# CHAPTER 1

# SRT/PFSRT

## 1.1 Introduction

For an overall review of Einstein's relativity theories with respect for the neophyte, the book *Relativity For The Layman, a Simplified Account of History, Theory* and *Proofs of Relativity* by James Coleman, The New American Library of World Literature Inc., is recommended, since in order to comprehend this book, one must have at least some rudimentary knowledge of both Einstein's Special Relativity Theory (SRT) and General Relativity Theory (GRT).

In addition, before evaluating Chapter 1, for those individuals who have little experience with SRT, it would be beneficial to peruse Appendix A of this publication, which explains the reasoning behind Einstein's SRT. Furthermore, the websites listed below would also be highly helpful.

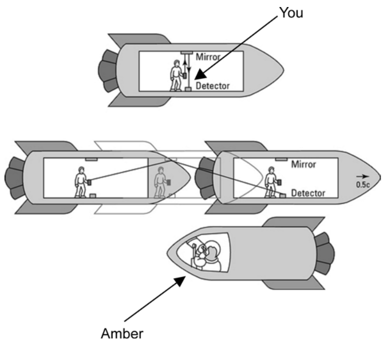
”Understanding Einstein's Special Theory of Relativity”

”Special Relativity Explained In Under Three Minutes”

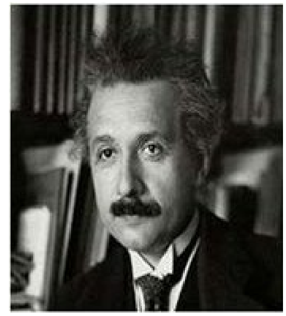
”Theory Of Relativity Explained In Seven Minutes”

A brief section of Appendix A is now presented below (from Andrew Zimmerman Jones and Daniel Robbins authors of *String Theory for Dummies*):

• *Einstein's theory of special relativity created a fundamental link between space and time. The universe can be viewed as having three space dimensions up/down, left/right, forward/backward, and one–time dimension. This four–dimensional space is referred to as the space–time continuum.*




*Credit: Daniel Robbins*



Albert Einstein

**Figure 1.1** Spaceship Model for SRT [Fair Use]

- *If you move fast enough through space, the observations that you make about space and time differ somewhat from the observations of other people who are moving at different speeds.*
- *You can picture this for yourself by understanding the thought experiment depicted in Figure 1.1. Imagine that you're on a spaceship and holding a laser so that it shoots a beam of light directly up, striking a mirror you've placed on the ceiling. The light beam then comes back down and strikes a detector.*
- *(Top) You see a beam of light go up, bounce off the mirror, and come straight down. (Bottom) Astronaut Amber sees the beam travel along a diagonal path.*
- *However, the spaceship is traveling at a constant speed of half the speed of light (0.5c, as physicists would write it). According to Einstein, this makes no difference to you; you can't even tell that you're moving. However, if astronaut Amber were spying on you, as in the bottom of the figure, it would be a different story.*
- *Amber would see your beam of light travel upward along a diagonal path, strike the mirror, and then travel downward along a diagonal path before striking the detector. In other words, you and Amber would see different paths for the light and, more importantly, those paths aren't even the same length. This means that the time the beam takes to go from the laser to the mirror to the detector must also be different for you and Amber, so that you both agree on the speed of light.*

With reference to the above excerpt, if the speed of light is (c) for both observers, then time and distance must differ with respect to you and Amber in order to maintain the speed of light at (c); (c) = distance/time. So if (c) remains constant, then distance/time must change proportionally. Referring to this example, the definition of (c), as well as the concept of distance, are both a function of "time." And other than a mathematical equation, no rational reason or physical process is given as for why, relative to the observer, both distance and time change as a function of a constant (c), essentially, no underlying cause and effect is presented. Please commit this example to memory, for it will be referred to at the end of this chapter from a different perspective.

There are two postulates of Einstein's SRT. The first, with respect to inertial motion, is that all is relative; therefore, the laws of physics are the same in all inertial reference frames. And second, the velocity of light is always (c) in empty space (= (c) relative to the observer of SRT = regardless of the observer's inertial velocity).

From these postulates, Einstein then deduced that with respect to the observer, as an object increases its velocity, its inertial mass increases, its "rate of time" slows down, and distance in the direction of motion decreases (including the physical length of the object in the direction of motion). In addition, Einstein assumed the ether as nonexistent.

In contrast, this alternative SRT, now defined as the **Preferred Frame Special Relativity Theory (PFSRT)**, posits the presumption of the ether, the preferred frame for the speed of light of (c), with very similar, although not identical, outcomes. Listed below are the four basic assumptions of PFSRT.

## 1.2 Assumption of the Structure of the Universe

Please refer to Figure 1.2 below and the following discussion. Figure 1.2 depicts the expansion of the universe over time. This is a 2D representation of a 3D universe.

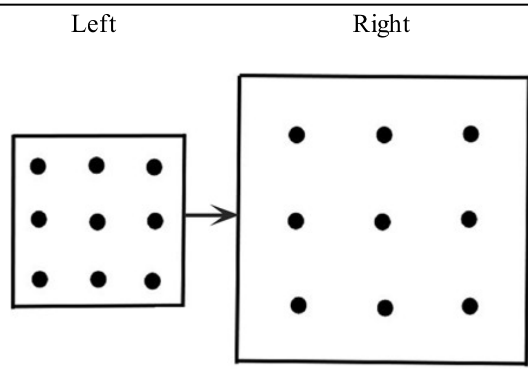



**Figure 1.2** Expansion of the Universe

- *The ether (box) of the universe expands from left to the right. As a result, the galaxies (black dots) located within the box then separate from one another. However, the galaxies still remain at rest with the ether. Take note with reference to Figure 1.2 that the gravitational fields of the galaxies are ignored. This will be dealt with later on in Chapter 2 (GRT).*

The box on the left is smaller compared to the box on the right. The boxes represent the space (ether) of the universe. As shown above, the change in size from left to right represents the expansion of the universe over time. The black dots located within the box portray individual galaxies. They are all at rest with space, or by the terminology used in this book, the ether. For now, assume the galaxies are not associated with their own gravitational fields. This will be discussed later on in this publication in Chapter 2.

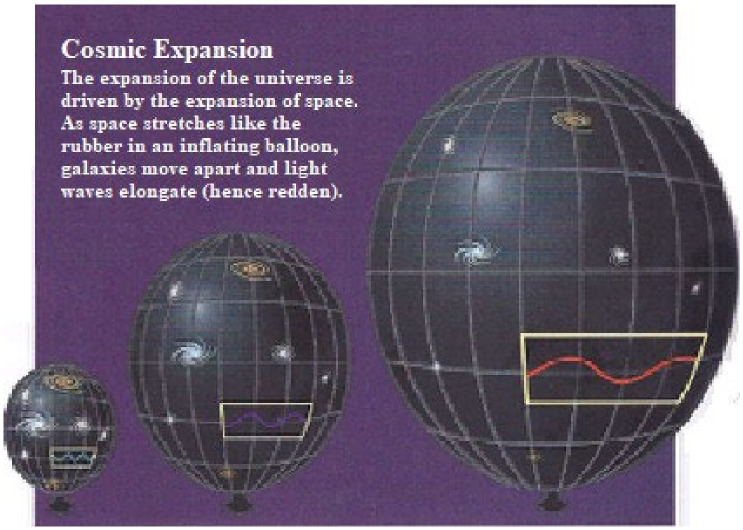
Notice, regarding Figure 1.2, as the ether or space expands in the areas between the galaxies (dots), the universe also expands. Nevertheless, the galaxies still remain at rest with the ether. With reference to this expanding ether frame, the velocity of light is fixed at (c). This basic model is the preferred frame of the universe, again for future reference, defined as the **Preferred Frame Special Relativity Theory (PFSRT)**.

Observe also, as the universe expands, from the perspective of an observer located within each galaxy at rest with the ether, the further a galaxy is initially from the observer, the faster is its movement from that observer. This applies to any observer associated with any galaxy; so each observer perceives the same effect. In addition, as the ether expands (space of universe expands), it then stretches the wavelength of the light traveling within it at (c).

Consequently, the further a galaxy is from an observer, then for that observer, the greater the redshift of light from that galaxy. This matches the redshift of galaxies observed by astronomers; the greater the redshift, the greater its distance with respect to the observer on Earth.

For further clarification, here is another analogy. See Figure 1.3.

The expansionary principle is illustrated below:




*Michael S. Turner, "Origin of the Universe," Scientific American Special Collector's Edition: Extreme Physics, Probing the Mysteries of the Cosmos, August 2013, 39*

**Figure 1.3** Balloon Expansion [Fair Use]

*This is analogous to Figure 1.2 but now with reference to the surface of a balloon.*

This example is the classic illustration, whereby the universe is depicted as limited to the surface of a balloon, with the galaxies painted on its surface (2D illustration representing a 3D universe).

As the balloon is blown up, it expands; the galaxies spread further and further apart from one another. Nevertheless, the galaxies still remain at rest with the balloon's surface. In other words, as space or the ether expands (the surface of the balloon), the universe also expands, but the galaxies remain at rest with space/ether (surface of the balloon).

The fundamental distinction between PFSRT versus SRT is that this new theory posits that space is the ether, **the medium where light travels within it at a constant (c)**. In contrast, SRT denies it exists; moreover, (c) is constant in empty space (c relative to the observer).

## 1.3 Assumption of Inertial Mass

From The Physics Classroom online comes this classical definition of inertia: *The resistance an object has to a change in its state of motion. In other words, it is the tendency of objects to keep moving in a straight line at constant linear velocity.*

Newton's first law of motion states: *An object at rest stays at rest and an object in motion stays in motion with the same speed and in the same direction unless acted upon by an unbalanced force. Objects tend to "keep on doing what they're doing." In fact, it is the natural tendency of objects to resist changes in their state of motion. This tendency to resist changes in their state of motion is described as inertia.*

So, the inertial mass of an object is defined as its resistance to acceleration by an applied force.

Einstein's SRT presumes that the inertial mass of an object, which is a group of associated atoms, is the intrinsic property of the object. What is more, no other factor is involved.

Alternatively, PFSRT differs considerably. It postulates that the ether is the entity, which resists an object's acceleration, although not its velocity. In addition, each of the elements elicits a different degree of resistance (the more the atomic weight the more the resistance). In other words, an object's degree of resistance to its acceleration by force from the ether is defined as its inertial mass.

This new theory →also← posits: The greater an object's velocity with respect to the ether of PFSRT, the greater then is the resistance to its further acceleration derived from that ether (Lorentz transformation equation). This is to some extent, at least superficially, analogous to an exponential function. However, one important different aspect to acknowledge is that the velocity of the object cannot exceed the speed of light.

The mathematical equation that expresses this concept is called the Lorentz transformation, which is depicted below followed by a graph of that equation.

