Instead, spacetime is more like a 4 dimensional grid that *bends time and space towards massive objects*, causing smaller objects to *slidedown* towards big ones.

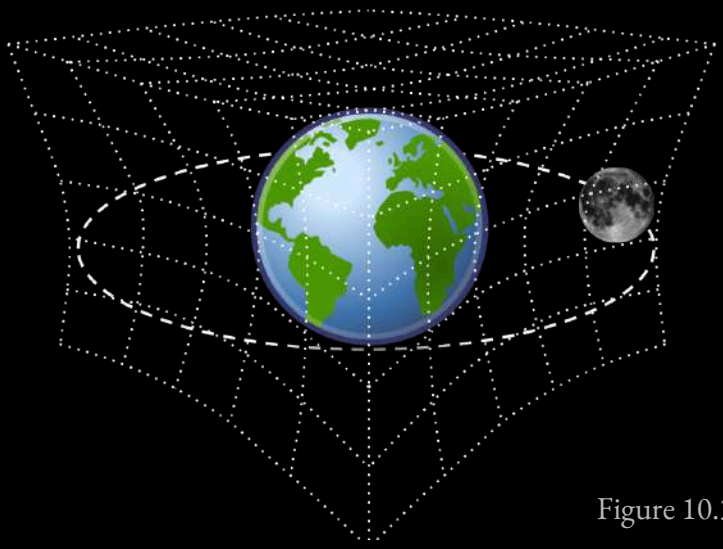


Figure 10.3

The problem with these early theories on space and gravity is that they don't completely explain what this force is or where the energy to pull everything together comes from.

The **Law of Conservation of Energy**

The total amount of energy in the Universe remains the same at all times.

Contrary to this law, the current definition of gravity violates this law; suggests that if there were 2 neutrons at rest in a Universe all by themselves, then they will accelerate towards each other; both (somehow) gaining kinetic energy. What Newton and Einstein suggested through their theories was that, essentially:

1. There are imaginary rockets on the back side of every particle that push all masses together,

2. The closer any massive objects are, the exponentially stronger those rockets get, and

3. They have unlimited imaginary fuel!

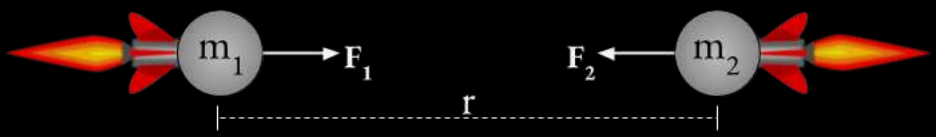


Figure 10.4

Gravity

$$F_1 = F_2 = G \frac{m_1 m_2}{r^2}$$

The equation for how charged particles interact is nearly the exact same as the equation for gravity. Where, instead of **m** representing mass, **q** represents charge:

Magnetism

$$F_1 = F_2 = K \frac{q_1 q_2}{r^2}$$

Where r is the distance between the objects.

So, instead of suggesting that *mass* is the reason planets orbit the Sun, we argue that it's the *magnetic attraction* between the protons (in the planets) and the electrons (in the middle) that allow the celestial bodies to be suspended in space

Any force, **F**, (sometimes called weight) is equal to the mass of an object, **m**, multiplied by the rate of acceleration, **a**, it experiences at any moment.

That is; **F** = **ma**. To determine the **acceleration**, **a**, caused by a spinning system, we need to know the rotational **velocity**, **v**, and the radius, **r**, from the center to fulfill the equation:

Centrifugal Force

$$F = ma = mv^2/r$$

We know the rate at which objects fall to Earth (**9.8** m/s^2), and we know the rotational **v**elocity of the Earth relative to the stars; (one rotation per day or "**2π**r / **86,400** seconds"), so:

$$F = m\,a = m\,v^2 / r$$

$$a = v^2 / r$$

$$r = v^2 / a$$

$$r = (2\pi/86{,}400)^2/9.8$$

$$r = (4*\pi*\pi*r*r/7{,}464{,}960{,}000)/9.8$$

$$9.8*r = 4*\pi*\pi*r*r/7{,}464{,}960{,}000$$

$$9.8*r*7{,}464{,}960{,}000/4*\pi*\pi = r*r$$

$$9.8*7{,}464{,}960{,}000/4*\pi*\pi = r*r/r$$

$$9.8*7{,}464{,}960{,}000/39.478 = r$$

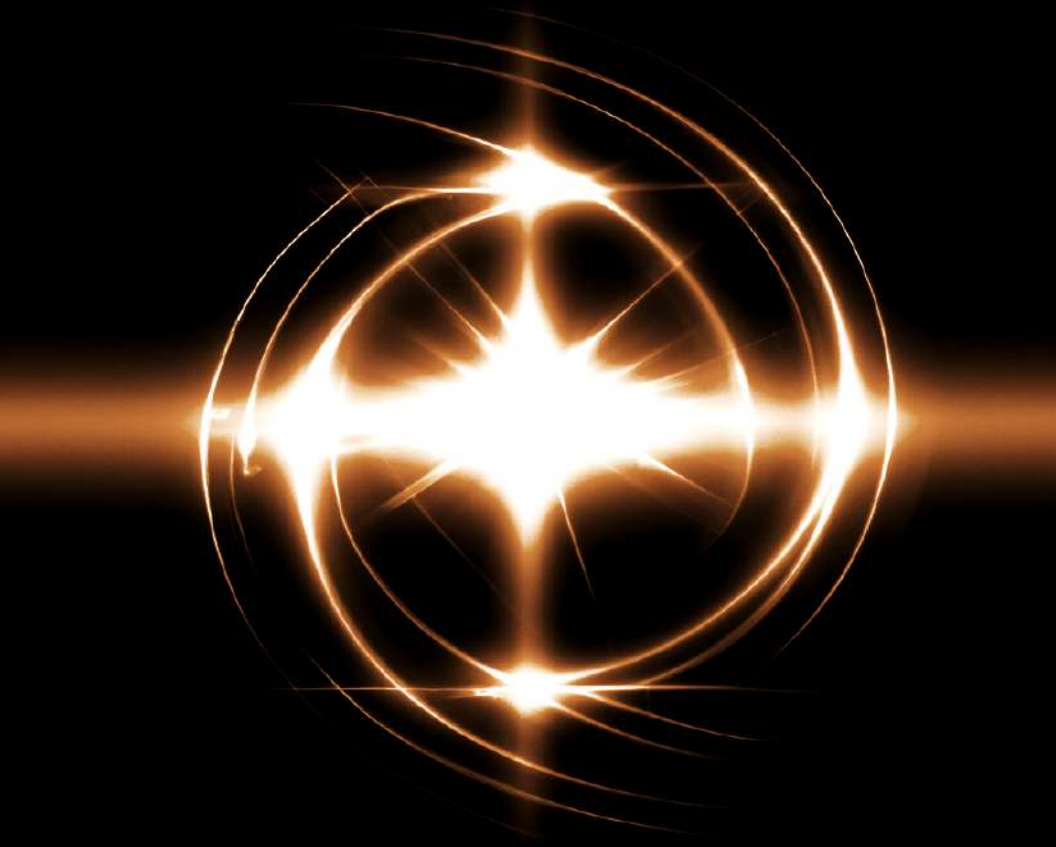
$$1{,}853{,}098{,}130 \text{ meters} = r$$

$$r = 1{,}151{,}461 \text{ miles!}$$

In order for our model to function the Earth must be 288 times bigger than the current model suggests it is! But we've measured the Earth, how could it be so much bigger than it appears? To answer that we need to understand the relationship between the speed of light and the first 4 dimensions; x, y, z, & time.

Chapter 11

The Speed of Light



There are two types of waves in the Universe; mechanical and electromagnetic. Let's start with mechanical waves; which transfer energy from one molecule to another.

Suppose you jumped in the water and made a loud splash. A boat **1** mile away would hear you **4** seconds after you made the noise.

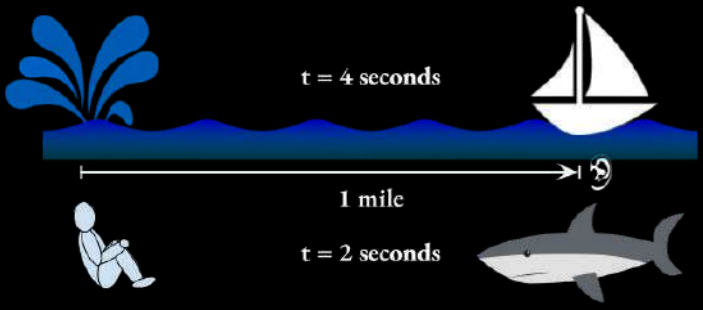


Figure 11.1

If there was a shark under that boat, one mile away, then it would hear your splash in just half the time it took the boat to hear you.

Sound travels faster underwater than it does through air because the water has a higher **density** than air.

Density

The measurement of how much matter there is per unit-volume

The more dense some is, the heavier it feels.

If the density of something is greater than zero then we call it a:

Medium

Any solid, liquid, or gas that a mechanical wave can travel through.

The more dense a medium is, the faster a wave (such as sound) can traverse it.

If the density is zero then we call it a **void** or a **vacuum**; meaning that there are no particles present. Therefore sound and other mechanical waves cannot propagate through that region of space.

Mechanical waves require a medium to travel through

Therefore, sound can not travel through empty space.

Light, however, is not a mechanical wave so it is not governed by Newton's Laws. Rather, its behavior is still a mystery that we3 will discuss before the end of this chapter. For now, let's continue to focus on mechanical waves. The like-charge-repulsion-forces between the protons keep particles evenly spaced out.

Figure 11.2

If we make a sound, then molecules become momentarily compressed closer together. That compression propagates through the medium, followed by a decompression. Together they make up a single **wavelength**; also known as a disturbance.

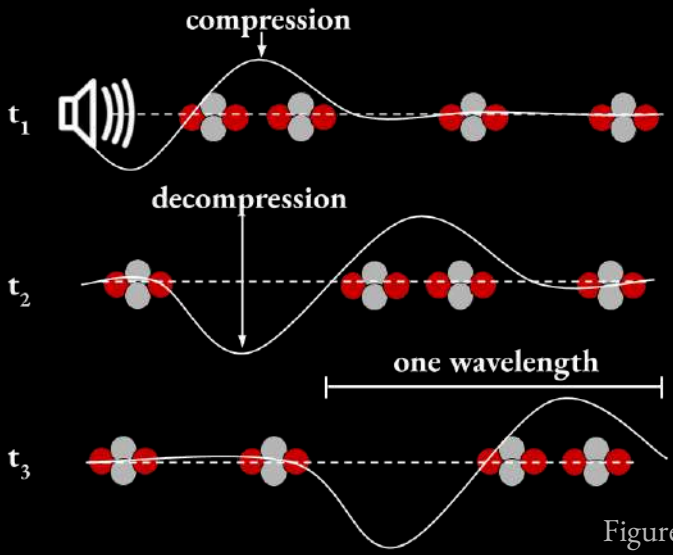


Figure 11.3

Since sound requires some medium to travel through, if we went to the Moon (where there is no air) and I made some noise, then you would not be able to hear me. Although, you *could* still *see* me. Waves that are able to travel through a vacuum are called:

Electromagnetic Waves

Oscillating electric and magnetic fields

Electromagnetic (EM) waves can propagate without compressing matter together (unlike sound waves) enabling us to perceive objects across the vacuum of space. Instead, they move through empty space at the speed of light; but is space really empty?

Recall that earlier in this book, we hypothesized that "each proton in the Universe is paired with a corresponding electron, linked by an aetherial spring."

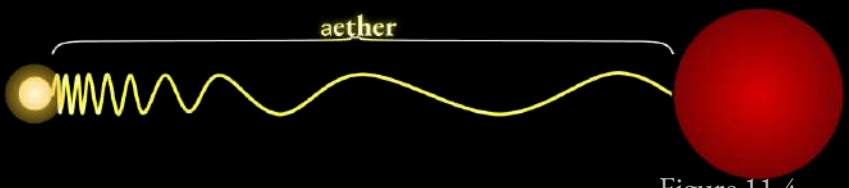


Figure 11.4

We argue that light doesn't travel through *empty* space, but rather it travels through a sea of aether in the form of electromagnetic waves.

An EM-wave causes the aether to induce an **electric field** in one direction and a **magnetic field** in the orthogonal direction (which is a right angle in 3D).

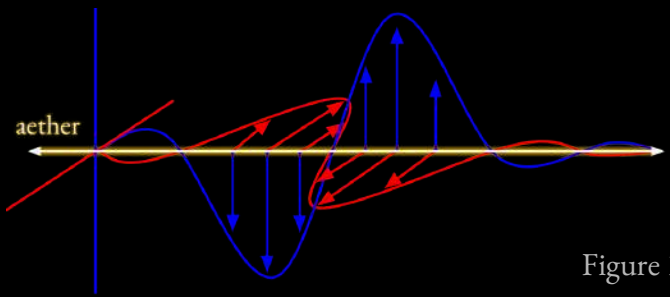


Figure 11.5

The aether is able to transfer electromagnetic waves from one spring to another as well as up and down. If we have an abundance of aether springs side by side, then light can travel in all directions.

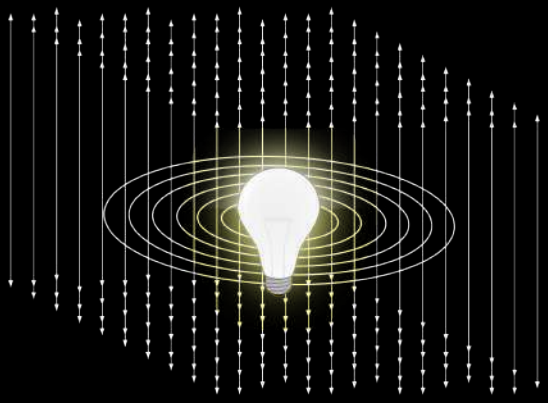


Figure 11.6

Since our atomic model suggests that the aether connects the outside edge to the center, then the aether must fill all of space.

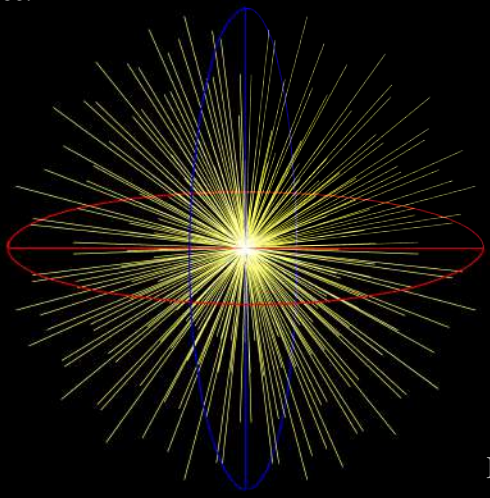


Figure 11.7

The following diagram shows how wavelengths tend to compress as the aether converges. We'll expand on this in the next chapter.

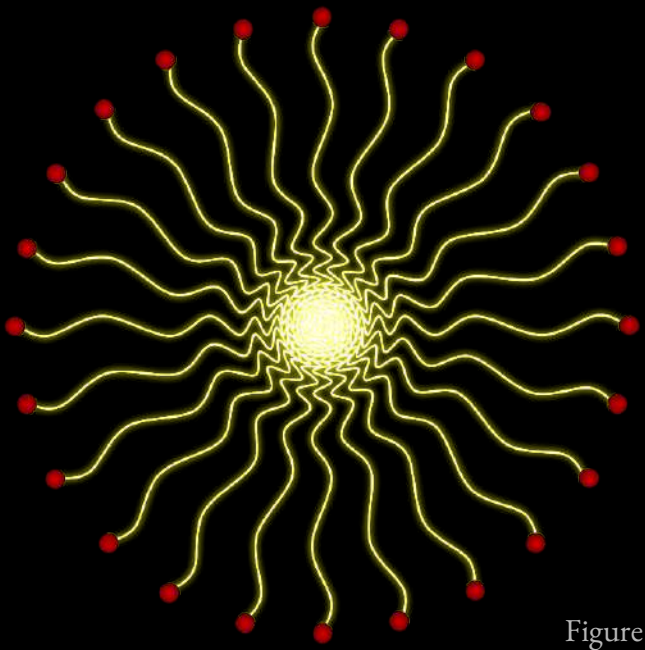


Figure 11.8

For now, we just need to understand the two values that determine the color of light; **wavelength** and **frequency**.

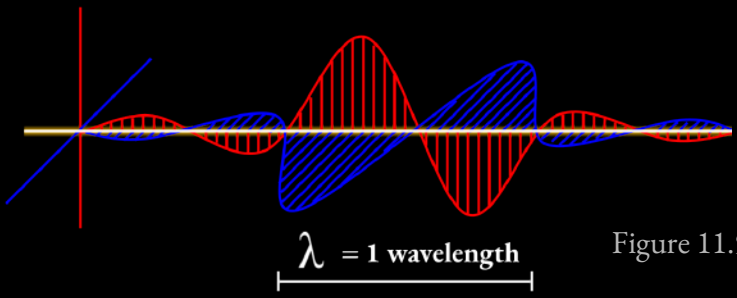


Figure 11.9

Wavelength

$\lambda = c / f$

"The speed of light, divided by frequency"

Frequency

$f = 1 / t$

"The number of photons that pass per second"

*Where **t** is the time it takes for one photon to pass by.*

Plainly speaking, the wavelength is the length of an EM wave and the frequency is how frequently those waves will pass by an observer.

For instance, the wavelength and frequency of blue is .000000490 meters or **490** nanometers and 670,000,000,000,000 photons per second or **670** terahertz, respectively.

Red, on the other end of the spectrum, is **750** nanometers and **400** terahertz.

Notice that as the wavelength goes up, the frequency goes down. That's because those two numbers always multiply to give you the speed of light! Which is about **300,000,000** meters per second or **186,000** miles per second *observed*.

Wavelength (denoted by the greek letter "lambda," λ) depends on the speed of light, **c**. Which means that if the speed of light changes, so should the first 3 dimensions; also known as space.

Rearranging $\lambda = c/f$ into $f = \lambda/c$ suggests that both wavelength and frequency are dependent on the speed of light. So, if the speed of light changes, then so should the frequency of the ticking of time as well as the size of space!

Before we start discussing variabile space and time, let's spend the next couple pages making sure we understand the relationship between wavelength, frequency, and the speed of light.

Imagine that we have a train-car that's 15 meters long.

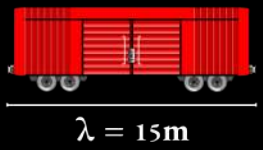


Figure 11.10

Just like measuring the length of a photon, we can denote the length of a train-car by using lambda, λ. If there's a train that is ten cars long and the cars are 15 meters long, then we know that the total length of that train is 150 meters.

150 m

Figure 11.11

If the entire train passes us in one second, then we know that it took each car one tenth of a second to pass. All together, the train is moving at a frequency of 10 cars per second.

t = Time it takes for 1 car to pass

f = Number of cars that pass each second

By identifying the frequency of an individual train-car, we know how fast the train is traveling in terms of 'cars' as the unit length; that is, *the train is traveling at a speed of 10 cars per second*.

If we want to say the speed of the train in MPH we just switch the unit "car" with the actual length of the car.

Instead of saying:

"..10 cars per second"

we can say:

"...10, (15 meter cars) per second"

or simply:

"...150 meters per second"

(335 mph!)

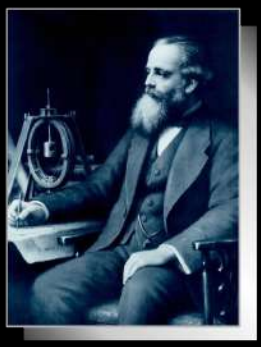
The point is: if you know the length and frequency of something, then you can determine its speed simply by multiplying those 2 values together.

Since each color has a unique wavelength and frequency, then by multiplying those two numbers together it will reveal to us the:

The **Speed of light**

$$c = \lambda f$$

"The speed of light is equal to wavelength multiplied by frequency"



A scientist by the name of **James Clerk Maxwell** discovered this very important relationship in 1865.

It was later expanded on by **Albert Einstein** under his assumption that the speed of light will always appear the same whether you're standing still or moving really fast.

The speed of light, however, is not constant. It may appear so, but the true speed of light hides itself from directly being measured. We will discuss the experiment that proves this in the next chapter.

For now, you just need to understand that as you travel towards the center of the Universe, the speed of light will tend to slow down.

And if the speed of light slows down then wavelength and frequency will shrink and slow down, respectively.

Obviously, this claim directly violates Einstein's theory of Relativity. Therefore this is to be considered a replacement theory.

General Theorem

The speed of light slows down the closer you are to the center of the universe.

At the center of the universe is a black hole where c is zero.

The actual reason that the speed of light slows down is not yet verified; but if everything we've said so far is true, then the following theorem will perfectly describe the speed of light.

Special Theorem

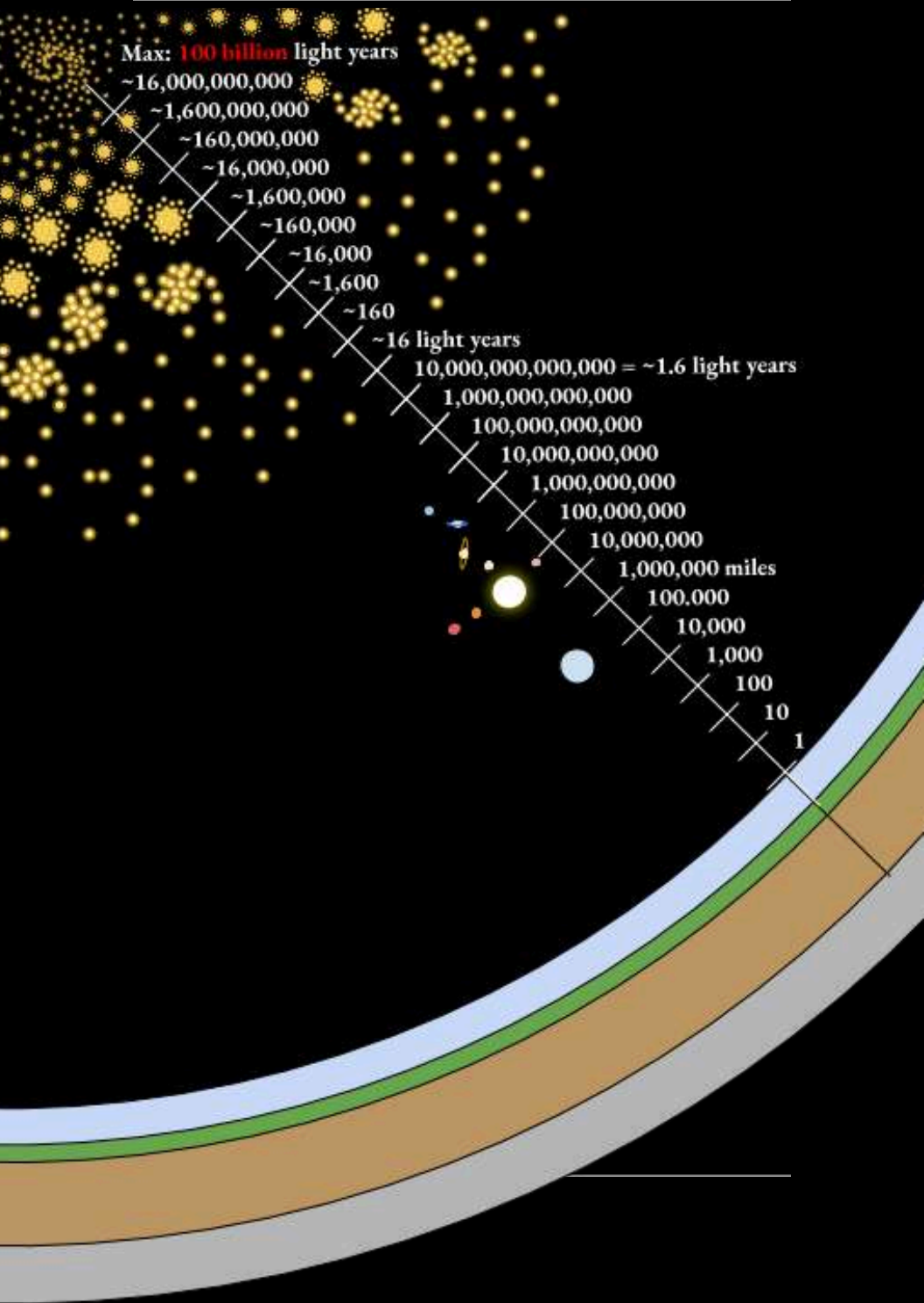
The time it takes for light to go from one Aether to another is the same at any altitude along the axes.

The closer together the Aether are, the slower the speed of light is.

So, as it appears, you can fit a seemingly infinite amount of 3 dimensional space inside of a 5 dimensional sphere that is physically only about 2 million miles across (in one dimension).

On the next page we will make our best attempt at a to-scale map of the stars and planets.

Keep in mind that we are still very short on experimental data so this is an educated guess at best.


Max: 100 billion light years
~16,000,000,000
~1,600,000,000
~160,000,000
~16,000,000
~1,600,000
~160,000
~16,000
~1,600
~160
~16 light years
10,000,000,000,000 = ~1.6 light years
1,000,000,000,000
100,000,000,000
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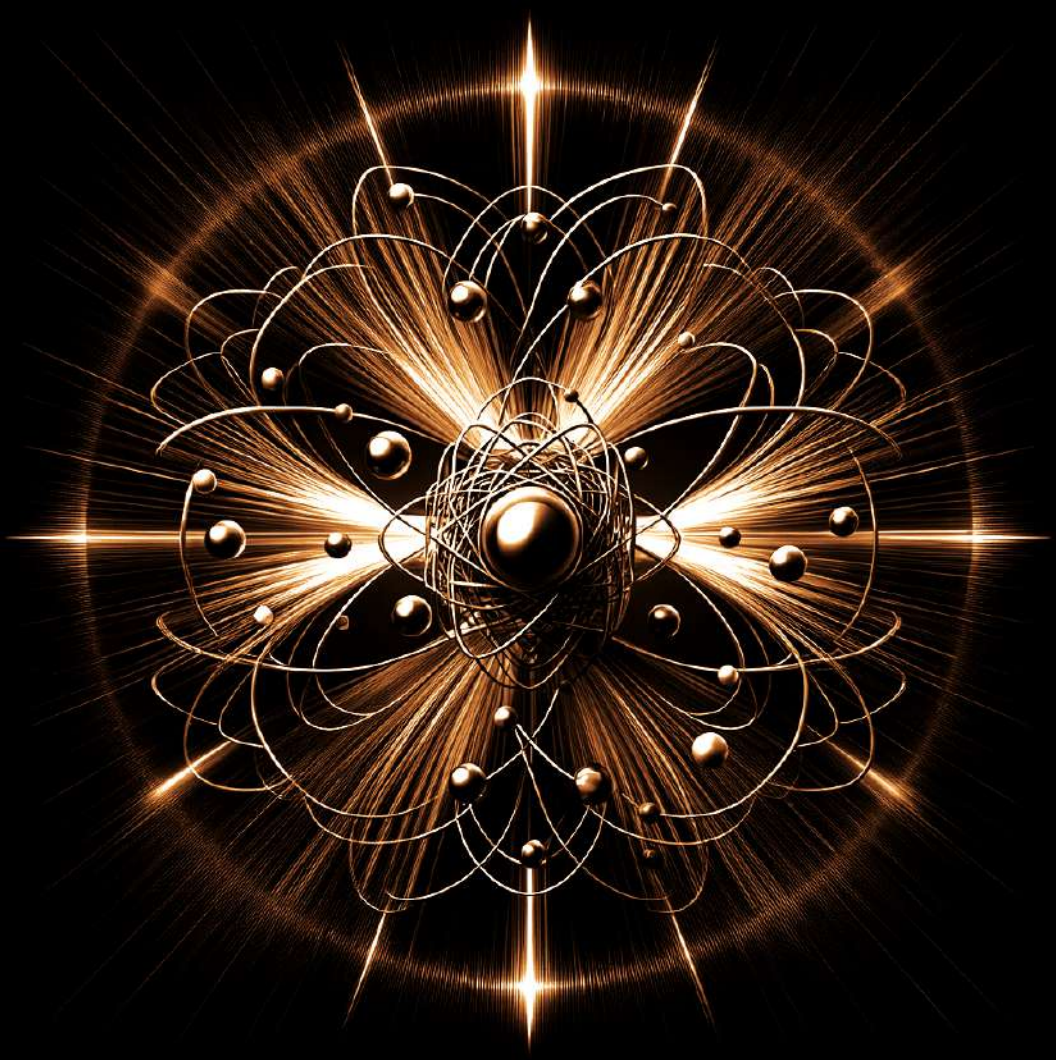
1,000,000,000
100,000,000
10,000,000
1,000,000 miles
100.000
10,000
1,000
100
10
1

Figure 11.11

Chapter 12

The Nature of Light



Let's figure how light must move in our model.

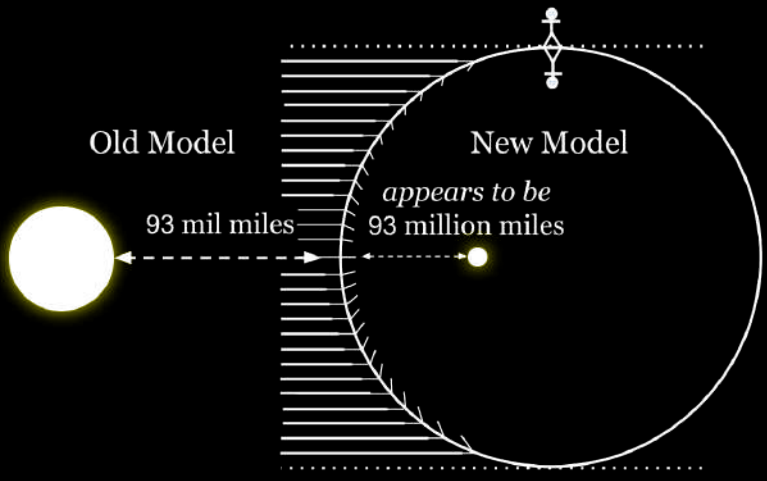


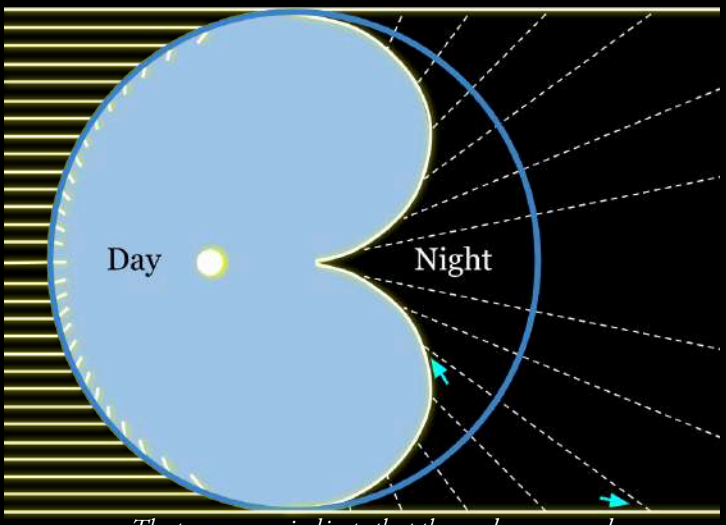
Figure 12.1

Since the angles are the same in both models, we just need to flip them from the outside to the inside to get started.