**Lorentz Transformations**

See Lorentz equations below and the following discussion.

$$B(\mathbf{v}) = \begin{bmatrix} \gamma & -\gamma v_x/c & -\gamma v_y/c & -\gamma v_z/c \\ -\gamma v_x/c & 1+(\gamma-1)\dfrac{v_x^2}{v^2} & (\gamma-1)\dfrac{v_x v_y}{v^2} & (\gamma-1)\dfrac{v_x v_z}{v^2} \\ -\gamma v_y/c & (\gamma-1)\dfrac{v_y v_x}{v^2} & 1+(\gamma-1)\dfrac{v_y^2}{v^2} & (\gamma-1)\dfrac{v_y v_z}{v^2} \\ -\gamma v_z/c & (\gamma-1)\dfrac{v_z v_x}{v^2} & (\gamma-1)\dfrac{v_z v_y}{v^2} & 1+(\gamma-1)\dfrac{v_z^2}{v^2} \end{bmatrix},$$

It is not necessary for the novice to understand the actual equation, but it is essential to comprehend the graph of the equation as shown below.

A graph of the Lorentz transformation equation for mass vs. velocity is shown in Figure 1.4 below. The inertial mass is represented by vertical axis and the velocity, from left to right, up to the speed of light is depicted by the horizontal axis. The increased relativistic mass as a function of velocity is much more pronounced as the object approaches the speed of light (graph is skewed to the right). Furthermore, the object's velocity cannot exceed the speed of light because of infinite relativistic mass.

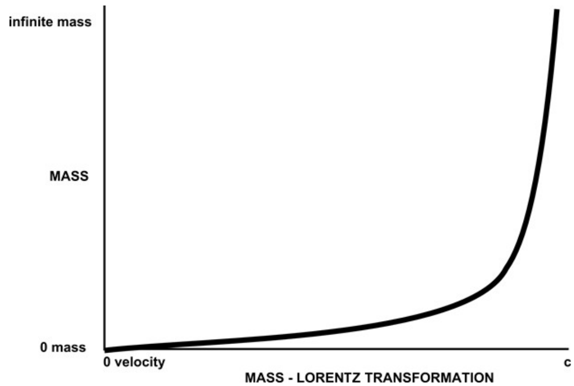



**Figure 1.4** Mass vs. Velocity

In his specific case, the author's use of the Lorentz transformation function (LTF) only refers to how inertial mass increases as the object's linear velocity increases relative to ether. SRT's LTF equations cannot describe this new theory. Actually, the graph alone best depicts this new concept, however, not the above LTF equation which is specific to only SRT. For future reference, the concept depicted by this graph will be defined as the **Lorentz transformation function (LTF)**. Again, the graph is skewed and only superficially similar to an exponential function, but is not, in fact, the latter of which doubles at a set constant rate.

Nevertheless, for the benefit of the novice and for simplicity of visualization, the author has decided to define/picture it this way. Because, in the author's opinion, the novice will understand exponential function better than Lorentz transformation function, even though exponential function is technically not correct. So for future reference, the letters **LTF** refers to the Lorentz transformation function concept, specifically the LT curve as depicted in Figure 1.4.

For example, compared to an observer at rest with the PFSRT, an object at a high velocity relative to the PFSRT, exhibits increased inertial mass. In addition, as illustrated in the above graph, when the object's velocity increases linearly, again relative to the PFSRT, its inertial mass increases by an LTF. Again, the velocity of the object cannot exceed the speed of light as a consequence of infinite relativistic inertial mass. **Regarding the new PFSRT, all is not from the observer's reference frame (SRT), rather from the frame of the ether at rest (PFSRT).**

This is somewhat, and the author emphasizes somewhat, analogous to a boat being propelled in water: the greater the velocity of the boat in the water, the more force needed to further increase its velocity (acceleration), in this case, as an exponential function. Yet, there is a difference: water resists both the velocity and acceleration of the boat, whereas the ether only resists the acceleration of the object but not its velocity.

For review, see Figure 1.5 below and the following caption. →Take note when reviewing this figure that an observer is also an o bject←. This connection will be applied/relevant later on in this chapter.

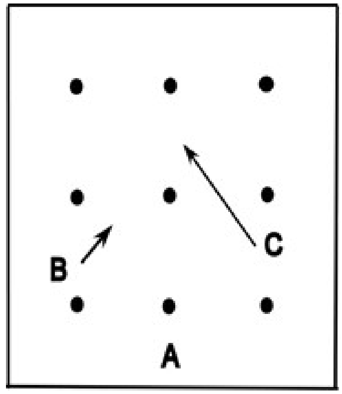



**Figure 1.5** Rest Mass, Inertial Mass, and Relativistic Inertial Mass

- *Assume A, B, and C are identical objects (observers). The box represents the ether of the universe (PFSRT). The dots portray individual galaxies.*

*The lengths of the arrows depict the relative velocities of objects (observers) B and C, (the longer the arrow the greater the velocity), whereas object/observer A is at rest, all relative to the PFSRT. An object/observer at rest with the PFSRT (A) resists acceleration derived from the ether. This is defined as the object's rest inertial mass.*

- *Alternatively, if an object/observer (B or C) possesses a velocity (arrows) relative to the PFSRT (B < C), then, as the velocity increases linearly (C > B), the resistance to its acceleration, again as a function of the ether, increases by an LT function. This is defined as the object's relativistic inertial mass (B or C).*
- *Once more the velocity of the object/observer is limited by the speed of light.*

## 1.4 Assumption of the "Rate of Time"

The great Aristotle thought time is fundamentally linked to change and movement. "Where there is alteration or movement, there is time, for everything that comes to be and ceases to be are in time."

In essence, time is the motion of matter through space; the latter word defined within this publication as the ether. You cannot describe time without motion, whether a clock, a pendulum, or an atomic clock (vibrations). In fact, all descriptions of time portray motion of matter through space, whether inertial or accelerated.

Therefore, if the ether slows the acceleration of matter, then it also slows the ensuing velocities derived from those accelerations. Thus, it determines the overall rate of motion, within a given inertial reference frame, or in other words, the "rate of time." Fundamentally, "time is just our counting of motion by comparing all motion to some repetitive motion, like the vibrating atoms of an atomic clock." (Lindner) So without motion, there is no time.

Accordingly, an atomic clock placed with B or C will have a slowing in the rate of its vibrating (acceleration) atoms compared to one positioned with A. This is because with respect to B and C, there is more resistance from the ether (C > B). In other words, from the perspective of A, the preferred frame, the atomic clocks placed with B or C, then will "tic" slower (C slower than B). This example illustrates the slowing in the rate of time from the frame of PFSRT.

As another example, assume you are absolutely alone in empty space (ether) where nothing else exists. One would assume that you would have the "notion of time" just by thinking. But if all the chemical reactions (accelerations), as well as the vibrations (accelerations) of the atoms and molecules in your body slowed, including your brain molecules and chemical reactions, then all movement in your frame slows down, including your "rate of thinking." You would not perceive this effect, as you exist within this slowing frame.

In contrast, someone else in a nonslowing frame, observing you, would notice it. In addition, if all motion in your inertial frame suddenly ceased, then for you, time stops. No motion. No time. For instance, in Hollywood science fiction movies, when time stops, all motion stops.

Now, given all of the above, as shown in Figure 1.5, when observer B or C (object) travels at a high velocity relative to the PFSRT, his/her relativistic mass increases, and his/her rate of time decreases. Additionally, as the object's (observer's) velocity increases linearly, the inertial mass increases by an LTF. And as the inverse, as the velocity increases linearly, because accelerations slow, the rate of time decreases (time dilation) by an LTF.

This last conception is shown and described below in Figure 1.6.

---

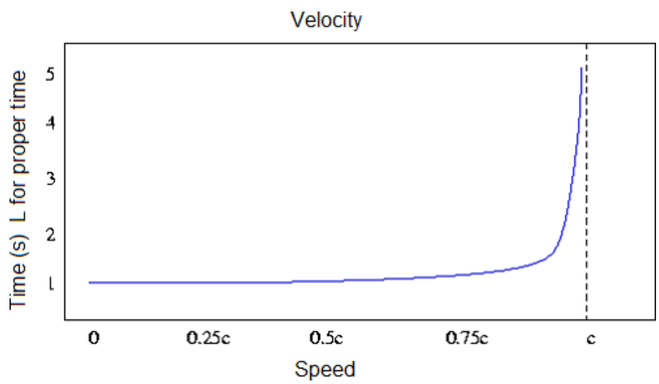



**Figure 1.6** Velocity vs. Rate of Time

- *The horizontal axis represents the velocity of the object as a percentage of speed of light relative to the PFSRT.*
- *The vertical axis depicts "time dilation" or the slowing in the "rate of time" as a function of velocity.*
- *This is a Lorentz transformation curve, defined in this chapter as an LT function. However, in this instance, rather than relativistic inertial mass as just described, it is relevant to "time dilation" or rate of time.*
- *Notice, the graph shown above is not really an exponential curve, which doubles at a constant set rate. However, it is presented by the author in this way so that the average individual can easily visualize and understand the basic idea.*
- *It is not necessary for the novice to understand the Lorentz transformation equation, but it is necessary for him/her to know the meaning of the graph.*

---

In his specific case, the author's use of the LTF only refers to how rate of time decreases as the object's (observer's) linear velocity increases relative to ether. SRT's LTF equations cannot describe this new theory. Actually, the graph alone best depicts this new concept, however, not the above LTF equation which is specific to only SRT.

As just described, this inverse mathematical relationship (inertial mass/rate of time) occurs because both are functions of the increased resistance to matter's acceleration derived from the ether. Obviously then, they are intertwined by that ether. This is the visual reason that shows why inertial mass and rate of time are always inversely proportional to one another.

Return again to the figure below.

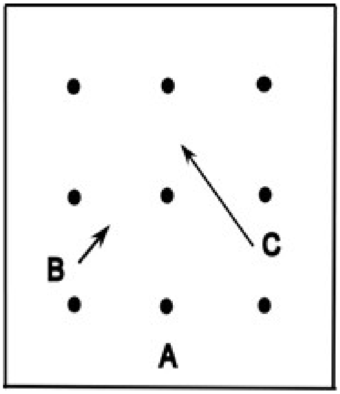



**Figure 1.7** Repeat of Figure 1.5

*Rest Mass, Inertial Mass, and Relativistic Inertial Mass*

For reinforcement, compared to observer A located at rest with the PFSRT, both observers B and C possess increased relativistic inertial mass, (as a function of their velocity relative to the ether of PFSRT) moreover C > B (C velocity > B).

Furthermore, our measuring sticks for evaluating time all involve repetitive motions, such as an atomic clock, and those repetitive motions are accelerations. Therefore, again, as a function of the ether, an atomic clock placed with B/C will have increased resistance to the acceleration of its vibrating atoms, and it slows down. For that same reason, an observer located at B/C will experience a slowing of all of his/her bodily chemical reactions, including thinking (time dilation).