As shown in the diagram above, the Sun's light (in the old model) travels a very long distance; making each beam nearly parallel to each other. That, obviously, is not the case in our model since light must take a curved path to line up with the angle at which the Sun intersects the Earth's surface.

We also know that when the Sun illuminates one half of the Earth, the other half experiences night time; our model will have to account for that, too.

In the diagram on the next page, we match the angles of the Earth's shadow to reveal how it will translate into our model.



The two arrows indicate that the angles are equal

Figure 12.2

Now, let's connect the lines from the ground to the Sun. Notice that at noon the light from the Sun goes straight towards Earth, whereas at Sunset and Sunrise light must travel nearly twice the distance than it does at noon.

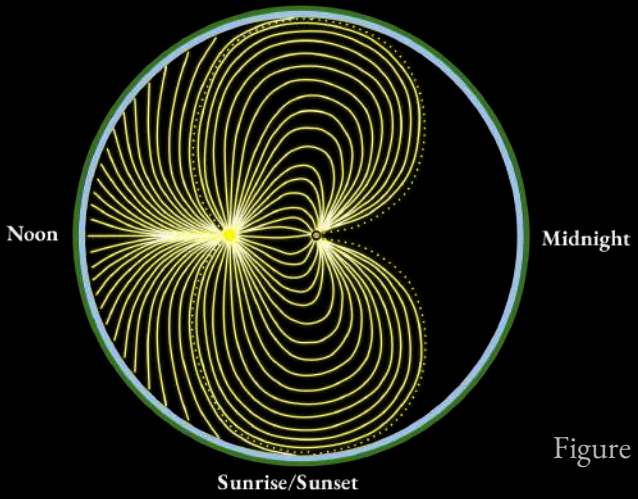


Figure 12.3

The previous diagram tells us that light from the Sun will either intersect the Earth's surface or retract back towards the center.

That should explain why we can't see the other side of the Earth from the ground, why we can only see one half of the Earth from space, and why the Sun's image appears to stretch as we view it approaching the horizon.

Now, let's talk about the things we do see when we peer into the night sky.

Since the Moon is a sphere, one half of it will be illuminated and the other half will be dark. Thus, we can predict how the Sun's light will interact with the Moon based on the path it takes; as shown below.

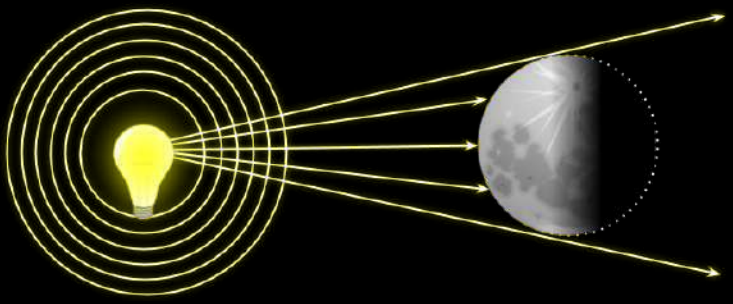


Figure 12.4

Another important piece of information that we can derive from the old model is that it takes about 4 weeks for the Moon to cycle through all of its phases.

In the following diagram we've spaced out 28 Moons relative to the Sun to show which side would be illuminated based on the curved lines we deduced earlier in the chapter.

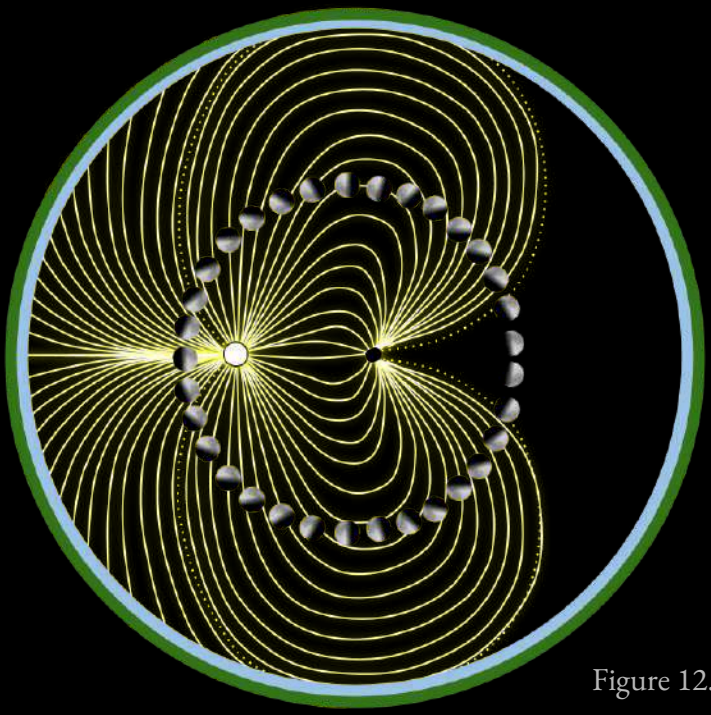


Figure 12.5*

Two positions of the Moon in particular allow the Earth and the Moon to cast their shadows onto each other. These events are known as an:

Eclipse

When either the Moon's shadow is cast onto the Earth or the Earth's shadow is cast onto the Moon.

There are **3** things we need to know in order to predict an eclipse:

1. The old model suggests that the Earth is on a 23º tilt with respect to the **Sun's orbital plane**. This is what's responsible for the cycle of our seasons as illustrated on the next page.

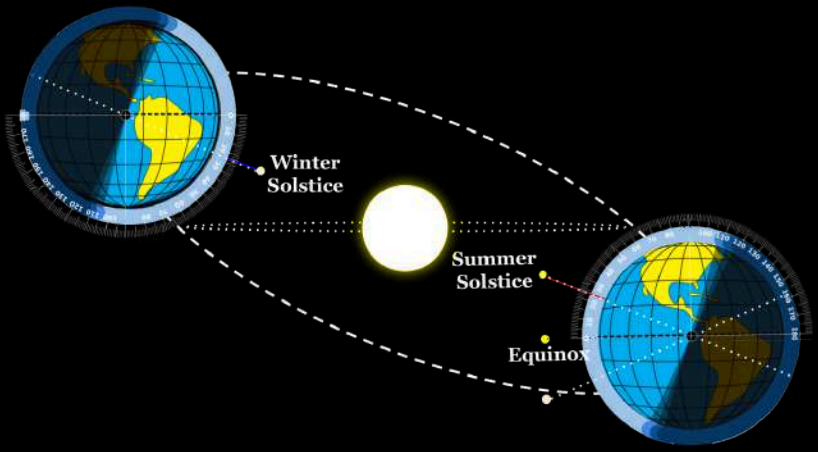


Figure 12.6*

The Arctic Circle (which surrounds the North Pole) experiences daylight for 24 hours during the **Summer Solstice**. Likewise, half a year later, the Antarctic Circle (which surrounds the South Pole) is lit for 24 hours during the **Winter Solstice**.

To go from the old model to the new model, we need to account for the angle of the Sun during these events; that is, we need to show where the Sun should be in order to illuminate different parts of the Earth throughout the Year.

The easiest point of view to imagine this from is at the equator; where the Sun should be directly above you during the equinoxes.

During the Summer Solstice, the Sun will be 23 degrees to the North. Likewise, during the Winter Solstice the Sun will be 23 degrees to the South.

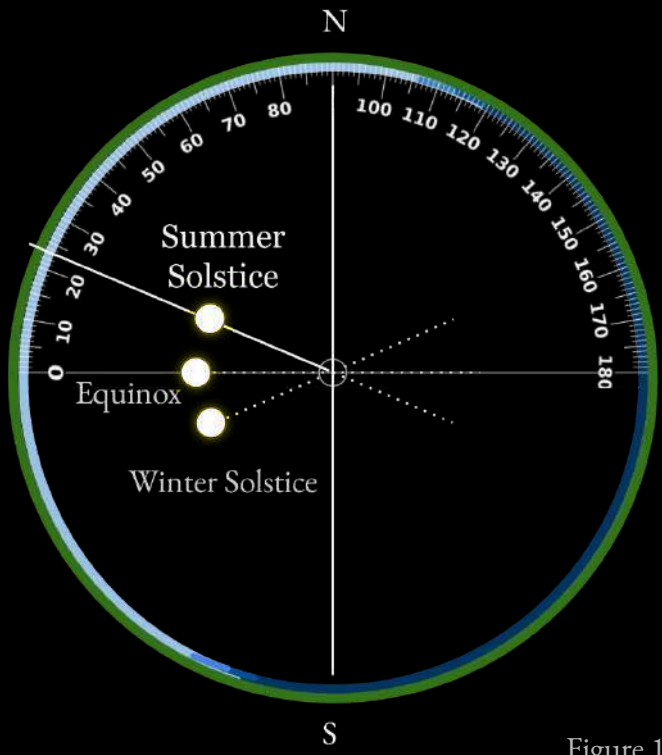


Figure 12.7*

2. The old model also suggests that the **Moon's orbital plane** is the same as the Sun's except that it's off by about 5º (degrees).

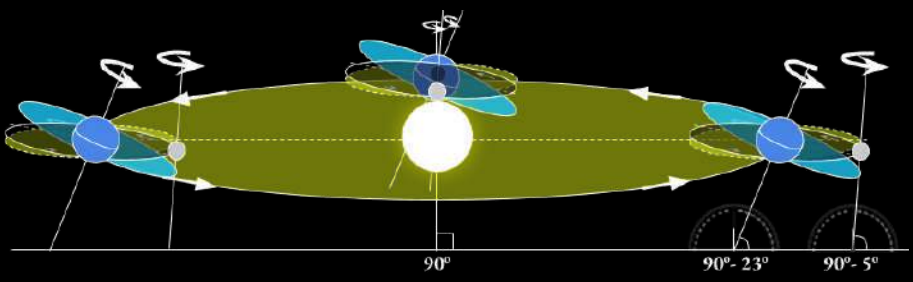


Figure 12.8*

3. The tilt of the Moon's orbital plane goes through a full rotation once every 18.6 years; So, essentially, it's fixed to tilt to one side for the most part, but is actually just taking 9.3 years to lean the opposite way.

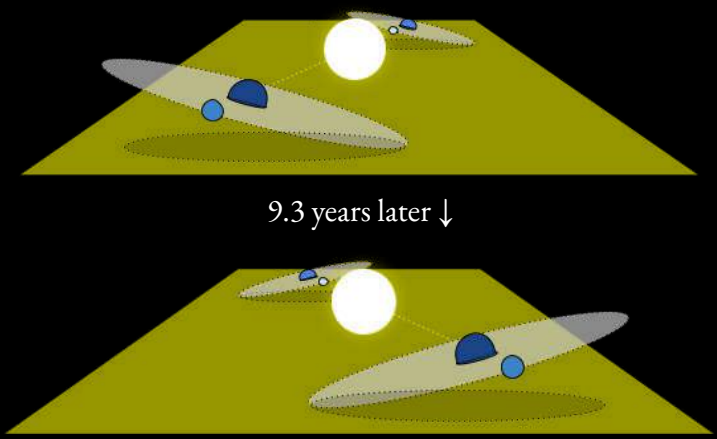


Figure 12.9

This tilt makes an eclipse only possible at certain times of the year when the Sun, Moon, and Earth all line up.

In our model, the Sun's orbital plane wobbles up and down with a range of 46° throughout the year. Whereas the Moon does so with a range of 10° over 18.6 years.

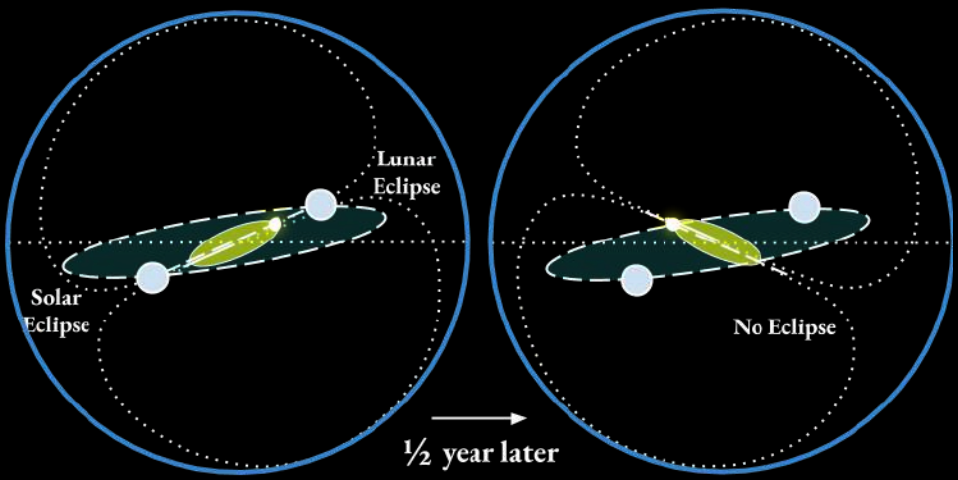


Figure 12.10

The following diagram shows the path light must take in order to get from the Sun to the moon during a Lunar eclipse.

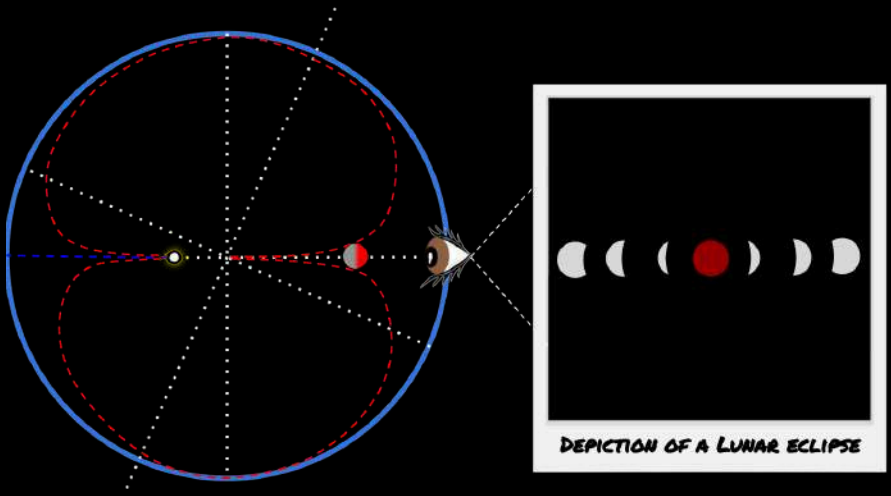


Figure 12.11*

Let's imagine that we are standing on the Moon during a Lunar eclipse; as shown below:

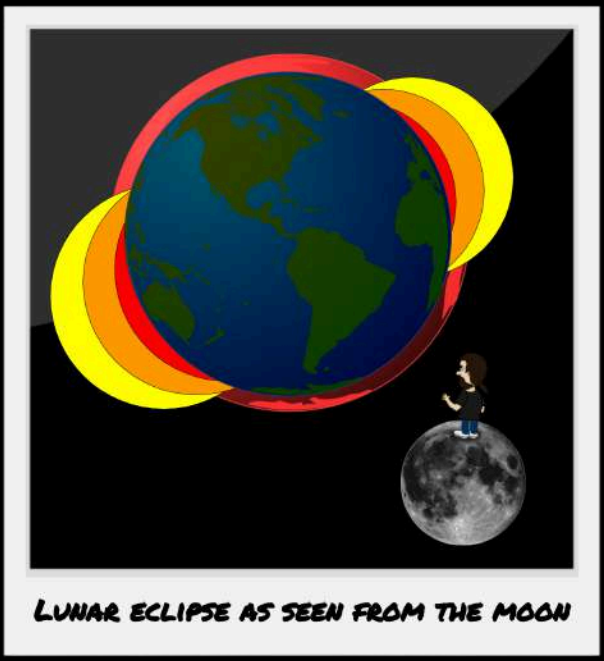


Figure 12.12*

What you'd see is the Sun setting on one side of the Earth and then, shortly after, rising on the other side of the Earth.

So, why does the moon glow red during an eclipse? The same reason the **Sun glows red** at **Sunrise and Sunset**.

The nature of light restricts only stretched beams of light to reach us when the Sun appears on the horizon; which is why **Sunsets are red**.

The same color changing effect happens during a solar eclipse when the Moon blocks out the Sun during the day. As less of the Sun's image becomes visible, only the **red light** from the Sun can be seen.

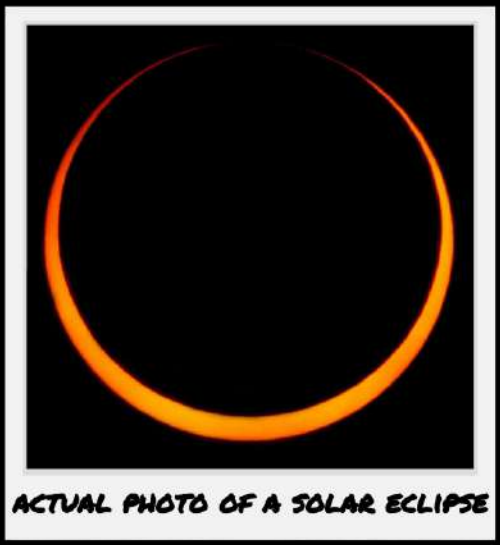


Image 12.1*

Our model suggests that light is never traveling in a straight line; but rather, it is constantly curving its direction and changing speed.

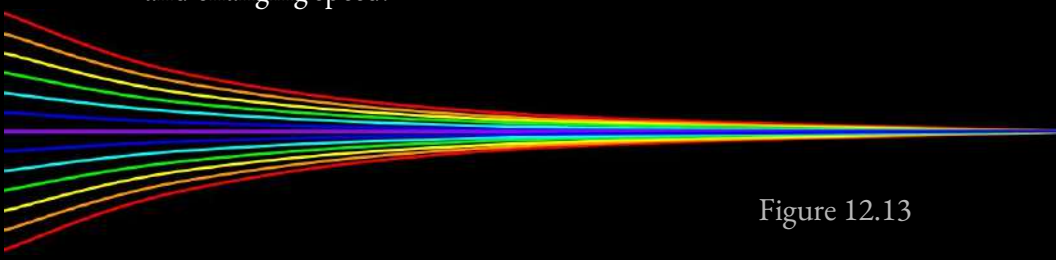


Figure 12.13

As we discussed earlier, the **light that stretches the most** becomes **red**.

When an object intersects a beam of light, the first colors that get cut off are the ones on the edge (which are **red**, **orange**, & then yellow). The colors in the middle of a beam of light (green, blue, & **violet**) have the shortest wavelength; so they are second in line to being eclipsed. The longer wavelengths on the other side of the beam (yellow, **orange**, and once again **red**) curve the furthest around an object, so they are the last colors to be eclipsed.

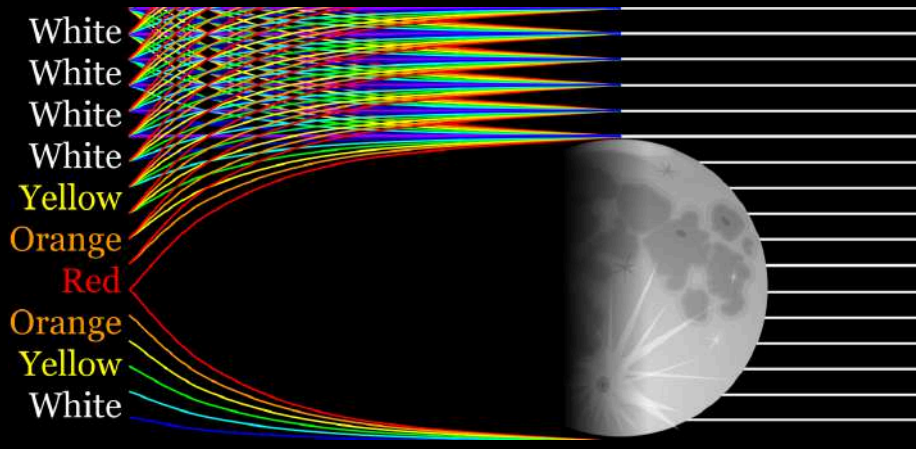
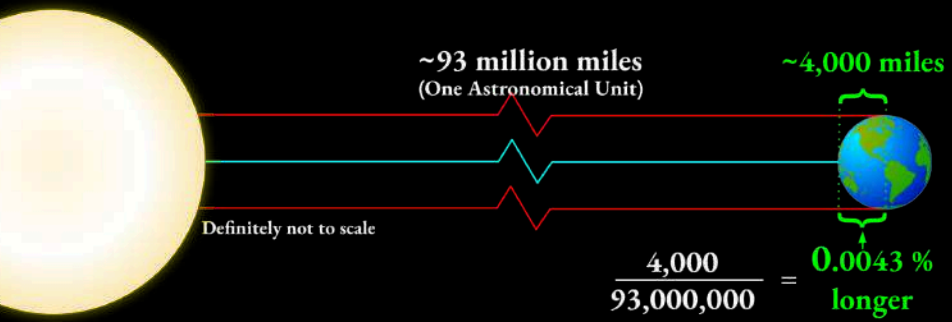


Figure 12.14*

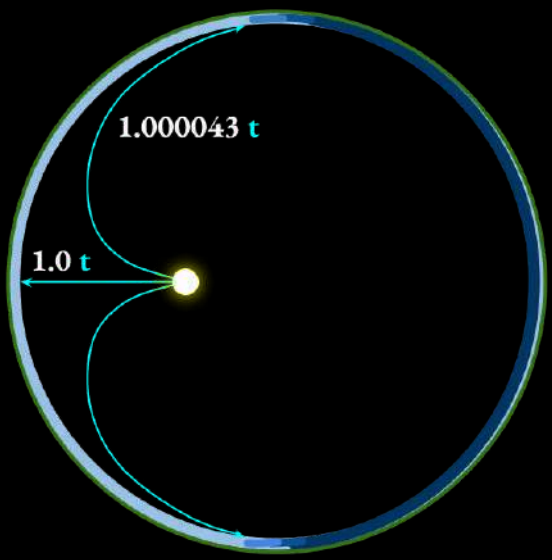
Therefore the only light that can get into the shadow of the moon is **the light that can stretch the furthest** around the moon

The distance that light travels from the Sun to the equator, compared to the **distance that light travels from the Sun to the poles**, differs only slightly in terms of total distance traveled (according to the old model).

Figure 12.15*



That means that the time it takes for light to go from the **Sun to the poles**, or to the equator, must be nearly equal. In our model, notice how much farther the light going towards the poles must travel, even though both paths must take about the same amount of time, **t** (.0043% longer).



t = "The time it takes light to travel from Sun to equator"
t = 8 minutes and 20 seconds

Figure 12.16

The same amount of time implies that there is the same number of photons traveling one after another down either path like a train. The photons going the longer way must stretch in order to cover a greater distance in the same amount of time; so their colors must stretch towards red.

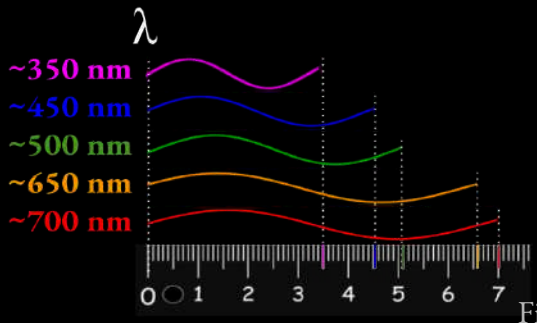


Figure 12.17*

If we have a violet colored photon beam down on Earth from the Sun at noon, then at **Sunset** that same photon would be **stretched to nearly double its normal wavelength;** becoming **red**. Therefore, we can assume that **the red paths in the following diagram** are twice as long as the violet paths:

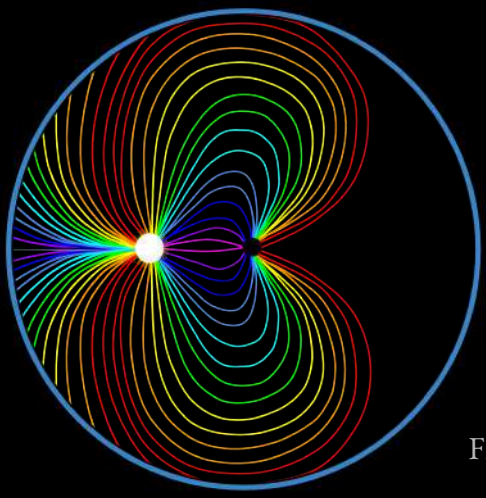


Figure 12.18

This explains why we see rainbows around the Sun.

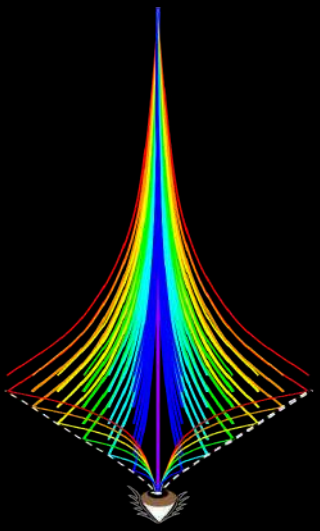


Figure 12.19*

Image 12.1*

Various shades of blue can get to your eyes from all over the sky via the scattering of the Sun's light throughout the gas molecules in the atmosphere during the day.

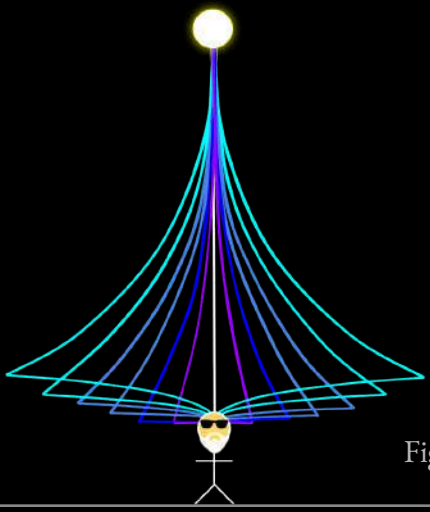


Figure 12.21*

When the Sun's light approaches from the horizon the light that gets to you is stretched into longer wavelengths. That light, likewise, scatters through the atmosphere and the sky showing various shades of red at sunrise/sunset.

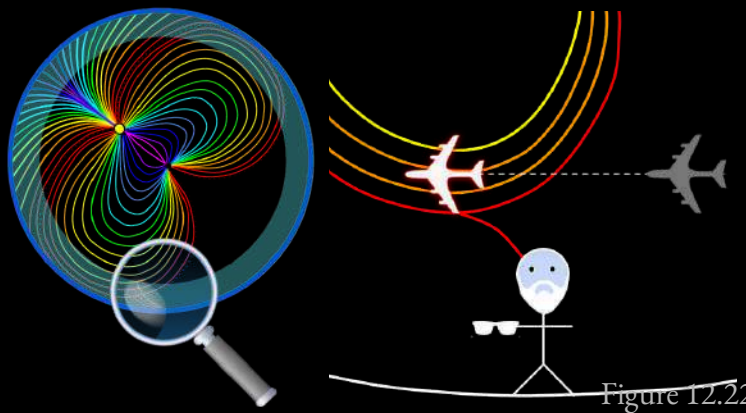


Figure 12.22*

After the Sunset, the Sun's light is still traveling through the atmosphere, however only illuminating clouds and airplanes then scattering throughout the rest of the sky.

The color of the Sun itself appears to change from white, to yellow, and eventually to **red** right before it dips below the horizon; similarly to how the eclipse's colors shift towards red.

Since white is a combination of **all colors**, then by removing blue, white turns into yellow.

Likewise, by removing the green light, yellow turns into **red**. This process is illustrated on the next page:

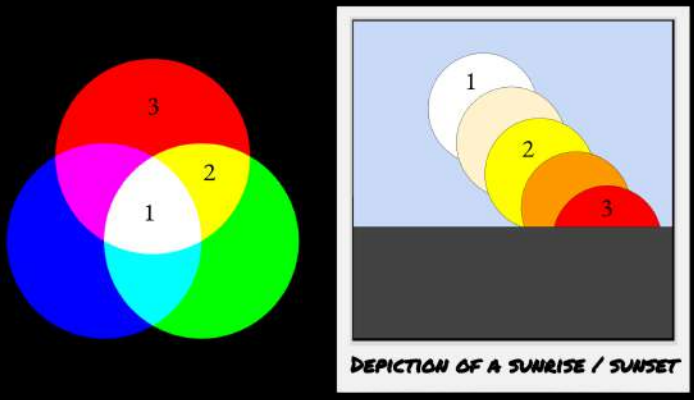


Figure 12.23

The **last direct ray of visible light from the Sun** is also the beginning of **the Earth's shadow**. After that the image of the Sun is concealed by the **horizon**.

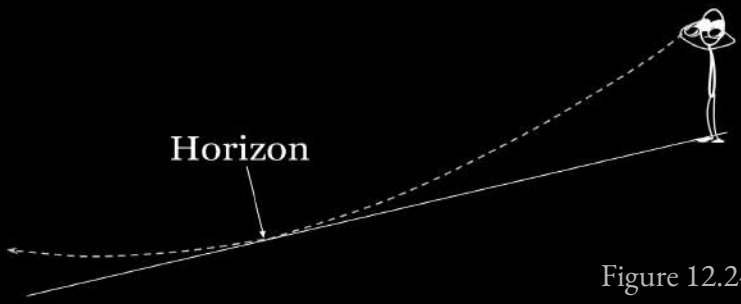


Figure 12.24*

Everything in line with the dotted line will appear on the horizon, whereas everything above it will appear in the sky.