→So compared to the frame of A (PFSRT), B and C possess not only increased relativistic inertial masses but also a slowing of their "rates of time" in the mathematical LTF as just presented←.

## 1.5 Distance, Velocity, and the Laws of Physics Versus Time

In order to understand this fourth assumption, acceptance of the extremely abstract following concept is paramount.

1. The concept of distance as determined by a physical measurement (e.g., ruler), now defined as the **measuring stick distance**, is a distinct idea from the **motion of distance** as a function of time (d = r x t); it is defined as the motion distance. Each is totally independent of the other; they are not the same thing. Essentially, the measuring stick distance is a universal constant with no time element (length of matter). But the motion distance is a direct function of the observer's rate of time (d = r x t) which, again, is an effect of motion. See Section 1.4 of this chapter.

2. By using **only** the motion distance and →not the measuring stick distance←, if the observer's rate of time changes, then his/her *perception* of distance also changes (d = r x t).

3. By using **only** the motion distance and →not the measuring stick distance←, if the observer's rate of time equally changes as in 2 above, then his/her *perception* of velocity also changes (v = d/t).

4. As a result, considering both of the above, by using **only** the motion distance and →not the measuring stick distance←, then the observer's new *perception* of velocity of light and his/her new *perception* of the motion counteract each other (d = r x t) (v = d/t) in such a way that the observer's *perception* of the velocity of light remains a constant (c) regardless of his/her time rate—this is purely a mathematical function without the use of measuring stick distance.

5. →The measuring stick distance is a constant, whereas the motion distance varies as a function of the observer's rate of time←. So vis–â–vis explicitly, our local time frame on Earth, we define/observe the two different concepts as equivalent to one another. Because, in order to define motion distance, one must incorporate the measuring stick distance (d = r x t), specifically from our own frame of time. Essentially, for us, this is our only possible frame of reference for time.

6. We at present have no ability to change our local Earth frame of time and then define/observe the velocity of light and distance from that other frame. However, if we could, in fact, change our time frame, the amalgamation of motion distance and the measuring stick would then be observed/defined as equal from the perspective of that other frame. Therefore, it would differ compared to our local frame on Earth, even though the equations remain the same.

7. For that reason, when comparing divergent observer time frames, the equations d = r x t and v(c) = d/t (also utilizing the measuring stick distance), it makes no sense; it is incomprehensible.

8. The laws of physics such as (force = ma) and (momentum = m x v) also involve time and distance; accordingly, the same principles hold true.

9. In conclusion, here is a recap; please review.

- By using **only**, and the author emphasizes **only**, the observer's perception of motion distance and his/her perception of velocity, (specifically **only** the equations of v = d/t and d = r x t), then for that observer, the velocity of light and the laws of physics remain constant regardless of his/her time frame.
- In addition, as discussed above, one cannot compare different observer frames of time by using the classic equations of (v(c) = d/t), (d = r x t) while also employing the measuring stick distance.
- What is more, given the fact that motion distance (variable) and measuring stick distance (constant) are defined/amalgamated/observed only with respect to a given/specific observer's time frame, then his/her perceived laws of physics and the perceived velocity of light will diverge when equating diverse frames of time, once again not comparable by using the equations (v(c) = d/t), d = r x t) and also with the use of the measuring stick distance. In essence, an entirely new mathematics would be required.

At this time, the concepts described above will be employed to describe how the perception of distance, the perception of the velocity of light, and the perception of the laws of physics are a function of the observer's "rate of time." Now please apply the above concepts to the descriptions/mental imagery as depicted below, especially the distinction between the motion distance and the measuring stick distance.

The following descriptions are extremely abstract/confusing, so for the benefit of novice, explained from multiple different perspectives; for that reason, there is considerable redundancy. Hopefully, the many different viewpoints pictured below will help the reader to conceptualize this novel theory (PFSRT). The outline is as follows:

A. The Perception of Distance as a Function of the Observer's Rate of Time
B. The Perception of Distance and the Perception of the Velocity of Light as a Function of the Observer's Rate of Time
C. The Perception of Distance, the Perception of the Velocity of Light, and The Perception of the Laws of Physics as a Function of the Observer's Rate of Time
D. Further clarifications including how the above concepts relate to SRT and PSRT

**A. The Perception of Distance as a Function of the Observer's Rate of Time**

Distance = rate x time. Essentially, distance is a direct function of time. Likewise, with reference to PFSRT, the rate of time is also assumed to be directly proportional to distance.

Now, refer to Figure 1.8 below and the following discussion.

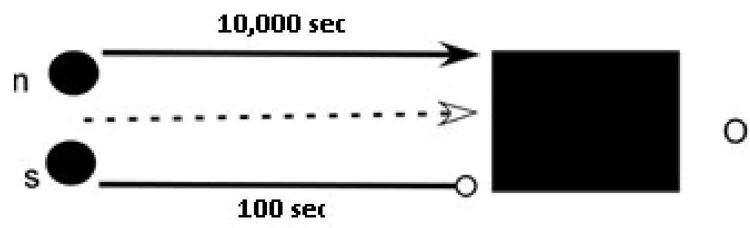



**Figure 1.8** Two astronauts, different rates of time but with the same motion.

- *(Black box O) = object.*
- *(Upper black circle) = astronaut (n), our local time frame.*
- *(Lower black circle) = astronaut (s) slow time frame compared to n.*
- *Time = solid lines labeled in seconds.*
- *Dotted line represents equal velocity of (n) and (s) towards O. Dotted line actually represents equal motion, since the concept of velocity has a component of time and (n) and (s) have different "rates of time." **Essentially, the term motion has no time element**.*
- *One way of perceiving this concept of equal motion is this: n and s have the same velocity but (s) exists in a slower time frame. Therefore, d = r x t or the idea of velocity (v = d/t) does not adequately define this example.*

In order to give explanation to this concept, imagine two astronauts, one named (n) and the other (s), located side by side and at rest within the assumed ether of the universe (PFSRT). In addition, envision an object (O) positioned at a given interval of the ether from (n) and (s), moreover, also at rest with the PFSRT. Furthermore, visualize there are no other objects in this hypothetical universe.

Assume astronaut (n) exists in our local time frame. In contrast, compared to ours, the time frame of (s) is extremely slow. Subsequently, presume they both move towards object O (black square = O) at precisely the same velocity, →actually motion← (single dotted line = motion with no time element). Both astronauts count seconds. Now, (n) counts 10,000 seconds before he/she arrives at (O).

Alternatively, (s) counts only 100 seconds before arrival, since he/she exists in a slower time frame compared to (n).

So, from the perspective of (n), he/she assumes a long distance to the object, because it took a considerable length of time to get there—10,000 seconds. In contrast, (s) presumes a short distance to the object, since he/she got there right away—100 seconds. In other words, the definition of distance, in this instance, is the time interval between two events or the →perception← of the amount of space between two objects (in this case. the starting point and object O).

Discern again, motion distance and measuring stick distance are two separate concepts/ things. Therefore, regarding the following discussions, please pay close attention to when both the observer's perception of motion distance (d = r x t) and that observer's perception of velocity (v(c) = d/t) are used together, alone, compared to whenever the measuring stick distance is also incorporated.

For further clarification as to how the observer's reference frame of time relates to his/her *perception* of motion distance, assume there is a preferred frame (PFSRT, ether at rest, universe). If takes me, with respect to my time frame, six billion years to travel through space (ether) at a →given motion←, 1/100 across the visible universe, it is a long distance.

But relative to your slower time frame, if it takes you only one second, moreover, at the →same motion←, it's a short distance. So this concept of motion distance is a function of the rate of time. It is not related to physical measurement of matter (measuring stick distance), but rather the observer's perceived distance through space (motion distance). Recall that our notions of distance and velocity involve time (d = r x t and v = d/t). Again, this distance definition is not a function of the physical measured length of ether traveled through, nor the physical length of our bodies (measuring stick distances). Rather, it is the observer's perception of distance through space/ether in the direction of motion as a function of that observer's time frame (motion distance).

*Question:* If as given above, your time frame slows down vis–á–vis mine, then compared to my perception, do both the universe (space/ether) and you physically contract (length) in the direction of motion? Or does the universe, as well as you, remain unaffected, moreover, only your perception of distance through space decreases (relative to me) as a function of your slower frame of time (motion distance)? For the latter, you would see objects of the universe pass you by faster than for me (measuring stick distance), but your perception of distance would still be based on how long it took to get there = one second (motion distance).

**B. The Perception of Distance and the Perception of the Velocity of Light as a Function of the Observer's Rate of Time**

Observe once again, motion distance and measuring stick distance are two separate concepts/things. In addition, recollect the amalgamation/unification of the measuring stick distance with the motion distance changes from the perspective of the observer when/if that observer's "rate of time" changes. Once more, please pay close consideration as to when the observer's perception of motion distance (d = r x t) and that observer's perception of velocity (v(c) = d/t ) are used together, alone, versus when the measuring stick distance is included.

This distance concept is exceedingly abstract, therefore, confusing. In addition, in the author's opinion, the classic equation of (d = r x t) and the idea of velocity (v = distance/time) cannot adequately define or describe this concept.

For instance, relevant to our own local rate of time reference frame, everything is logical, moreover, makes common sense (d = r x t) (v = d/t). Alternatively, for an observer existing within a reference frame of a different rate of time, when comparing the two different frames, it becomes confusing since both scenarios (the two equations listed above) involve the mathematical symbol t (time). Essentially, if an observer's "time frame" changes, then between those two frames, perception of d and v also changes. For this reason, relative to the observer, when equating different frames of time, by using only (d = r x t) (v = d/t), the explanations are not only very difficult to describe but perplexing. The author finds it very challenging to define this complex and abstract topic.

Therefore, this velocity/distance concept will now be re–explained from multiple different perspectives or reference frames, mainly involving mental imagery as given below. However, before proceeding, take note that the velocity of light of (c) is a function of distance and time (c = d/time). So an apples–to–apples comparison for the definition of distance should also be a function of motion through space/ether, again, a function of time (d = r x time). Note this assumption does not involve the measuring stick distance.

1. Regarding astronomy, recall that the distance to the stars is measured in light years. Distance = (c) (speed of light) x t (light years, which is a function time). And velocity (c) = distance/time. So, if the observer's "rate of time" affects the perceived distance to a star through space/ether in the direction of motion (object in Figure 1.8). And, more importantly, if they are directly proportional to one another (t/d), moreover, using **only** the concepts/equations of v(c) = d/t and d = r x t, then the speed (velocity) of light remains at a constant (c) for all inertial observers. This concept is abstract but will be clarified in the following passages. Again, this assumption does not involve the measuring stick distance.