If an object is below the dotted line and beyond the point where the curve touches the ground, then it will be concealed by the ground; giving us the illusion that there is a downward curve to the Earth. If you increase your altitude at the same rate as the Earth's shadow during a Sunset (like if you

were in an elevator with a view), then you could continue to watch the last ray of light peeking through the horizon as long as you want. That's because your altitude determines how far away your horizon is.

As we mentioned earlier, there is a limit to how much of the Earth you can see from any height. That is, we can never see more than half of the Earth's surface at once no matter how high our altitude is. For instance, imagine that you're laying down outside; your horizon would be very close to you. Once you stand up, it would be much farther away.

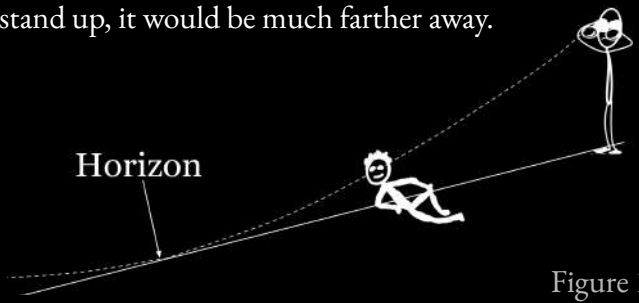


Figure 12.25*

As you increase your altitude you can see much further. If you were to get into a spaceship and takeoff then you could see for thousands of miles!

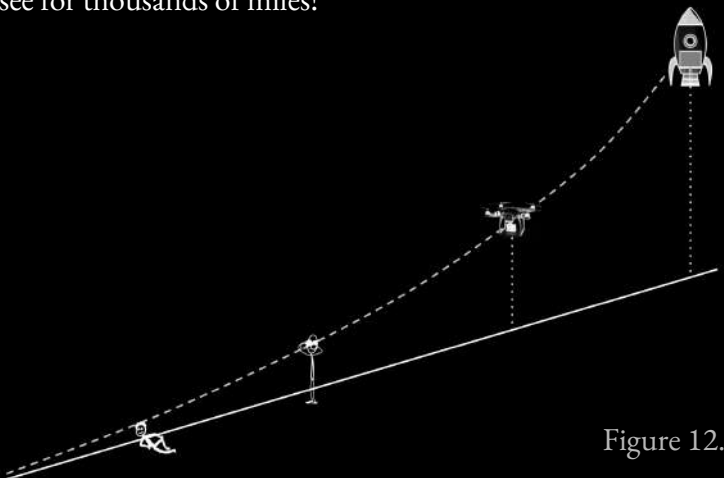
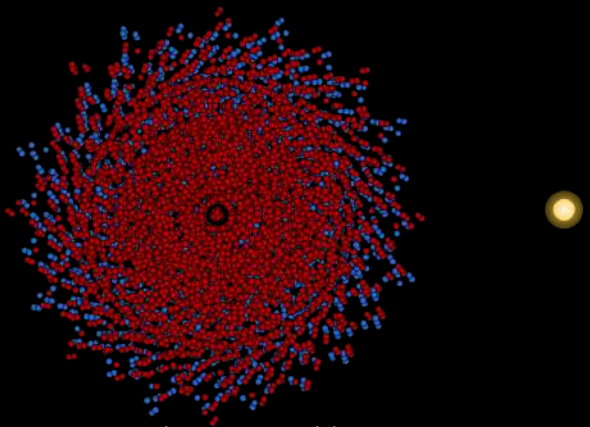


Figure 12.26*

If you keep going into space, you'd be high enough to start to see the horizon go from being eye-level and straight to appear to be below you and circular as if you were looking down on a giant disc. Eventually you will approach the optical limit of how much of the Earth's surface you can see (which is half of the Earth).

Even if you were to somehow ascend as high as the closest star, you could only see up to half of the Earth's surface. Unfortunately, our model may suggest that it would be impossible to even get that close to a star.

The old theory suggests that stars are huge and attract each other together. Our theory, however, suggests the exact opposite; they are small and repel each other!

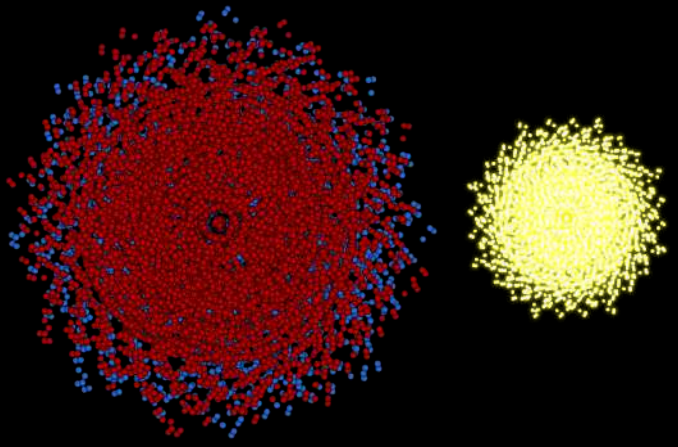


A star in the current model
(hydrogen and helium)

A star in our model
(a single electron)

Figure 12.27

Note that the Sun (in our model) is not a *single* electron; but rather, it's a *bundle* of electrons that are reaching out from the center out towards the edge, much farther away from the center where the other electrons tend to be found.



The Sun in the current model (hydrogen and helium)

The Sun in our model (electrons)

Figure 12.28

The Sun, and other stars, appear to be hydrogen on a spectrograph because a hydrogen atom (according to the old model) has only one electron associated with it, so when we detect only one electron, we assume it's hydrogen, but it's actually just one electron!

We must also keep in mind that (in our model) the Milky Way galaxy is a shell around all of the other galaxies in the center of the Universe; which is why we must look *through* the Milky Way in order to observe other galaxies.

In the old model, Earth is inside the Milky Way galaxy. In our model, the Milky Way galaxy is inside the Earth!

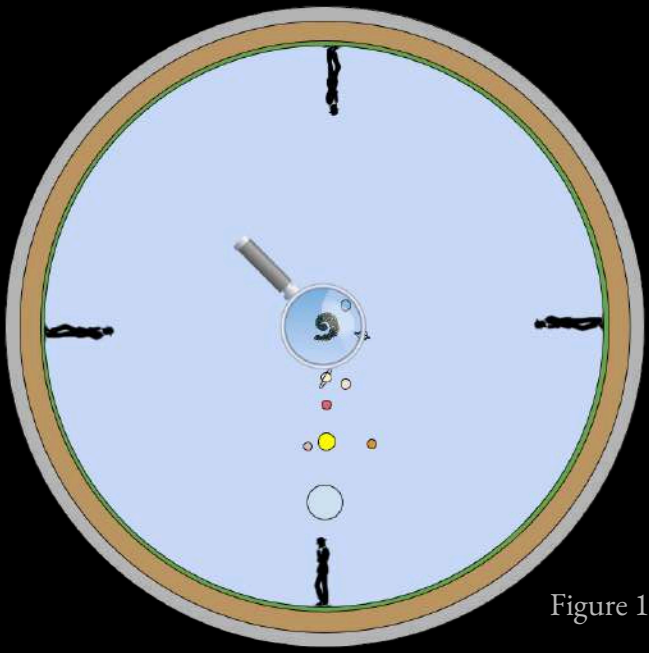


Figure 12.29*

On the surface, the Milky Way Galaxy contains many stars as well as tiny planets, clouds of dust, and a band of small objects known as the asteroid belt. Let's look into the night sky to see what exists within this electron-container as described in. At first glance up we see this large cloud filled with light.

Image 12.2*

Deep within the Milky Way we should no longer be able to see any protons or neutrons due to the spin of the Universe preventing them from getting too close to the center.

This means, sadly, that extraterrestrial life would be impossible. Aliens would have to be smaller than a proton in order to live in deep space. Maybe I'm wrong. Moving on...

Instead, we see billions of galaxies:

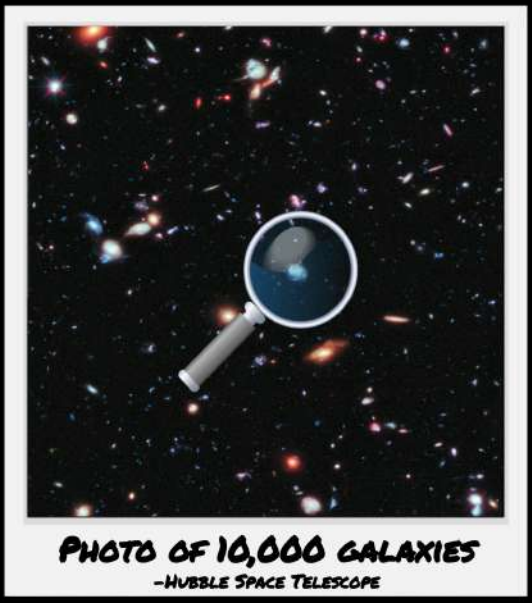


Image 12.3*

Satellite Telescopes, such as the Hubble, give us the ability to peer billions of lightyears *in*to space, revealing to us galaxies beyond the boundaries of the Milky Way, such as the Andromeda, as shown on the next page::

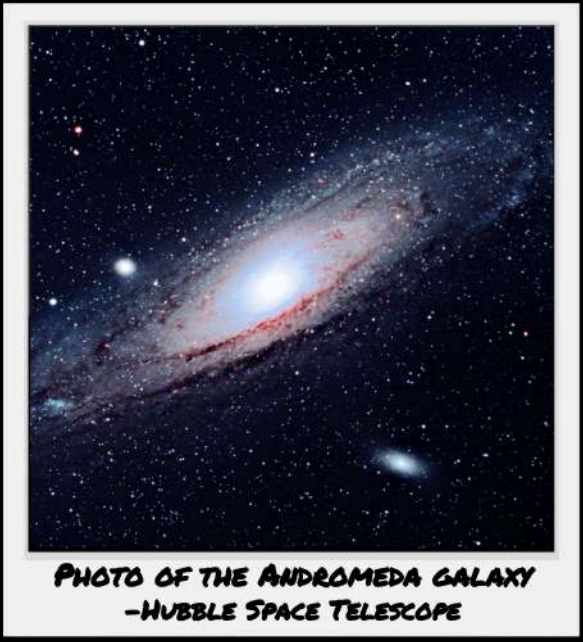


Image 12.4*

If everything we've said so far is true, then what we're looking at in this image is billions of electrons spiraling around together.

If there were any protons present, they would appear as huge dark spots within the glowing spiral formation, which we don't see very often (lookup: dark nebulae).

Therefore, we can conclude that each galaxy (excluding the Milky Way) contains only electrons (stars) and nothing else.

The current model suggests that any other galaxy should be just like our galaxy such that each star is likely the host of a solar system with planets and other objects orbiting it.

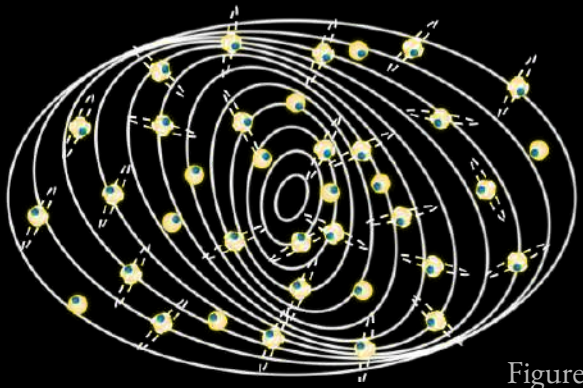


Figure 12.30*

A planet located beyond the Milky Way is referred to as an extragalactic planet, also known as an exoplanet. As of today, there are zero confirmed discoveries of any exoplanets. Since our model suggests that there should be no protons or neutrons deep in space, then this lack of discoveries supports our model.

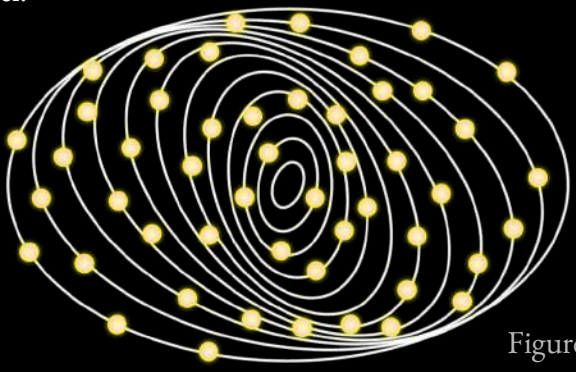


Figure 12.31

Electrons are tiny and it's arguable whether or not they even have mass; so, when describing the motion of a distant

galaxy, we can neglect Newton's Laws and focus on the other two.

We argue that the electrons in distant galaxies are dominantly under the influence of Coulomb's law and Hooke's law; meaning that they're essentially just weightless magnets on the end of springs entangled together.

Recall that Coulomb's Law suggests that the electrons will push away from each other.

Our notion that the aether acts like a spring may also suggest that the aether associated with each electron can become physically entangled with other springs of aether, keeping electrons bundled together.

Those two laws suggest that we will see clusters of electrons trying to get away from each other, but remain as if they're tied together.

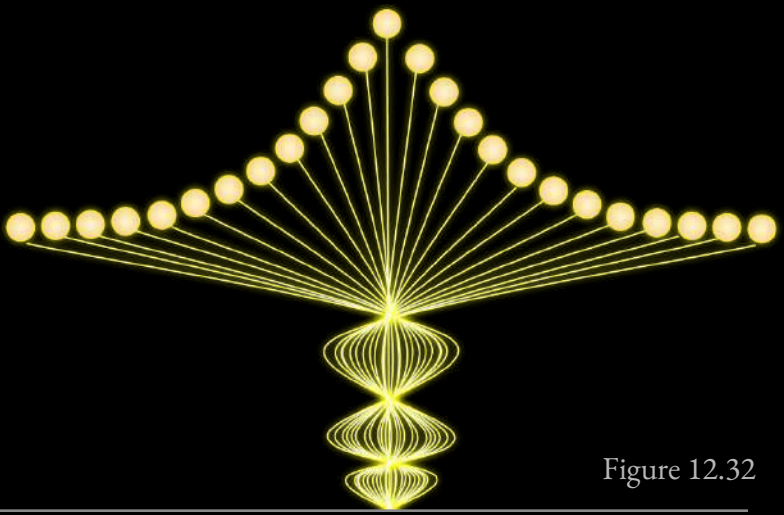


Figure 12.32

The higher altitude electrons will appear to be moving slower since they are closer to the center of the Universe (have higher altitudes) where the speed of light is slower and time ticks by slower. They also appear bigger than they actually are due to the nature of light magnifying objects close to the center.

Individual electrons that travel extremely close to the center may surpass the extremely slow speed of light and undergo visual distortion to an observer looking at the spectacle from Earth.