2. Take note, the above concept depends upon the definition of rate of time as just elucidated (Section 1.4) and how that time frame relates to an observer's perceived distance through space in the direction of motion (Section 1.5) vis–ắ–vis specifically the speed/velocity of light. So, as a consequence, inertial motion produces a constant value of (c) for all observers, irrespective of their different time frames, which is one of the two basic assumptions of Einstein's SRT but now a function of the ether not the observer (see examples below). Once again, this assumption does not incorporate the measuring stick distance.

3. For instance, assume an individual on Earth is observing reflected sunlight from Jupiter. That light is traveling towards that person at a velocity of 186,000 mps, through a given measuring stick distance x. Now, if the observer's rate of time slows down by one–half and if nothing else changes, including the →fixed movement of light through the ether/space←, the light is then traveling towards that observer at (186,000 x 2) mps. (Recall, the movement of light is a universal constant with no time element.)

But that observer's perception of the traveling distance to Jupiter is cut by one–half as well, since at the same →slower time frame←, it only takes one–half the time to get there from Earth (d = r x t) = →motion distance ← (not the measuring stick distance which is another universal constant). Taking into account both of these factors, then no matter what the observer's rate of time, the perceived velocity of light through space/ether, specifically in the direction of motion, remains at (c), or relative to the latter example (186,000 x 2) mps x (one–half the distance) = 186,000 mps. Yet again, this assumption does not involve the measuring stick distance. Notice, regarding this example, it is fairly easy to envision from the observer's reference frame, the first part, how that observer's "time rate" relates to his/her perception of the velocity of light through space/ether as just described.

- V = d/t (rate of time). So if the time frame of the observer slows, then for that observer the velocity of light increases. This conception is an inverse proportional function. →This assumption does not involve the measuring stick distance←.

However, it is more difficult to imagine the second part, as to how the observer's time rate affects perception of distance through space in the direction of motion. Nevertheless, both are function of the observer's rate of time.

- D = r x t (rate of time). So, if the time frame of the observer correspondingly slows, then for that observer distance decreases (motion distance). This is a direct proportional function. →This assumption does not involve the measuring stick distance←.

Observe that the two *perceptions* depicted above (direct/inverse) counteract one another. So, for the observer, the speed of light remains constant at (c). →This assumption does not involve the measuring stick distance←.

**Again, with respect to this theory, distance as measured by a physical ruler, defined as a measuring stick distance, is a different concept compared to distance as a perception of movement through space (ether), which involves the rate of time (d = r x t). This latter concept is the motion distance**.

4. For example, assume an object emits light directly towards an observer on Earth, moreover, is located 300,000,000 (x) distance away from Earth as physically measured by a given length of matter (x) = a measuring stick distance. →This definition of distance **includes** the measuring stick distance.←

Scenario 1: If the light travels through this given measuring stick distance (space/ether) in one second, its velocity with respect to that observer is then 300,000,000 x per second. Furthermore, if the same observer moves from Earth towards that object at 1 (x) per second, it will then take a person 300,000,000 seconds to get there (d = r x t).

Scenario 2: If the observer's rate of time slows by one–half, the →fixed movement← of light then travels that same measuring stick distance in one–half second or 600,000,000 (x) per second. Additionally, if that observer travels to that object with the same →slower time frame← as compared to Scenario 1, then that observer will be moving towards the object at 2 (x) per second; moreover, it takes 150,000,000 seconds to get there. The observer will perceive the distance to that object as one-half the distance compared to Scenario 1 (d = r x t) for the same observer with the other rate of time.

Scenario 1: (300,000,000 (x) per second) equated to (1 (x) per second).

Scenario 2: (300,000,000 (x) per half-second) equated to (1 (x) per half-second).

Pertaining to the reference frame of Scenario 2 above: for both the light and the observer traveling with per unit of time of one second, they move at twice the physical measuring stick distance when compared to Scenario 1. Take note, the ratio remains constant. So, if the ratio remains constant, then from the observer's reference frame the perception of the velocity of light remains unchanged for both scenarios 1 and 2 (see below).

In other words, relative to this example, the observer's perception of the velocity of the light and his/her perception of the motion distance are both a function of the observer's rate of time. Furthermore, they are proportional (direct and inverse) to one another; moreover, counteract one another. As a result, the velocity of light remains constant for both scenarios 1 and 2, →in this example, using only the motion distance but not the measuring stick distance.← The author once again denotes that the mathematical equations of d = r x t and velocity = d/t cannot be readily applied to explain this concept when using the measuring stick distance.

5. So again, distance, as calculated by a physical measuring stick, is a different concept when compared to the perception of distance as a function of motion (time) through space/ether (d = r x t). Observe that the latter concept involves the rate of time, whereas the first concept does not.

→The measuring stick distance is the absolute frame (universal constant). But the motion distance (d = r x t; the variable) is a function of the observer's rate of time while moving through that absolute frame←. Now, in our local rate–of–time reference frame, the two different distance concepts are mathematically equal to each other (defined/observed that way). On the other hand, with reference to a traveling observer with a different time frame →compared to ours,← they are unequal/different.

The same observer in inertial motion, instantaneously transferring from one time frame into another, then perceives both the fixed movement (universal constant) of light and the motion distance as different (changed). In addition, for that observer, those two changing perceptions counteract one another (direct/inverse) in such a way that the velocity of light remains at (c). Yet again, the author denotes that the mathematical equations of d = r x t and velocity = d/t cannot be readily applied to explain this concept when also using the measuring stick distance.

This is because in order to describe/define motion distance (d = r x t) one must incorporate the measuring stick distance (length of matter/ether). Therefore, when comparing different time frames, the unification/amalgamation of the two diverse concepts/definitions does not make any sense.

Relevant to the PFSRT, both light and the observer possess movement/motion (no time frame) through the measuring stick distance, but the perception of velocity and the perception of only motion distance are a function of the observer's time frame. In addition, in the scenario whereby the observer changes his/her rate of time (increased/decreased velocity relative to the PFSRT), then the new altered perception of velocity and the new altered perception of only motion distance always counteract one another, so, for that observer, maintaining the perceived velocity of light as (c) (v = d/t and d = r x t) furthermore, not by using the measuring stick distance, rather only the motion distance.

6. Notice, the author used the words "motion/movement" which have no time element. This is because the observer's time rate converts that fixed motion/movement through the ether into his/her perception of velocity and perception of motion distance (also rate = e.g., meters/sec). The reasoning is very abstract.

- The concept of velocity is a function of time (v(c) = distance/time). And "rate" is also a function of time (e.g., meters per second).
- The concept of motion distance is a function of time (d = rate x time). Moreover again, "rate" is also a function of time. This is motion distance not physical length measuring distance (measuring stick distance), which has no time element.
- As a result, frequency and wavelength (motion distance) are both functions of time.
- →So, the time frame of the observer then affects these equations/concepts. It converts fixed light movement (constant) and defined fixed motion into the perception of the velocity of light (v = distance/time of observer) and the perception of motion distance (d = r x time of observer) and (r = d/time of observer)←.

**C. The Perception of Distance, the Perception of the Velocity of Light and the Perception of the Laws of Physics**

Take note yet again, motion distance and measuring stick distance are two separate concepts/things. In addition, the amalgamation/unification of the measuring distance (constant) and the motion distance changes as a function of the observer's time frame. Pay close attention as to when both the perception of motion distance (d = r x t and the perception of velocity (v(c) = d/t) are used together, alone, as opposed to when the measuring stick distance is also integrated.

Up to this juncture, the focus has been centered on the perception of motion distance and the perception of the velocity of light as a function of the observer's rate of time. So now let us include the perception of the laws of physics as a function of the observer's time frame.

Recall, when we calculate the speed/velocity of light/the laws of physics with instruments/experiments, we always measure/gauge it by using, in one form or another, time, v = d/t and d = r x t →(only from the perspective of our local reference frame of time on Earth)←.

In our own local time frame on Earth, for the observer, all these equations/concepts correlate and make common sense. This is because it is our only reference frame for the rate of time. We, at present, have no ability to change our own local time frame and then measure the speed/velocity of light using the laws of physics from that other frame. Therefore, we define the above concepts (equations) from our observations only within our own specific local frame of time.

Alternatively, with respect to PFSRT, an observer at high velocity relative to the PFSRT will have a slower rate of time, a different time frame. Consequently, relative to that scenario, moreover, with reference to the above equations/concepts, everything changes. Observe, with respect to this new scenario, all together they do not make common sense explicitly by incorporating the measuring stick distance. So one cannot easily define/describe this theory by using the above standard classic concepts/equations of (d = r x t), (v = d/t), and also the measuring stick distance, particularly when contrasting dissimilar observer time frames.

To recap, with respect to our local reference frame of time, for the observer, motion distance and measuring stick distance correlate with one another (defined/observed that way). Then, regarding a person/observer with a different time frame, →compared← to our local frame, motion distance and measuring stick distance then segregate. So regarding that non–local observer, the laws of physics/velocity of light would differ →compared← to our local perspective, not by using the motion distance alone, rather in conjunction with the use of measuring stick distance (Project Serpo).

This conception is extremely abstract/confusing. Consequently, for further clarification, it will be re–explained from a different perspective. For example, the mathematics of Kepler's laws uses time, distance, and velocity in their equations (or their derivatives). Regarding our local time frame on Earth, motion distance and measuring stick distance are equal to one another (observed/defined that way). This is our local frame of reference. So, in this instance, Kepler's equations make common sense, moreover, represent reality from this specific perspective. Alternatively, for an observer with a different time rate →compared← to our local frame, motion distance and measuring distance then differentiate. So, one cannot utilize these equations to describe this second scenario especially when →comparing← them to our local time frame. A totally different mathematics would be necessary.

For that reason, conceivably, if one could travel to a distant planet orbiting a star whereby that planet had a slower time frame compared to our local frame, Kepler's laws would be different (Project Serpo). **Just as we on Earth (observer) presume motion distance and measuring stick distance are equal as a function of our local time frame observations, the individual on that other far planet will define/observe motion distance and measuring stick distance as the same from his/her reference frame (a different rate of time)**. So compared to our Earth frame, Kepler's equations would still be the same, but the mathematical numerical values and geometry would then differ.

Bear in mind that some of the examples described above involve gravity, therefore, not compatible with SRT/PFSRT which involves only inertial motion. It is only presented to show the correlation between the observer's time frame with the idea/perception of how motion distance and measuring stick distance relate to each other (from his/her time frame perspective).

Now, regarding the movement of light (specific to GRT) vis–á–vis its perceived velocity, as a partial explanation, and the author emphasizes partial, an observer viewing light emitted/traveling towards him/her from a massive astronomical object perceives that light as <c. This effect is, in part, a function of that observer's rate of time. Again, the time frame of the observer partly determines the observer's perception of the light's velocity (<c) even though the absolute velocity of light is a fixed universal constant (c) (based on GRT using only mathematics with no observational proof—we observe the velocity of light as <c but presume, without actual experimental or observational proof, it is a constant (c) →using only mathematics←).

**For future reference regarding this chapter (relevant to only PFSRT), the velocity of light (c) and the laws of physics are the same in all inertial frames →based upon only the**

**mathematics← of both motion distance and the perception of velocity**, moreover, **not** with the use of measuring stick distance. Basically, it is only a mathematical equivalence similar to the example given as presented on the previous page using GRT regarding the velocity of light. **The above assumption is just like the example whereby the speed of light emitted from a massive astronomical object as observed far from that object = <c but assumed to be** (c) (the constant) if both the observer and light were in the same reference frame (only mathematically using the equations of GRT).

It is even more complicated, since the original definition of a meter was as measured length of matter with no time factor (measuring stick distance). Presently, a meter is defined as 1/299,792,458 of the distance light travels in a vacuum in one second, again a function of rate of time (motion distance). In the author's opinion, this new redefinition of a meter involving time (motion distance) rather than physical length of measured matter (measuring stick distance) is a fundamental error, moreover, a key concept regarding the understanding and acceptance of this new theory (PFSRT).

For the reader, here is a key query: regarding the equations of Einstein's SRT, is the mathematical distance symbol used equivalent to the motion distance, the measuring stick distance, or both? In the author's opinion, Einstein incorrectly intermingled the two distinct concepts/definitions—a fundamental miscalculation.

**D. Further Clarifications including How the Above Concepts Relate to SRT and PSRT**

Now, referring back to our "n" and "s" astronaut example. When n and s travel to object O, both travel through the same measuring stick distance (ether), moreover, with identical →fixed motion←. However, n and s possess different rates of time. Their perception of that same measuring stick distance then differs. So s perceives a shorter motion distance than n. Nevertheless, the physical measuring stick length/distance relevant to the astronaut's physical bodies (n and s) remains constant, independent of their individual rates of time.

In summary, only the →perception← of distance (the motion distance) changes as a function of the astronauts' differing rates of time. In contrast, given the same scenario, the measuring stick length/distance of their physical bodies and the ether (space) in the direction of motion does not change/contract.

What is more, if object O admits light, at a given frequency, then s perceives a shorter wavelength compared to n, because of the number of light waves observed per second by (s) > (n). In other words, each of the astronauts overall observes the exact same total number of light waves, but s observes more per second than n, because for s, the "time frame" is slower.

**PFSRT differs considerably compared to the above example, wherein both astronauts possess equal velocities (motion), although different time rates. That example was only used to simplify how the rate of time of the observer correlates to motion distance through space (ether) as well as the perceived—and perceived is emphasized—velocity of light.**

**In contrast with reference to PFSRT, given that both B and C possess different velocities relative to the PFSRT, they then possess different relativistic inertial masses (C > B), moreover, different rates of time (C slower than B), thus different perceptions of only motion distance (C distance < B), all as a function of their different velocities with respect to the ether (PFSRT).**

For reinforcement once again, please refer to Figure 1.9 below and the following captions and paragraphs.

Given the existence of the ether (box), now shift the focus away from observer A to observers B and C.

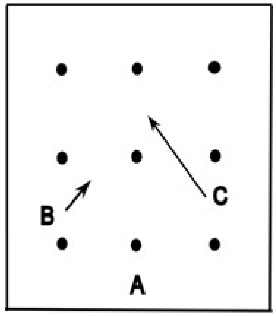



**Figure 1.9** Rest Mass, Inertial Mass, and Relativistic Inertial Mass

*Recall, B and C have increased velocity relative to the ether of PFSRT (C velocity > B = length of arrows), therefore, increased relativistic mass (C > B) and a slowing in the "rate of time" (C "time frame" slower than B).*

Therefore, from the positions of B or C, which is from the reference frame of a velocity relative to the ether (PFSRT), his or her perceived motion distance to any given object at rest with the PFSRT is directly proportional to each individual's rate of time (C motion distance < B).

So, as a result of this proportional interrelationship, (t/d) then for all observers, regarding all inertial frames, notwithstanding their different rates of time, the velocity of light remains at (c). This is a function of v(c) = d/t and if t/d remains proportional, then (c) is constant (*not using the measuring stick distance*).

In addition, assuming that the PFSRT is the preferred frame for light, then for C and B as the perceived motion distance to any object decreases (C < B), relative to A, then the observed wavelength of light emitted from that object to C and B also decreases proportionally (C wavelength < B wavelength < A).

In summary, here is a crucial concept, for all inertial observers, irrespective of their different rates of time, the speed of light remains at (c) and the laws of physics are identical within all inertial reference frames (using only v(c) = d/r and d = v x t but not the measuring stick distance), just like Einstein's SRT, except now, as a function of **the ether**.

A major distinction between the two theories (SRT, PFSRT) is that regarding SRT, by definition, the main focus is the assumption that the velocity of light is (c) relative to the observer (c constant in empty space). Whereas, with PFSRT, the key concept is the observer's rate of time as a function of that observer's velocity with respect to the ether of PFSRT, which in turn again produces (c) relative to the observer (not using the measuring stick distance). **Note both theories revolve around the observer, but PFSRT has a preferred frame other than the observer, the ether (PFSRT)**. See Figure 1.10 below for a summary.

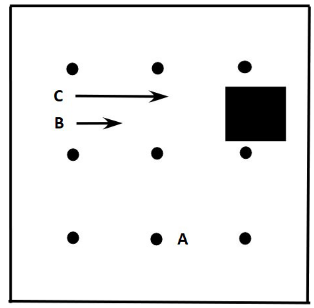



**Figure 1.10** Summary

- *Length of arrows depicts velocity relative to the ether of PFSRT.*
- *Black box = an object at rest with the ether.*
- *B and C (observers) both exist at a high velocity relative to the PFSRT, with C > B.*
- *Assuming the new model, then B and C, as a function of the ether, also possess higher relativistic inertial masses (C > B) compared to the rest mass of A.*
- *In addition, B and C, again as a function of the ether, manifest a slower "rate of time" (C slower than B) compared to A.*
- *Given that the rate of time and motion distance are directly proportional (d = r x t), for any single given object in the universe (black box), B and C then perceive less motion distance (C < B) compared to A.*
- *Furthermore, the observed wavelength of light from an object (black box) can change for (A, B, C).*
- *However because the rate of time is directly proportional to motion distance (d = t x r) and inversely proportional to perceived speed (v = d/t) the velocity of light remains at (c) for (A, B, C), irrespective of their different rates of time, and the laws of physics remain the same within all inertial reference frames (A, B, C) using **only** the mathematics of both motion distance and perception of velocity (not in tandem with measuring stick distance).*
- *This new model (PFSRT) demonstrates most of the outcomes of Einstein's SRT; however, now there is **the ether**.*
- *In the author's opinion, there must be some sort of mathematical constant (like the gravitational constant G) related to the perceived movement of light through the PFSRT as a function of the observer's rate of time frame, thus producing a constant velocity of (c) for that observer, regardless of the observer's time frame (without the use of the measuring stick distance). In addition, there would be two universal constants = the movement of light with no time element and the measuring stick distance (length).*
- *This mathematical constant should involve (c) but also the observer's rate of time.*

## 1.6 Visualizing SRT vs. PFSRT

See Figure 1.11 below. SRT's four–dimensional space–time is a mathematical construct; therefore, one cannot readily visualize it with reference to three–dimensional space. Alternatively, using PFSRT, it is comparatively easy to do so. For instance, picture in your mind a cube with the inner part representing all of space/ether/universe/ PFSRT. For purposes of this illustration, this cube represents the three–dimensions of the universe (PFSRT) but in the real universe without walls. Fundamentally, in the real universe, the dimensions are up–down, left–right, and forward–backward.

Next, imagine an observer possessing a velocity relative to and within the cube depicted by the arrow. Recall, the faster his/her velocity (length of arrow), the slower the observer's "rate of time." In effect, the velocity of the observer determines that individual's "reference frame of time." So the arrow then represents the temporal fourth dimension (time).

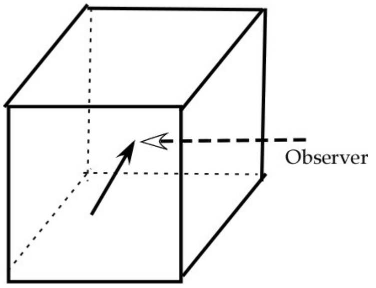
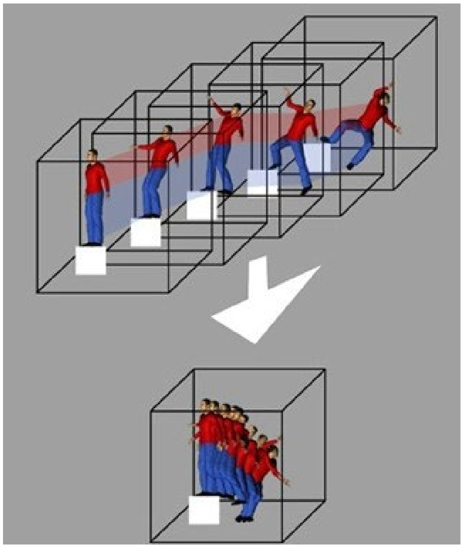



**Figure 1.11** The cube has three dimensions. The arrow is the fourth dimension.

Now with reference to Einstein's SRT, is the fourth dimension mathematically perpendicular/orthogonal to the other three dimensions as shown above? That is the mathematics of SRT.

Depicted in Figure 1.12 is another 3–D presentation of 4–D space–time.



*Sahil Kulbhaskar**
**https://www.quora.com/If-fourth-dimension-is-true-how-could-one-draw-the-fourth-axis-perpendicular-to-the-other-3-axis-3d*

**Figure 1.12** Einstein's Snapshot [Fair Use]

• *"Einstein's theory of special relativity postulates that space and time are related to each other in forming a space–time continuum of three spatial dimensions and one temporal dimension. It is still possible to visualize space–time simply by treating time as 'time' and examining 'snapshots.'"*
*Quora.com*

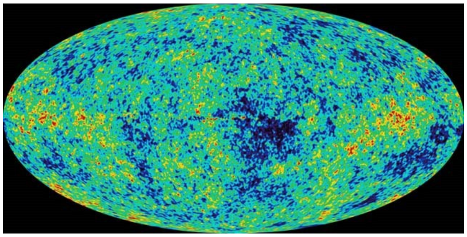
Observe, the series of snapshots in Figure 1.12 is analogous to the arrow in Figure 1.11 (movement).

## 1.7 The Real Universe

Please, now refer to Figure 1.13 below and the following discussion.

However, the information just presented is not that simple. The cosmic microwave background radiation (CMBR) observed from Earth has an anisotropy of approximately 378 km/sec in the direction of the constellation Leo.