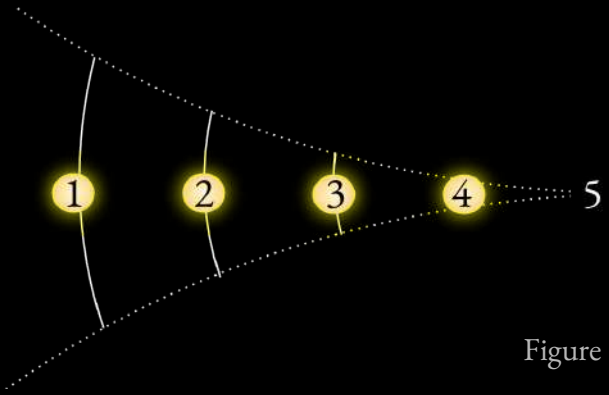


Figure 12.33

Also, an electron usually only takes up a tiny percentage of the sky (the region between the dotted lines); as in position 1 in the diagram above. As the electron approaches the center, going from position 1 to 2 or 3, the portion of the sky that the star takes up will increase, thus increasing the apparent size of the electron and stretching the wavelength of the color to make it appear red-shifted. If the electron continues to approach the center, as in position 4, then the horizons become so close together that the diameter of the

electron can take up a significantly large portion of the sky. In that case, the image appears distorted, such as the image of the Crab Nebula:

Image 12.5*

The electron can continue to pass through the center; thus appearing to collapse the apparent nebula into a black hole.

Then the entire process repeats itself in reverse as the electron makes its way through and begins distancing itself from the center as a supernova.

Image 12.6*

In the old model, we use a telescope to observe giant objects very far away. In our model, even though we use a telescope, the Universe itself acts like a giant *microscope*; allowing us to observe tiny objects under extreme magnification.

Just like how electrons appear to be giant stars really far away, the changing speed of light also affects what we see here on Earth's surface.

If we want to graph the curve of light, then we need the x-axis to represent the horizontal distance to various objects along the Earth's surface and the y-axis will represent the altitude of those objects.

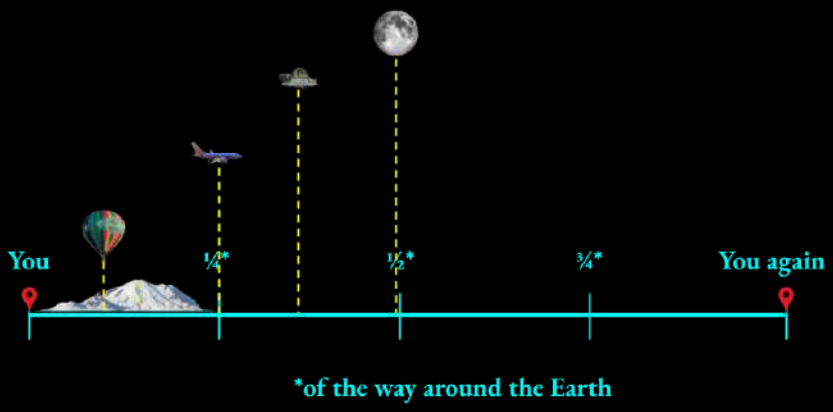


Figure 12.34*

Then, we need to create a curve that represents the altitude of the horizon in the currently accepted model as well as a second curve to be used as a prediction for our model based on some samples of real data.

To find the **altitude** of the horizon (assuming that light travels straight) for various angles of **theta**, θ, we use the pythagorean theorem to find the length of the hypotenuse, **c**, and then subtract the **radius of the Earth**, **a**, from **c**.

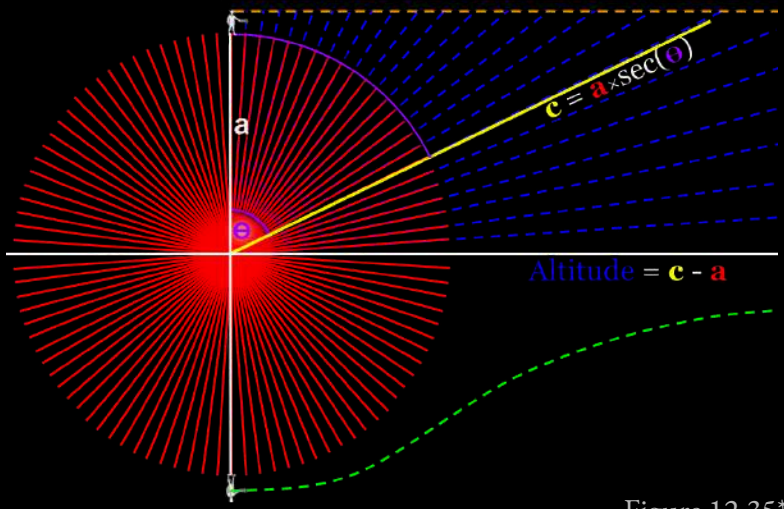


Figure 12.35*

In our model, we claim that the nature of light does not form a straight line (as predicted by the old model).

Rather, the line representing the horizon according to our model will resemble that of a tan(x) curve as shown in the bottom half of the previous diagram.

This prediction is based on the following observations: The tallest building in Chicago (the Willis tower, at about 1600 feet tall) should be 100% concealed by the curve of the Earth from 50 miles away (across Lake Michigan), however ¾ of that building is visible as shown below; a 75% discrepancy!

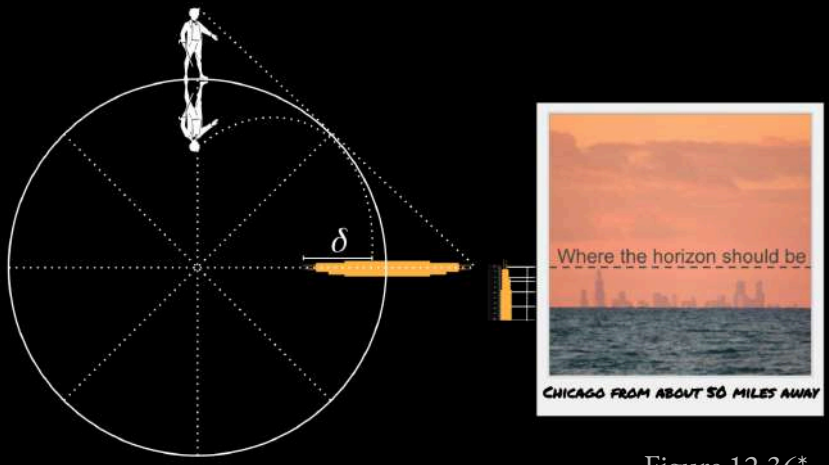


Figure 12.36*

The above diagram is largely responsible for convincing tens of thousands of people in the 21st century that the Earth may be flat! Of course, we know that's not the case.

Or is it?

Pilot, Ron Wagner, has been quoted saying*:

> "*On clear nights, going east somewhere around Oklahoma City and Tulsa, I have seen the lights of Dallas (180 miles) and Houston (420 miles) in one direction and Kansas City (300 miles) and St Louis (460 miles) in the other direction, all at the same time*."

The pilot claimed to witness a geometrically impossible scenario with respect to the current model.

What he saw should only be possible from an altitude of 26 miles high, but his account is taken from a plane that never flies more than 10 miles above sea level! A discrepancy of 61.5%.

With these two pieces of data, we can conclude that the **actual path that light takes** disagrees with the **currently accepted model's prediction** dramatically at low altitudes and reduces that discrepancy at greater altitudes; eventually agreeing that the most you can see in any direction is 6,250 miles, or 25% of the way around the Earth, at the highest altitudes.

The red line in the diagram shows the altitude of the horizon predicted by the old model, whereas the blue line represents our prediction of how a level beam of light should increase its altitude from Earth's surface.

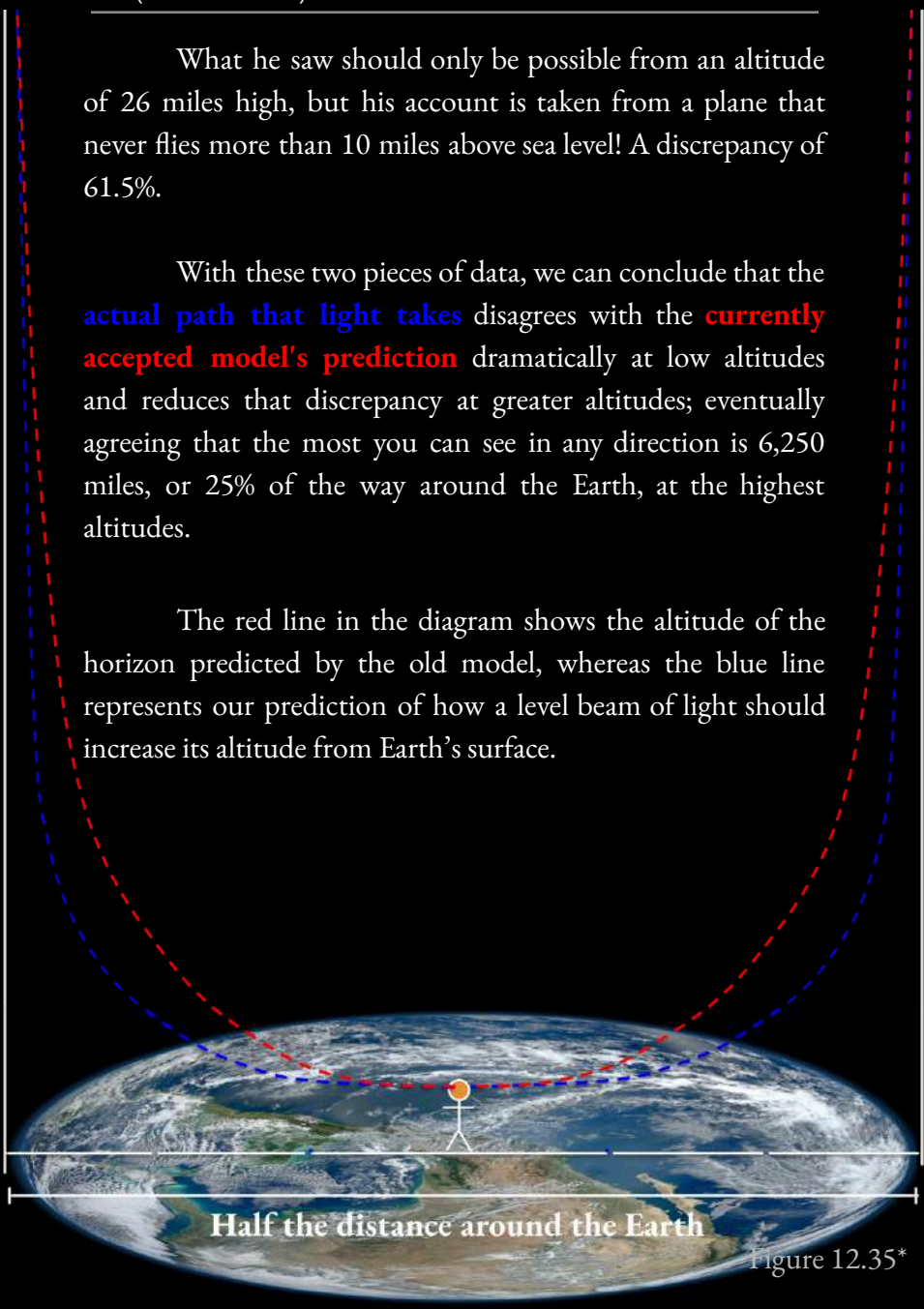


Figure 12.35*

Chapter 13

The 5th Dimension

One **Dimension**

Is simply a ***number-line****.*

A **Coordinate**

Describes the position, ***x,*** *along any* ***dimension****; that is, x can be any number on a* ***number-line****.*

A **one dimensional** **coordinate system** has just **one number-line**, also known as an **axis**; like the one shown below.

Figure 13.1

A **two dimensional** **coordinate system** is two perpendicular axes; which make up a plane such as the floor.

You can describe any point on the plane by your two coordinates along the **x** and y axes in the form **(x, y)**; as shown on the next page.

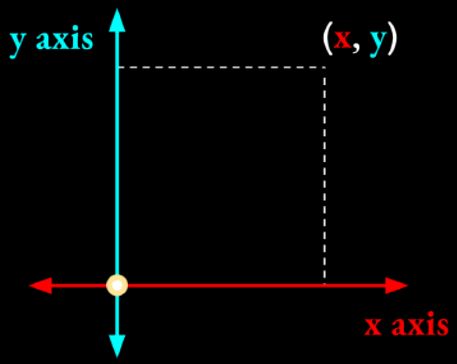


Figure 13.2

A **three dimensional coordinate system**, or **3D space**, uses the **x** and **y** coordinates to describe a spot on the ground and then uses the **z-coordinate to** describe the altitude above that spot in the form: **(x, y, z)**.

Space

*A **3-dimensional** coordinate system*

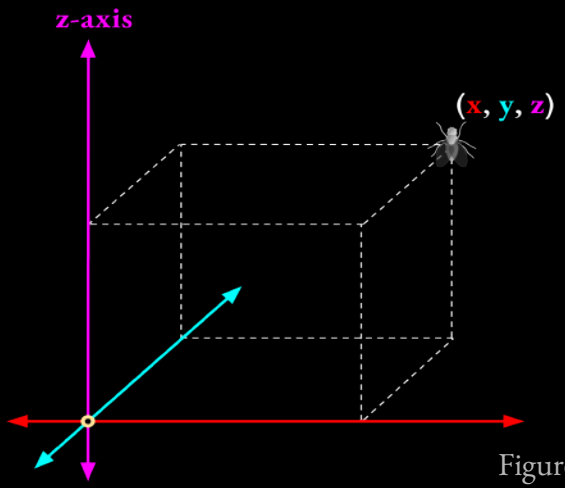


Figure 13.3*

The **4th dimension**,

Time, ***t***

is a sequence of timestamps that number the order in which things happen.

Imagine the 4th dimension as being like a strip of film, whereas the first 3 dimensions are captured as an image on each frame; **t** is *subscripted*, like this, with the same number as each moment's **x**, **y**, and **z** coordinates; as shown below.

"t_0, t_1, t_2, ... t_n"

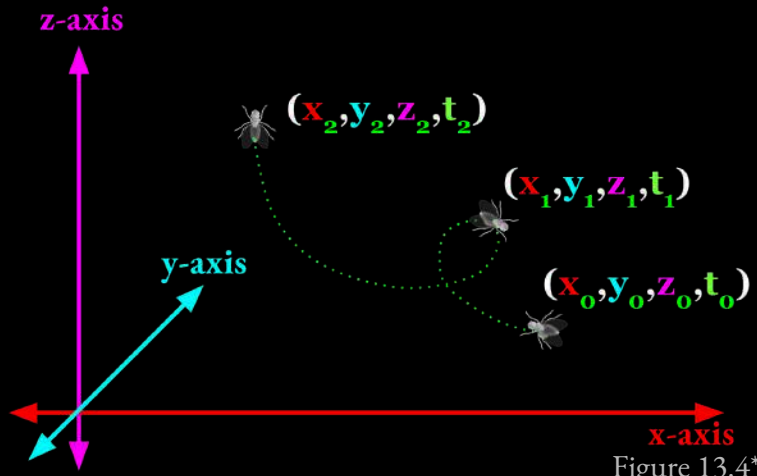


Figure 13.4*

Before we introduce the 5th dimension, let's precede its definition with one more description of space.

Imagine that there are two people standing some distance apart from each other. Directly above each of them is a monkey in a tree. Hundreds of miles above, a satellite is in orbit. It passes over the same x and y coordinates as the men and the monkeys below; therefore, it also travels the same distance as between the pairs of lifeforms below.

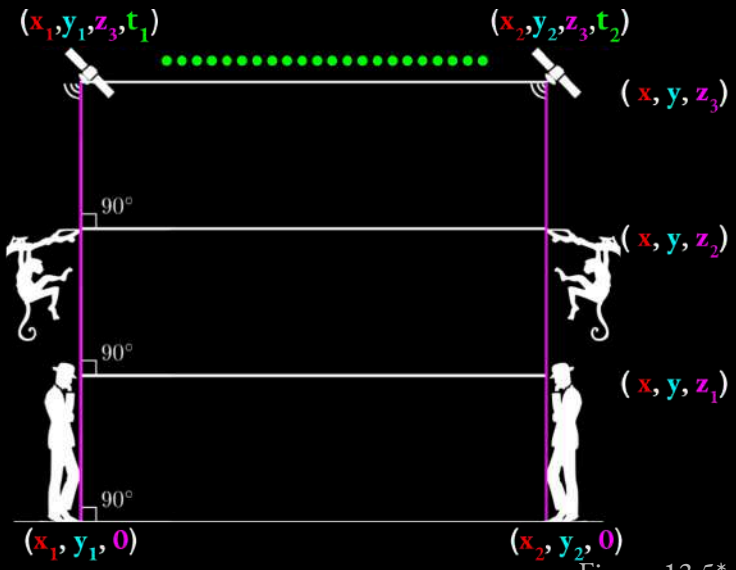


Figure 13.5*

The **5th dimension**

Makes the first 4 dimensions act as if there is an infinite amount of square space above Earth's Surface

Suggesting that as long as the x and y coordinates are the same, *you can increase the z coordinate to any height and the distance between them will stay the same*

On a spherical surface, you would not think this is true.

Figure 13.6*

You can clearly see that the heads of these very tall people should have nearly *twice the distance between them* as their feet (when measuring parallel to Earth's surface).

Since our model is essentially just the old model turned inside out, then our's may even suggest that vertically aligned objects are not equal distance apart; but that their heads are *closer together* than their feet.

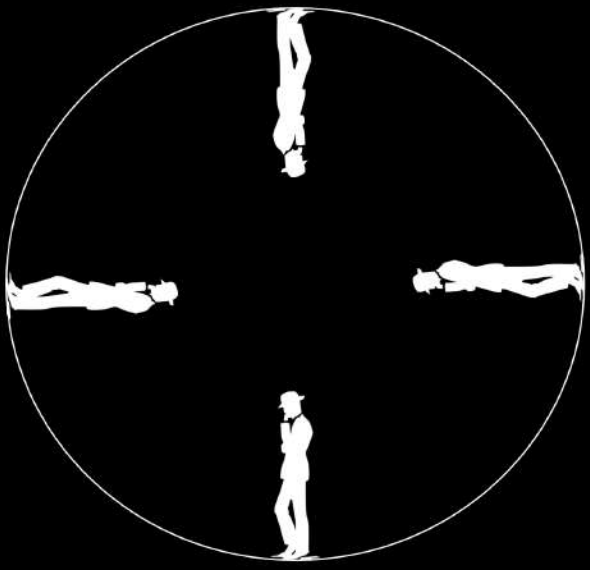


Figure 13.7*

Considering just the physical shape of our model, that may seem true; however (contrary to both models), the 5th dimension does indeed make it so that their heads are the same distance apart as their feet.

Here's how:

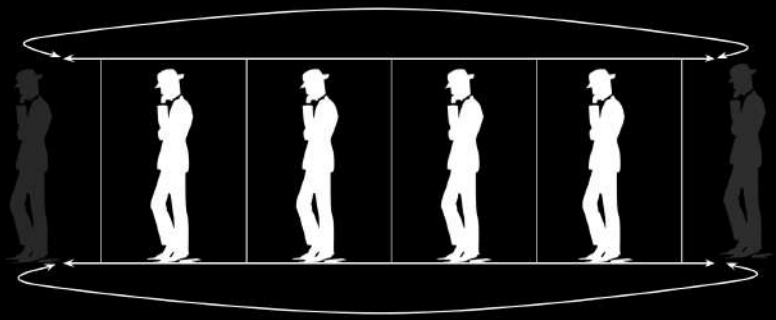


Figure 13.8*

The circumference of a circle depends on its **radius**; which, in our model, describes the z-axis that goes from any location straight to the center of the Universe.

The following diagram illustrates that if the radius of a circle is reduced by any factor (denoted by the greek letter "delta"), **δ**, then the circumference must also be reduced by that same factor, **δ**, as well.

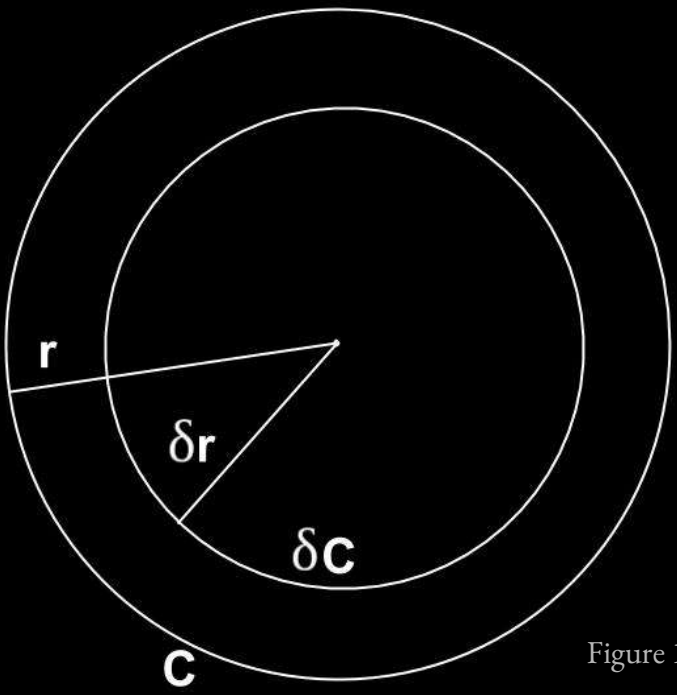


Figure 13.9

The circles for **any degree of longitude** and the zeroth degree of **latitude** (known as the **equator**) are about 25,000 miles in circumference.

Which, based on simple geometry, means the radius of these circles would be about 4,000 miles long.

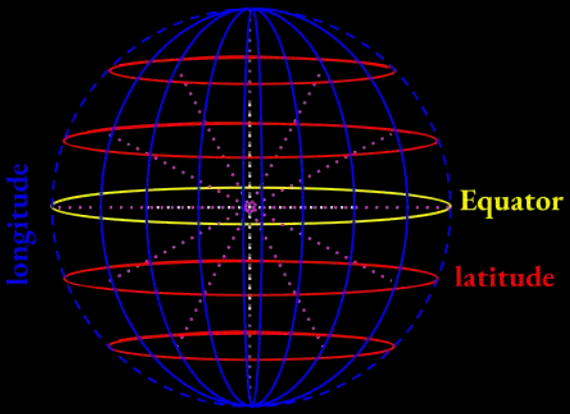


Figure 13.10

So, why does the radius appear to be infinite? We mentioned earlier that space and time both depend on the speed of light, **c**.

Recall Maxwell's law of physics which states that speed is the product of frequency and wavelength. That is,

$$c = f\,\lambda$$

If ***c*** is reduced by a factor of ***x***, then the other side of the equation must be reduced by a factor of ***x*** as well.

$$c\,x = f\,\lambda\,x$$

Since there is only one term on the left and two terms on the right, we can split the ***x*** into equal parts to share it amongst each term on the right side. So,

$$x = \sqrt{x} * \sqrt{x}$$

Such that,

$$c\,x = (f\sqrt{x})*(\lambda\sqrt{x})$$

So, if the speed of light is reduced to *half* of its original value, then the wavelengths and frequencies are each reduced by a factor of "*the square root of a half*"; written as $\sqrt{.5}$ and equal to about .7071.

$$.5\,c = (.7071\,f)*(.7071\,\lambda)$$

Thus, as you travel inward *space shrinks* and the 4th dimension, *time, ticks by less frequently*. Although the inner circles appear smaller in the following diagram, the 5th dimension causes them all to be equal in length to an observer anywhere inside.

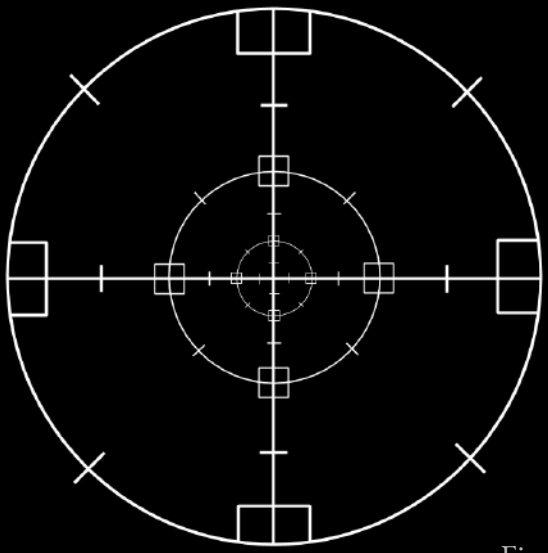


Figure 13.11

As you get closer to the center, space shrinks with you inside of it, so you shrink too! It happens in such a way that the horizontal distance between vertical lines is always the same no matter what your altitude is. In other words, you always take up the same portion of the circle!

Therefore, it will always measure out to be roughly 25,000 miles as you go around the world whether you're at sea level, in an airplane, or even in a satellite station!

Now, you may ask: *"If our model says that vertical lines are parallel does that suggest that the Earth's surface is actually flat?"*

In 3-dimensional space, yes. Our model directly suggests that the surface of the Earth, for all experimental purposes, acts flat.

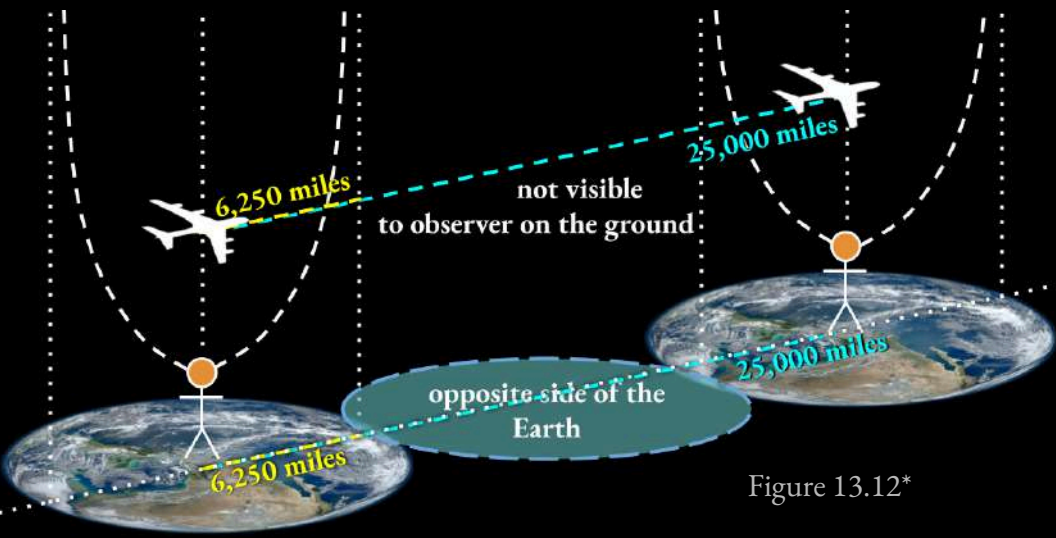


Figure 13.12*

Since the high and low paths are the same distance, then the surface has no 3 dimensional curvature and can be considered flat.

So, how does the 5th dimension make the 3D world flat and space infinite?

Frequency

*Denoted as **f**; depends on the amount of time, **t**, that it takes for something to occur.*

Those two numbers have a relationship, as follows;

$$f = 1 / t$$

If the frequency, $\boldsymbol{f}$, is changed by a factor of delta, $\boldsymbol{\delta}$, then the following equation is rearranged as:

$$f\boldsymbol{\delta} = \boldsymbol{\delta}\,(1 / t)$$

$$f\boldsymbol{\delta} = \boldsymbol{\delta} / t$$

$$f\boldsymbol{\delta} = (\boldsymbol{\delta} / \boldsymbol{\delta}) / (t / \boldsymbol{\delta})$$

$$f\boldsymbol{\delta} = 1 /(t / \boldsymbol{\delta})$$

We can substitute $\boldsymbol{f * \delta}$ with what we call *t-prime*, **t'**.

$$f\,\boldsymbol{\delta} = 1 / t' \qquad\qquad t' = t /\boldsymbol{\delta}$$

The question now is, *what is* **t-prime** (t')?

Dilated Time

Also known as: "time dilation"

Was first conceived by Albert Einstein in his theory of Special relativity. He said if you travel really fast, then your time slows down and space flattens in the direction in which you're traveling; assuming that the apparent speed of light never changes for any observer.

To dilate is to stretch. So we can say that time stretches while delta, **δ**, becomes smaller. In other words; each second takes longer to pass by as the ticking of time becomes less frequent.

As observers in 3D space, however, we cannot sense the dilation of time. we feel each second pass by normally whether we're on Earth or in deep space.

If we were able to experience a portion of our lives at a significantly high altitude, then we could witness the passing of thousands of years on Earth while we live through dilated time in deep space. If we directly measure the speed of light anywhere in space, it would still say that the speed is 186,000 miles per second; which is the constant, ***c***.

However, this reading wouldn't be the true speed of light because as time slows down and space contracts, the measurement device would be undergoing time dilation and

space contraction as well; causing it to read a smaller increment of space at a slower rate; therefore giving the illusion that the speed of light never changes.

The nature of light hides the true speed of light. We can, however, detect this discrepancy indirectly. By sending one of two synchronized clocks into space, the one that increases its altitude and (eventually) comes back down should show that less time has passed compared to the one on the ground.

So, if a spaceship of astronauts takes off directly away from Earth, then, because of time-dilation, their reality will process slower than everyone else on Earth and, thus, they will age slower.

As the astronauts make their way into space, live transmissions from home on Earth will play faster. Eventually the live feeds will be playing so fast that the crew will not be able to understand what the radio transmitters are saying.

To the crew at ground-control, they'll experience the opposite effect; that is, they will hear the astronauts speak more and more slowly.

Eventually, it will appear that the astronauts have gotten frozen in some firmament deep in space that seems to slow down time and stretch radio signals.