Left Right



*NASA*

**Figure 1.13** Cosmic Microwave Background Radiation [Fair Use]

*This image shows the cosmic microwave background radiation, which is almost, although not completely, uniform. The difference in color is equal to about 1 in 100,000. This radiation is at rest with the PFSRT.*

This radiation permeates uniformly all of the ether (PFSRT), or in classic terminology, all of the space of the universe. In addition, it is assumed to be at rest with respect to the PFSRT. Furthermore, it expands symmetrically along with the expansion of the universe (ether). Nonetheless, there are some minimal fluctuations; although they are fairly evenly distributed as portrayed in Figure 1.13 by the different colors/shades.

Now, please refer to Figure 1.14 below and the following discussion.

The redshift of the CMBR, as observed from Earth, represents our velocity relative to the PFSRT. This is due to the fact that the CMBR is at rest with the PFSRT. This observed redshift from Earth is the summation of the velocity of the galaxy, velocity of the Sun around the galaxy, and the velocity of the Earth around the Sun, all relative to the PFSRT (Figure 1.14). Recall again, this chapter ignores gravitational fields, which will be discussed in Chapter 2.

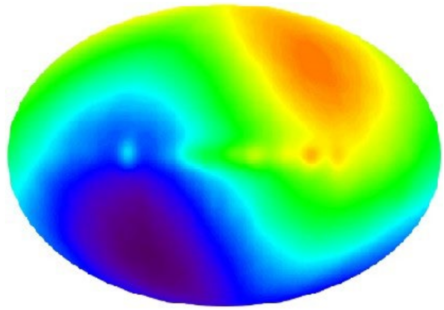



**Figure 1.14** Redshift and Blueshift [Fair Use]

*The Earth has a velocity of 378 km/sec relative to the cosmic microwave wave background radiation (PFSRT). This is represented by redshift in one direction (Right) and a blueshift in the opposite direction (Left) as depicted above.*

What this signifies is that we on Earth are not absolutely at rest with the PFSRT. It means we possess a velocity of 378 km/sec relative to the PFSRT. This is extremely slow compared to the speed of light, nevertheless, not zero. Additionally, it is also presumed that the majority of the galaxies, although not all, have a fairly low velocity with respect to the PFSRT. So they, as we, are almost at rest with the PFSRT.

To recap, in the vast universe, an observer (A, B, C) is either at rest or else at a velocity relative to the PFSRT. As such, each observer (object) is associated with a specific inertial mass and a given rate of time, both as a function of his/her velocity with respect to the PFSRT. In addition, an individual's perception of the motion distance to any given point in the universe is dependent upon his/her time frame. Furthermore, for all observers, no matter what their velocity relative to the PFSRT, they still perceive the speed of light as (c), not using the measuring stick distance.

What is more, the observed wavelength of the light emitted from any object in the universe is a function of the observer's velocity (rate of time) relative to the PFSRT, the object's velocity (rate of time) relative to the PFSRT, the intrinsic wavelength of emitted light from the object, and finally, the relative velocities of the observer and object with respect to each other.

As for the latter, this explains why light emitted from an object traveling towards the observer is blueshifted, whereas light from an object traveling away appears redshifted. This is defined as the classic longitudinal Doppler effect.

This is analogous to the sound emitted from a truck that approaches you, passes, and then recedes from you. The pitch of the sound drops as it passes you by. The higher–pitch sounds represent sound waves piling up as it approaches you (blueshift). And the lower pitch represents sound waves stretching out (redshift) as the truck passes and subsequently recedes from you. To most individuals with a minimal scientific background, it is obvious that there is a preferred frame for sound, which in this case, is the atmosphere.

Likewise, considering this new theory (PFSRT), the exact same function occurs, but this time regarding light, with a preferred frame of the ether. What is interesting is this: in the past, this analogous relationship and connection was far easier for the non–physicist to assume, since they did not understand SRT. As for the physicist, the similarity was clear but obscured by the complexities and mathematics of SRT. Therefore, this obvious interconnection was then ignored.

### 1.8 SRT vs. PFSRT

1. SRT assumes that all inertial motion is →relative to the observer←.

PFSRT presumes all inertial motion is → relative to the PFSRT ←.

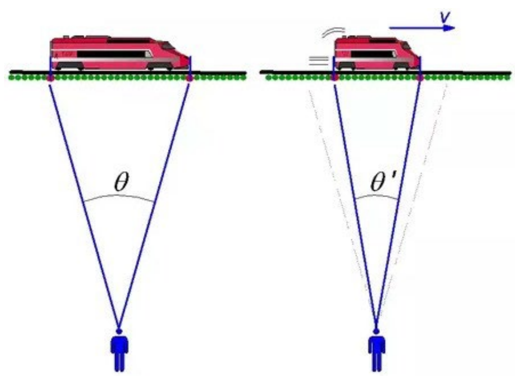
2. SRT assumes, that →relative to the observer←, as the velocity of an object increases linearly, its inertial mass increases by an LT function. In addition, →relative to the observer←, the velocity of the object cannot exceed (c).

PFSRT presumes that →relative to the PFSRT← as velocity of an object increases linearly, its inertial mass increases by an LT function. Furthermore, →relative to the PFSRT←, the velocity of the object cannot exceed (c).

3. SRT assumes, that →relative to the observer ←, as the velocity of an object increases linearly, its "rate of time" decreases by a LT function.

PFSRT, presumes that →relative to the PFSRT← as velocity of an object increases linearly its rate of time decreases by an LT function.

4. SRT assumes that →relative to the observer←, as an object approaches the speed of light, distance in the direction of motion, including physical length contraction of matter, decreases, (see Figure 1.15 below).




*quora.com*

**Figure 1.15** Length Contraction with Two Trains [Fair Use]

*The illustration shows that relative to the observer, as an object approaches the speed of light, its physical length contracts.*

→PFSRT, *presumes that only the perception of motion distance* through space (ether) in the direction of motion decreases as the observer's velocity increases relative to the PFSRT. It does not *posit physical length contraction of matter* in the direction of motion (measuring stick distance).←

5. SRT assumes the speed of light is always (c) →relative to the observer← (c constant in empty space, regardless of the rate of inertial motion). In addition, it also presumes there is no preferred frame; thus all motion is relative. Therefore, the laws of physics are the same in all inertial reference frames.

PFSRT presumes there is a →preferred frame of the ether← (the medium where light travels), wherein the movement (no time element) of light travels at (c for the observer's time frame–using only mathematics). Furthermore, for all observers, no matter what their velocity relative to the PFSRT, they still perceive the speed of light as c, and the laws of physics are the same in all inertial observer reference frames (once more using only the mathematics of motion distance and the perception of velocity——without employing the measuring stick distance).

## 1.9 Resolution of the Paradoxes and Inconsistencies Associated with SRT

**SRT – the twin paradox problem.**

Einstein's SRT assumes all inertial motion is relative. For example, imagine two astronauts (A and B) traveling in the far regions of outer space where nothing else exists, moreover, in opposite directions with respect to one another. Therefore, assuming SRT is correct, if astronaut A travels at 0.5c relative to stationary astronaut B, then this is no different compared to if astronaut A is stationary and B is traveling in the opposing direction, again at 0.5c.

Now, given the postulates of SRT, furthermore, as these astronauts pass by each other, with respect to their different inertial frames, A observes B as having increased inertial mass and a slowing in the "rate of time" and B vice versa. This is nonsensical, for by logic, both scenarios cannot be correct. In contrast with reference to PFSRT, there is no twin paradox conundrum, because there is a preferred frame—**the ether**.

Regarding the resolution of the twin paradox problem, the author does not concur with the classical SRT explanation given by physicists, whereby acceleration and a gravitational field are evoked. In the author's opinion, since SRT involves only inertial motion, the answer to the paradox cannot be a function of gravity or acceleration, which is what physicists attempt to do, en erratum.

This new nonclassical portrayal of the twin paradox problem offered by the author better illustrates the conundrum, furthermore, devoid a solution relevant to the assumptions of SRT. Again, it can be explained with the presumption of an ether (PFSRT): there is then an alternative explanation absent symmetry, because there is a preferred frame (PFSRT).

**SRT – the simultaneity problem.**

From the Physics Forums website: "In special relativity, the relativity of simultaneity is explained with the following example. We have one frame of reference, a train moving from left to right with constant speed (v) relatively to the embankment, and a second frame of reference, the embankment itself. On the embankment, there are points A and B and their midpoint M.

"On the train, there is the point M'. When M and M' meet each other, two bolts of lightning strike both A and B. The observer on the embankment sees that the two flashes of light meet at the midpoint M. But since the train is moving and the point M' with it, M' moves towards B and therefore, the observer on the train will see that the beam from B will arrive first at point M' and after that will arrive the beam from A. And so simultaneity is relative—for one observer the two events are simultaneous, but for the other, they are not."

So as presented above, referring to various diverse inertial frames, the perceived timing of events is different. In contrast, if there is a preferred frame (not the observer), with an ether wind, then the above classic example can be explained by another methodology.

For instance, in the scenario where there is a relative ether wind with respect to the Earth–centered frame ECF/Earth's gravitational field EGF/ether, then as a result, neither the observer of reference frame M or M' receives the flashes simultaneously. This is because the observer of frame M and the two lightning bolts possess the same velocity relative to the ECF/EGF/ether as a consequence of all three rotating synchronously along with the spinning Earth at its surface. This is assuming the train is traveling west–east and the flashes of lightning are in front of and behind the train; then it takes light longer to travel west–east compared to east–west.

On the other hand, the observer of frame M' possesses a different velocity with respect to the ECF/EGF/ether given the fact that, while riding on the train, M' is then traveling at a greater velocity with respect to the rotating surface of the Earth. As a result, M' velocity relative to the ECF/EGF/ether is greater than M. Therefore, the time interval of the asynchrony of the observed lightning bolts is greater for M' compared to M.

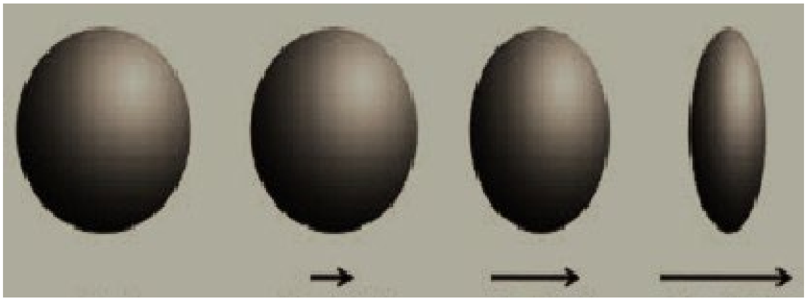
This alternative explanation of simultaneity as a function of the relative ether wind will be much clearer after reading chapters 2 and 3 of this publication and referred to again at that time.

As with all theories, given sufficient time, Einstein's relativity will eventually be overturned. And when it is, the whole world will wonder why these inconsistencies were ignored; nevertheless, the theory is still accepted, without question, as absolute gospel truth.