As the astronauts live their lives together, interactions between them are as normal as it is on Earth. Once they turn

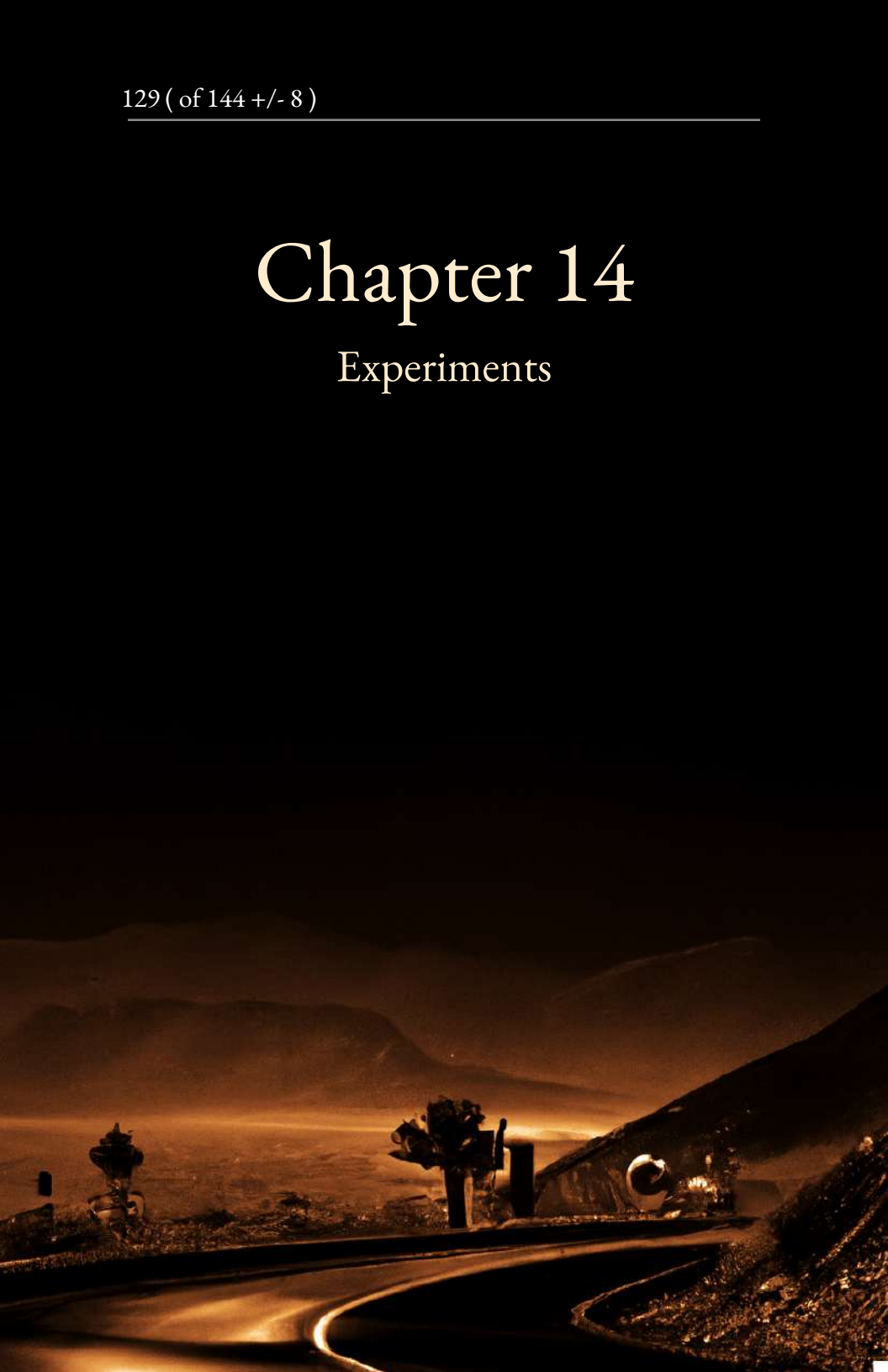
around and head back towards Earth, their communications will return to normal speed (assuming that the space program is still being funded).

Although they would have experienced the passing of perhaps 20 or 40 years in their own reality, they could return to an Earth that is 1,000 years older than the one they left!

If we don't want to wait 1,000 years on Earth to prove this, then there are other experiments that we can perform to prove that our hypothesis is true.

Chapter 14

Experiments



Let's now consider two experiments that have the potential to support everything we've discussed so far.

The first one is reanalyzing a one-hundred year old experiment; the second is an experiment of our own (that we have yet to carry out).

Earlier, we said that Einstein's model is based on the assumption that the speed of light is constant in all frames of reference while in a vacuum; implying that light will travel in a straight line unless some applicable phenomenon changes its direction.

In the current model, the Earth travels around the Sun as the Sun travels around the Galaxy. Furthermore, the old model suggests that our galaxy is just like the billions of other galaxies.

In 1964, **Robert Wilson** and **Arno Penzias** discovered background radiation coming towards us evenly from all regions of the sky that lead to the hypothesis that everything in the Universe is expanding away in all directions.

So, if everything is moving, then that implies that the Earth must be moving through space, but how fast exactly?

About 100 years ago, **Albert Michelson** and **Edward Morley** sought to answer that question with their...

The **Interferometer Experiment**

Their logic was:

Imagine that we're standing next to a flowing river and making ripples in the water.

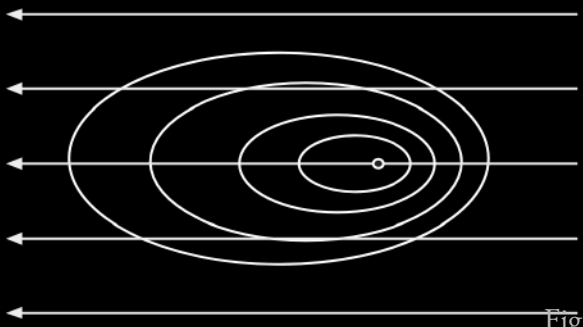


Figure 14.1

Since the river is flowing and we are standing still, we can say that the water, or the *medium,* is moving relative to us. Since the medium is moving, the ripples will be closer together going up-stream and more spread out going down-stream. This is called:

The **Doppler Effect**

Suppose that photons of light are just electromagnetic ripples traveling through the sea of aether. If light-waves travel like mechanical-waves then we should be able to use this logic to detect the motion of the Earth relative to the aether just like

we can detect the motion of the water relative to us; by seeing how the ripples of light change speed in various directions.

The diagram below shows how an interferometer splits a beam of light into two directions through a half-transparent, 45-degree mirror.

The beam then reflects back off of two mirrors at either end, recombining back at the same half-mirror in the middle, sending the two beams out to the observer; as illustrated below:

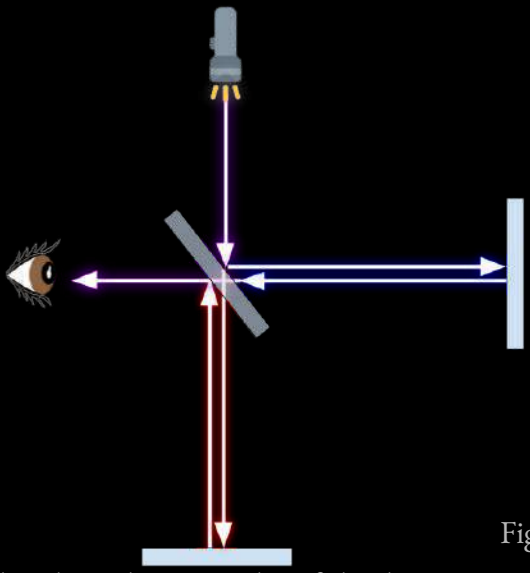


Figure 14.2*

Their hypothesis was that if the device is standing still, then the beams of light would recombine perfectly, but if you were to move the device along either path, then the light would take different times to travel down each path and therefore recombine imperfectly; or with *interference*.

In every case, their experiment revealed a perfect recombination of the beams of light, suggesting that the Earth wasn't moving at all; at least, relative to the aether.

The problem with their experiment was that even though it was rotating, their detector always stayed level with Earth's surface; which they noted shouldn't have made a difference since they assumed the Earth is a sphere suspended in space.

In 3D space, the earth is suspended in a grid of 3 square axes. Although it seems level as an observer standing on the earths surface, its circular nature means even though you're walking in a straight line on earth, you're actually walking in a circle through space.

Unlike the current model, our model suggests that the Earth's surface is actually parallel with the plane created by the first and second dimensions; x and y. Although the path around the Earth is still a circle, the 5-dimensional model suggests that the x and y axes are also circles and that it is actually a straight line in 3D reality (what an observer sees).

The Z axes in the 3D model become radii in our inside out model. So under level conditions, the interference pattern on the interferometer should come back perfectly aligned, which it always has. So, what happens if we turn it vertical?

In contrast, our hypothesis suggests that if the interferometer were to be rotating on a vertical plane, then the interference pattern would be distorted due to the nature of light slowing down, time dilating, and lengths contracting along the z-axis.

Had Michelson and Morley turned their apparatus vertical 100 years ago, Einstein would have never had to create relativity.

Fortunately for us, in 2009 Professor **Martin Von Grusenick** conducted a vertical variation of that experiment and posted it on YouTube for us to see! Below is a link to that video:

https://youtu.be/7T0d7o8X2-E?t=3m06s
(starts at vertical experiment; watch from the beginning to see both)

At first, Prof. Grusenick repeats the original experiment by rotating his interferometer along the horizontal plane: the pattern remains still while the device spins parallel to the Earth's surface.

Then, he rebuilds his apparatus so that it rotates vertically instead of horizontally. As the device rotates up and down, the interference pattern shifts significantly!

The significance of this pattern shift is it shows the presence of an aether and it shows that the detectable interference is only in the up and down direction.

Defenders of relativity would say that the gradient pressure of the atmosphere is responsible for the change in the speed of light. So, this experiment must be done in a vacuum chamber to eliminate that variable. (We have yet to complete said experiment)

We can show that the same principle still exists on a much smaller scale while in a vacuum chamber that we ourselves will build.

The absence of any gas particle eliminates the possibility of light changing direction due to a change in air pressure. As we mentioned before, according to the current model, if there is any bending of light in the vacuum of space it should bend towards a massive object.

At the time of publishing this book, I have made one attempt to conduct this experiment in a vacuum and have noticed that removing the air does in fact remove most of this shifting effect. However there is still some shifting observed which demands more sophisticated equipment to properly isolate. For now, let's move onto our next experiment; the:

Mirage

When light appears to be coming out of the ground; especially on long and flat surfaces.

The pink crest in the diagram below mimics the surface of a road going over a bridge. The white dotted line is perfectly straight and level.

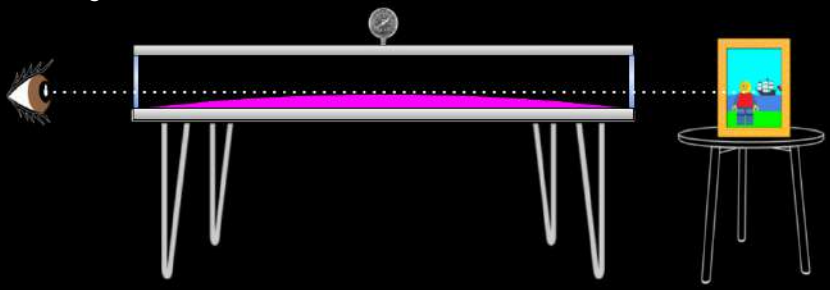


Figure 14.3*

By looking through our vacuum chamber it would appear that the light sort of mirrored itself as it eclipses the pink hill.

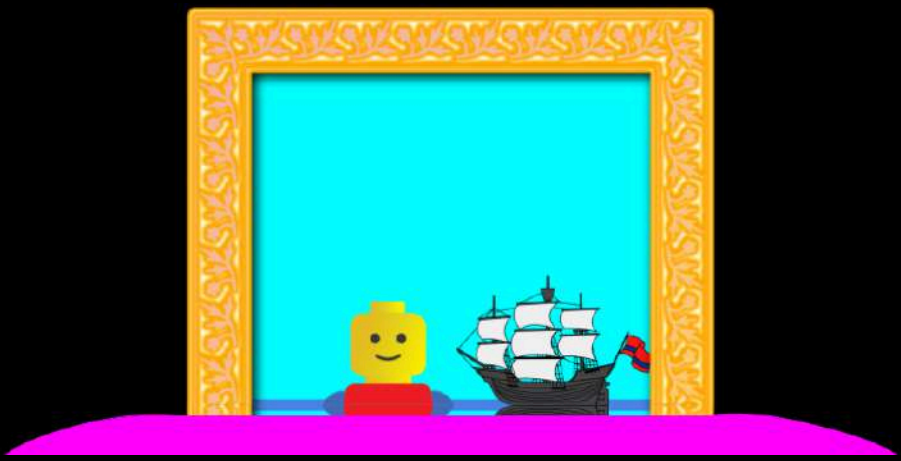


Figure 14.4*

The bright blue line curves down from the portrait, apexes between the crest and the observer and finally curves up towards the observer. This is the path that light takes to create a mirage.

The following diagram illustrates this principle in a more exaggerated way to show the difference between the **straight line**, the **curved path that light actually takes**, and the **trajectory of the apparent mirage**.

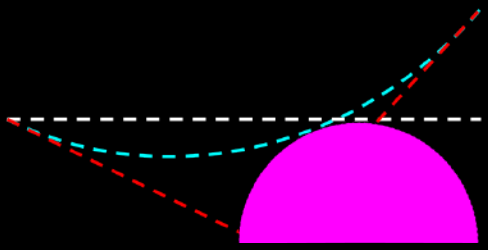


Figure 14.5

With a fundamental understanding of how a mirage works, we can now speculate a visual prediction as to what we will see as we look through our vacuum chamber.

Once again, if you're reading this, then the author has not yet performed the experiment. Future editions of this publication will contain updated results.

Until then,

Thank you for your support.

-Doug

Afterword

The scientific community openly acknowledges that our current theories about the universe are incomplete. This book is a part of the broader quest to fill those gaps and challenge our understanding of the cosmos.

Over the past decade, my journey into this exploration has highlighted an intriguing trend. As Dr. Stephen Hawking stated in 2001, "The greatest enemy of knowledge is not ignorance: it is the illusion of knowledge." Similarly, Daniel Boorstin in 1984 remarked, "The [truth] is the savior, as long as you don't try to jam it into a preconceived pattern."

The concept of a concave Earth has intrigued thinkers since the 1800s. Despite its long history, it remains on the fringe of scientific thought, primarily because it is a radical departure from established beliefs. However, this book aims to present this idea in a new light, supported by observations and experiments that invite further investigation.

Scientific progress thrives on questioning and re-evaluating what we think we know. By exploring unconventional ideas, we open the door to new possibilities and advancements. This work is a call to maintain an open mind and continue seeking knowledge, even when it leads us down less-traveled paths.

Thank you for joining me on this intellectual journey. Your support is crucial, not only for the dissemination of these ideas but also for encouraging ongoing research and exploration.

Index

Glossary

Aether: A historical concept referring to a medium through which light travels.

Antimatter: Subatomic particles that are oppositely charged to normal particles; combining with matter leads to annihilation.

Atomic Model: A theoretical representation of the structure of an atom.

Big Bang: The theoretical event marking the origin of the universe, characterized by an explosive expansion of space.

Big Implosion: A concept introduced in the book describing the collapse of matter following the Big Bang.

Centrifugal Force: The apparent force that pushes an object outward when it is moving around a center.

Concave Earth: The hypothesis proposed in the book suggesting the Earth's surface is a concave container holding the universe inside it.

Electrons: Negatively charged subatomic particles that orbit the nucleus of an atom.

Entropy: A measure of disorder or randomness in a system.

Gravity: The force attracting objects towards each other, traditionally described by Newtonian and Einsteinian physics.

Neutrons: Subatomic particles with no charge, found in the nucleus of an atom.

Planets: Large celestial bodies orbiting a star, specifically discussed in the context of their formation and structure.

Proton to Mass (PM) Ratio: The percentage of particles in the nuclei that are protons, determining the element's properties and behavior.

Protons: Positively charged subatomic particles found in the nucleus of an atom.

Speed of Light: A central theme in the book, suggesting that light does not travel at a constant speed and its behavior is crucial to understanding the universe.

Spacetime: Einstein's concept describing the four-dimensional continuum that combines the three dimensions of space with the dimension of time.

Springs of Aether: The hypothetical springs introduced to explain the forces acting on subatomic particles in the book.