Notice, all the inconsistencies of Einstein's SRT vanish if its assumptions are modified with PFSRT. This modification includes a single preferred frame for the speed of light, motion of objects, rest inertial mass, and finally, the rate of time, other than from the frame of the observer.

## 1.10 Lorentz Theory

Lorentz posited a theory with a stationary luminescent ether, somewhat similar to PFSRT with (c) relative to that ether and →physical← length contraction of objects (matter) in the direction of motion. In addition, this contraction is postulated to be a function of an object's velocity relative to a preferred frame (ether) and not with respect to the observer. (Figure 1.16 below.)



V=0 V=0.2c V=0.5c V=0.9c

*Credit: Sahil Kulbhaskar*

**Figure 1.16** Length Contraction, Different Speeds [Fair Use]

*Relative to the preferred frame of the ether, as an object approaches the speed of light, its physical length contracts.*

However, Lorentz's length contraction of actual physical objects has never been experimentally observed so remains unproven. In contrast, PFSRT presumes perceived distance, through space/ether in the direction of motion, decreasing or increasing as an effect of the observer's rate of time, which in turn, is a function of that observer's velocity relative to a preferred frame (PFSRT). The key point is perceived motion distance through space, not physical length contraction of objects (measuring stick distance) in the direction of motion. PFSRT is more intuitive and logical, in essence, more consistent with common–sense reality. So given SRT, Lorentz theory, and PFSRT, which theory is more compatible with reality and Occam's razor?

## 1.11 Conclusion

PFSRT is extremely abstract/bewildering. For that reason, this conclusion is divided into two parts. After evaluating, moreover, comprehending the first part, apply the principles presented to the second part.

**Part 1**

As referred to numerous times, this new theory (PFRST) cannot be explained by using the classic mathematics of d = r x t and v(c) = d/t, because motion distance (variable) and measuring stick distance (constant) are two different things.

This concept is extremely puzzling, because in order to describe/define motion distance, one must incorporate the measuring stick distance. Consequently, for the observer, when comparing different observer time frames the amalgamation of the two definitions/concepts does not make common sense (perhaps abstract sense but not common sense).

So as the result of this dichotomy, moreover, regarding PFSRT, then (c), relative to the observer and the laws of physics, are the same in all inertial frames by using only the mathematics of motion distance but not in tandem with the use of measuring stick distance. The author chose to present it this way for ease of understanding/comparison (SRT vs. PFSRT). PFSRT would be expressed by a new mathematical theory with two universal basic constants = the measuring stick distance and the fixed movement of light with no time factor which are nontemporal-related entities (both are actual physical structures derived from the ether as depicted earlier in this chapter and the following chapters 2 and 3).

Once again for emphasis/reinforcement, all experiments/observations regarding physics that have ever been performed are a specific function of our own local frame of time. Mankind has never performed any experiments/observations from the perspective of a different time frame.

Now assuming motion distance and measuring stick distance are two distinct independent things, as posited by this book, then with reference to observers/physicists performing physics within different rates of time, the equations/concepts will be identical between those frames; however, the numerical values/geometry will differ. This is the reason why one cannot utilize/compare/comprehend v = d/t and d = r x t between dissimilar time frames (again when using the measuring stick distance).

With respect to Part I, the three pertinent concepts the author wishes to convey are:

- Motion distance (d = r x t) and the measuring stick distance (length of measured matter/ ether) are two different things/concept. Therefore, just as we, within our own specific time frame, presume/define motion distance and measuring stick distance as equal, a function of our local time frame observations, an individual existing within another time frame will define/observe motion distance and measuring stick as the same from his/her reference frame (a different rate of time). So, when comparing diverse observer frames of time, the velocity of light and the laws of physics will differ explicitly when incorporating the measuring stick distance. On the other hand, by only using the mathematics of (d = r x t and v = d/t) without integrating the measuring stick distance, then the velocity of light and the laws of physics are the same within all disparate inertial frames →this is only a mathematical equivalence and not real←.
- SRT and GRT are only proven/observed from our local specific time frame, furthermore, only assumed to be correct in other fames of time not by observation/experimentation but rather with the use of only the mathematics of relativity. In essence, there is no observational/experimental proof vis–a´–vis different observer time frames that SRT is correct.

- Relevant to PFSRT (Chapter 1) and PFGRT (Chapter 2), because motion distance and measuring stick distance segregate between different time frames, one cannot describe/define this new abstract theory via present-day mathematics.

**Part 2**

Now please apply the above principles to Part Two as now provided below.

As stated in the preface, this new visual theory (PFSRT) combines Galilean transformation theory and Newton's theories (three–dimensional space) with Maxwell's EM theory (velocity of light of (c) relative to the observer) without altering either of them but now from the rest frame of the ether of (PFSRT) not the observer (SRT).

Fundamentally, Einstein's synthesis had to choose between Maxwell vs. Newton and Galileo. He either had to modify Maxwell's theory to make it compatible with the Newton and Galileo theories or vice versa. He chose the latter. This new theory (PFSRT) accomplishes almost the same outcome as SRT but now from the frame of the ether rather than the observer (SRT = (c) constant in empty space irrespective of the observer's velocity), furthermore, visually, not mathematically.

Conceiving all this from a different point of view, regarding Einstein's SRT by definition (c) is relative to the observer (constant in empty space). As such, the focus is on (c), and all else (time and distance) revolves around this basic assumption, moreover, by using purely mathematical means.

Alternately, vis–*á*–vis the new PFSRT, the crucial concept is the observer's velocity relative to the physical ether of PFSRT (the medium where light travels within). In other words, there exists a preferred frame (PFSRT), but regarding that frame, both the *perception* of motion distance and the *perception* of the velocity of light are an effect of the observer's time frame, which in and of itself, is a function of his/her velocity relative to the PFSRT.

And as previously explained, if the observer's rate of time and his/her perceived motion distance are directly proportional to one another, as well as inversely proportional to the perceived speed of light, then the velocity of light always remains at (c) for all inertial observers (d/t = (c) or t = d/c) irrespective of the observer's time frame (not using the measuring stick distance).

In addition, assuming PFSRT is apropos, then, the observer's rate of time (velocity relative to the PFSRT) proportionally and equally effects the perceived laws of physics, again pertaining to all inertial frames (using, again, only the mathematics of both motion distance and perception of velocity and not the measuring stick distance). Thus, regarding PFSRT, as with SRT, the laws of physics are the same in all those frames.

Notice, both theories are from the viewpoint of the observer (SRT and PFSRT). With respect to SRT, (c) is relative to the observer (c in empty space) irrespective of different observer inertial frames. Accordingly, there is no preferred frame. Then again, concerning PFSRT, the observer's perception of (c) is related to his/her velocity relative to a preferred frame (PFSRT) (not using the measuring stick distance).

**In a nutshell, here is the critical difference: With SRT, (c) is constant in empty space (= (c) relative to the observer of SRT) and the laws of physics are identical in all observer inertial reference frames, but with PFSRT, all is ultimately a function of the ether.**

In other words, as opposed to that SRT example which was presented at the onset of this chapter (Amber and you), where the assumption of (c) from the observer's frame, determines time and distance (c = d/t), but only as a mathematical function, with no corporal attribute as for why, PFSRT alternatively posits that the speed of light is actually a product of a true three–dimensional physical ether (PFSRT).

## 1.12 Epilogue

After completing Chapter 1, the author recognized that the novel concepts as just presented above in this chapter are very intricate, abstract, and confusing, especially the idea of distance. So, in order to clarify the new theory (PFSRT), a re–explanation from a more thorough perspective is now offered.

The primary purpose of this epilogue is to demonstrate to the reader the interrelation-ship/ connection of the measuring stick distance and the motion distance, both as a function of the observer's time frame. To be more specific, this sequel will show how the overall interconnection relates to the observer's →perception← of the velocity of light and his/her →perception← of the motion distance applicable to the new PFSRT. However, before apprais-ing the following section, for ease of comprehension, one must understand the concepts/lexicol-ogy as just conveyed in Chapter 1; otherwise, it will be very difficult for one to appreciate the meaning/relevance of this postscript.

Einstein's SRT assumes there is no preferred frame, moreover, no ether, so all–inertial mo-tion is relative. In addition, the theory assumes (c) is relative to the observer (c constant in empty space) regardless of the observer's rate of inertial motion. Therefore, with respect to the observer, as a function of an object's velocity, its (object) distance and time change (di-rect/indirect/LTF), nevertheless only mathematically centered on (c). Accordingly, for all that above, the laws of physics are identical within all inertial reference frames. **It also posits there is no distinction between the measuring stick distance (physical length of matter, i.e., ruler) and the motion distance (d = r x t), as a function of the observer's rate of time.** Alternatively, PFSRT posits there is the ether (preferred frame). Furthermore, it is the re-sistance derived from the ether to the acceleration of objects/matter/observer that gives rise to inertial mass and the rate of time. This concept was previously explained and illustrated in the beginning of Chapter 1 and can be easily understood/visualized.

However, the difficult part to grasp is how the observer's rate of time (velocity relative to the ether) correlates to that observer's →perception of motion distance←. This is because **PFSRT, as opposed to SRT, posits that the measuring stick distance and the motion distance (d = r x t) are two distinct things.** This is a core difference between the two theories (PFSRT vs. SRT). Fundamentally, in order to appreciate how the two theories differ from one another (PFSRT vs. SRT), this one key factor must be accepted.

In all probability, it is very challenging for the average individual to understand how the measuring stick distance (physical length of matter, i.e., ruler) and the motion distance (d = r x t; = a function of time/motion) in conjunction with one another relate to the observer's time frame vis–*a*´–vis his/her *overall perception* of the concept of distance. Therefore the author presents the following 18 disparate attributes, which, when woven together, give explanation to this concept. The ideas portrayed below focus primarily, but not exclusively, to PFSRT rather than SRT. Even so, both SRT and GRT are referred to and labeled in the attributes (see directly below).

Bear in mind, that before proceeding, some of the following attributes depicted involve gravity/gravitational field, therefore, not specific to PF ST/SRT. Th e author has composed it in this manner for simplicity of explanation as to how the measuring stick distance and the motion distance relate to each other as a function of the observer's time frame, which for the latter, in the specific case of PFSRT, is a function of the observer's velocity relative to the ether (PFSRT). Gravity/gravitational field will be deliberated in Chapter 2 **(PFGRT)**.

Here are the 18 disparate attributes.

1. One way to determine the distance to the closest stars is by observing their changing orientations whenever the Earth is located on opposite sides of the Sun compared to other illuminating objects which are sited exceedingly distant from the Sun (i.e., galaxies/quasars). As a result, by using trigonometry, one can then calculate their distance. This is a measuring stick distance.

2. In the same manner, one can calculate the distance to the planets and Sun by using trigonometry, again a measuring stick distance,

3. In contrast, the motion distance is a function of time (d = r x t), or in the case of light, the equation is (d = c x t). This is not the same concept as the measuring stick distance (physical measured length of matter). They are two separate entities.

4. When the speed/velocity of light was calculated by using the occulting orbiting moons of Jupiter (R¨omer), the trigonometric measuring stick distance was correlated to the time divergence of occultation as a function how far the Earth was from Jupiter, as both revolve about the Sun in different orbital patterns. This determination then gave the value for the speed of light. Take note, the time frame used was only from the specific reference frame of the observer on Earth.

5. In addition, all speed of light experiments, performed on Earth, always correlate the measuring stick distance with a given observer rate of time (e.g., Fizeau and Foucault), which for us (observer) is again the local frame of time on the Earth's surface. In essence, with respect to the observer situated on Earth, there is no other time frame possible.

6. Fundamentally, from our Earth reference frame, we incorporate the measuring stick distance into the equation of (d = r x t). We observe and define it that way for this is our only frame of reference (our observations). In effect, on the surface of the Earth, we (observer) are confined to and trapped within this specific time frame. →The measuring stick is the constant whereas the motion distant distance varies as a function of the observer's rate of time/motion←.

7. However, if we (observer) could, in fact, change our Earth frame of time, we would then incorporate the constant (measuring stick distance) with this new time frame relative to the equation (d = r x t*). The t* represents the new time frame, which is the variable. As a result, the equations would remain the same, but the numerical values and geometry would differ between those two observer frames—so the comparison between 6 and 7 is (d = r x t) vs. (d = r x t*). In addition, recall rate is a function of time; therefore, the contrast between 6 and 7 is also (r = d/t) vs. (r = d/t*).

8. On one hand, using only the mathematics of SRT where the measuring stick distance and the motion distance are indistinguishable, then with respect to and within different inertial frames, there is no difference in the velocity of light (c), and the laws of physics are identical.

9. On the other hand, vis–á–vis PFSRT, whereby the measuring stick distance and the motion distance segregate, then when comparing diverse inertial observer time frames, the velocity of light of laws of physics will diverge between those frames, because distance is defined/observed in a different way again between those frames (d = r x t) vs. (d = r x t*).

10. The problem/confusion associated with PFSRT is that one cannot equate different observer inertial time frames by using the equation/mathematics of (d = r x t) vs. (d = r x t*) →plus the measuring stick distance←, since, in this specific case, when the observer's rate of time changes between those frames (the observer's velocity relative to the ether), it then alters the definition of distance (therefore, the velocity of light t differs from t*) In other words, both the notion of motion distance and the velocity of light are a function time (c = d/t and d = r x t). As a result, that comparison mathematical outcome between varied observer time frames then

does not make common sense, again (d = r x t) vs. (d = r x t*) and (v = d/t) vs. (v = d/t*) and (rate = d/t) vs. (rate = d/t*), moreover, along with the use of the measuring stick distance.

11. (Specific to the mathematics of SRT) SRT presumes (c) is relative to the observer (c in empty space) regardless of the observer's velocity.

12. (Specific to the mathematics of GRT) GRT assumes a universal constant (c). Accordingly, the individual/observer perceives the velocity of (c) so long as the observer and light are in the same reference frame.

13. (Specific to the mathematics of GRT) Now, our (observer) only reference frame for the speed of light/motion distance (c = d/t and d = r x t) is a function of our local time frame on Earth. We have no ability to change our Earth rate of time and observe the speed of light from that other frame. We presume by using only the mathematics of GRT that the speed of light is (c) within all the different reference frames of time as long as the observer and light are in the same frame. Nonetheless, there is no observational/experimental proof that this presupposition is so. It is purely a mathematical concept/assumption.

14. (Specific to PFSRT) Alternatively, regarding PFSRT, because the motion distance and the measuring stick distance are two separate things, one cannot compare dissimilar observer time frames by using the equation (d = t x r) since the amalgamation/interconnection/synthesis of the two concepts is specific to each separate time frame (divergent).

15. (Specific to PFSRT) But this also means that when comparing different observer time frames, the equations regarding the laws of physics are identical, but the numerical values and geometry are dissimilar.

16. (Specific to PFSRT and PFGRT) The moon's surface has a decreased gravitational field contrasted to Earth, therefore, an infinitesimally small faster rate of time compared to that on the surface of the Earth.

17. (Specific to PFSRT/PFGRT) Now presuppose on the surface of the Moon, that we carry out all of the speed of light experiments that have already been implemented on the Earth's surface. For that reason, one would observe a minuscule difference in the value of the speed of light compared to that on Earth, infinitesimally slower but, in fact, real. In addition, the laws of physics would also differ, not the equations, but the numerical values and geometry (e.g., F = m x a). Recall the fact that those laws and the velocity of light involve the concept of distance, which changes between diverse observer time frames because the amalgamation/synthesis of the motion distance and measuring stick distance are observed/defined as different between those frames.

18. (Specific to PFSRT/PFGRT) Furthermore, by using these principles, an observer located just external to the event horizon of a black hole will then perceive the speed of light as markedly different compared to if he/she were on the Earth's surface. Furthermore, the greater the difference regarding his/her rate of time, the more the divergence of velocity. Once more, the laws of physics would also differ, not the equations but only the numerical values and geometry (e.g., momentum = m x v). Again, those physical laws and the velocity of light incorporate the concept of distance, which changes between divergent observer time frames given the fact the amalgamation/synthesis of the motion distance and measuring stick distance are observed/defined as different between those frames.

The intention of this epilogue was not to reinterpret from a different perspective the entire new proposed PFSRT, but rather to specifically focus on the confusing/abstract concept of the relationship of how the motion distance (d = r x t) and the measuring stick distance relate to PFSRT vs. SRT, moreover depending on those different assumptions (PFSRT vs. SRT), how the outcomes are different (PFSRT = ether vs. SRT = no ether). Therefore, after evaluating this section and rereading Chapter 1, the explanations may now be clearer. Hopefully, then, even though the subject is still complex, one will have a better appreciation/understanding of the new PFSRT.

One more time. The following is an additional explanation of the new PFSRT, however, now with an accompanying illustration. It portrays the new PFSRT from two different perspectives as referenced below.

**Perspective A**

The new PFSRT, whereby only the motion distance (d = r x t), a function of the observer's time frame, is used alone →without incorporating the measuring stick distance← (physical measuring length of matter = constant). This is purely a mathematical description, and its outcome (A) is somewhat similar to Einstein's SRT; nevertheless, there is now an ether. Again, →it is only mathematical concept and not real←.

**Perspective B**

The new PFSRT, wherein the motion distance (d = r x t) is used →along with the measuring stick distance← (physical measuring length of matter). The outcome (B) of this theory is totally different compared to Einstein's SRT since the →perception← the velocity of light and the laws of physics are divergent when comparing different observer time frames; moreover, there is also again an ether. →This is the real the theory. ←

See Figure 1.17 below.

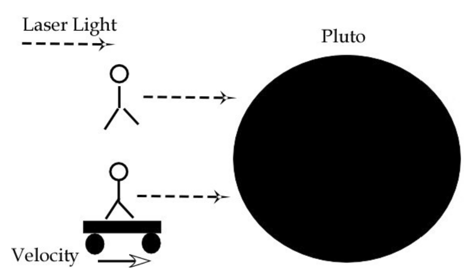



**Figure 1.17**

- *Black circle = Pluto.*
- *Observer A (top) at rest with the ether (PFSRT) is shining a laser light towards Pluto.*
- *Observer B is on the cart at a velocity relative to the ether (PFSRT) (.7 c) again shining a laser light towards Pluto.*
- *Observer A and observer B are at an equal interval of the ether (measuring stick distance) from Pluto, both simultaneously shining a laser light towards Pluto.*
- *The dotted line with the hollow arrowheads represents the movement of laser light towards Pluto. Take note, the movement of light has no time element (constant); thus, the observer's time frame converts that concept of movement (constant) into his/her perception of the velocity of light.*
- *Observer B's velocity relative to the ether (PFSRT) is greater than A's. Consequently, observer B's rate of time is slower than A's (time dilation) and observer B's inertial mass is greater than A's.*
- *Observer B's rate of time (t*) contrasts with observer A's rate of time (t) differentiated by the asterisk. (t*) is slower than (t); therefore, the equations, when comparing these two different observer time frames would be (d = r x t) vs. (d = r x t*), (v = d/t) vs. (v = d/t*), and (r = d/t) vs. (r = d/t*).*
- *Observer A: Therefore, from that observer's perception/observation/definition, he/she would then incorporate the constant (measuring stick distance = length of measured matter/ether) into the motion*

*distance (d = r x t). This equation is a function of the observer's rate of time (t). Additionally, the equation of r = d (measuring stick distance)/t is also a function of the observer's time frame.*

- *Observer B: Therefore, from that observer's perception/observation/definition he/she would then incorporate the constant (measuring stick distance = length of measured matter/ether) into the motion distance (d = r x t*). This equation is a function of the observer's rate of time (t*). Furthermore, the equation of r = d (measuring stick distance)/t* is also a function of the observer's time frame.*
- *Observer's A time frame (t) is different from observer B's time frame (t*). Therefore, observer (A vs. B) →perception← of both distance and velocity differs between those frames. (d = r x t) vs. (d = r x t*), (v = r/t) vs. (v = r/t*), and (r = d/t) vs. (r = d/t*). So one cannot use the classic equations (d = r x t),(v = d/t) and (r = d/t) when comparing diverse observer frames of time along with the use of measuring stick distance.*

---

**Perspective A**

The following conception (A) with reference to PFSRT uses only the equations of (d = r x t), (v = d/t), and (r = d/t), moreover, **without the use of the measuring stick distance**. If so, then with respect to different observer time frames (Observer A vs. Observer B), the perception ← of the movement of light (no time element) and the →perception ← of the motion distance (d = r x t) counteract one another, accordingly, maintaining the observer's →perception← that the velocity of light is c, regardless of that observer's time frame. This is only a mathematical explanation and not rea←. See below.

1. (PFSRT - **distance)** The time frame of the observer and his/her →perception← of only motion distance within that same frame are →directly proportional← to one another, irrespective of diverse observer frames of time (d = v x t). This is purely a mathematical concept, furthermore, not with the use of the measuring stick distance. →The author again emphasizes that this is purely a mathematical concept and not real.←
2. (PFSRT – **velocity**) The observer's time frame and his/her →perception← of velocity within that same frame are **→inversely←** proportional to one another, notwithstanding different observer time frames (v = d/t). This is only a mathematical construct, not with the use of the measuring stick distance. →Once again, this is only a mathematical explanation and not real←. Recall that the movement of light is a constant with no time element, but the observer's time frame (velocity relative to the ether) converts that constant movement of light into his/her →perception← of velocity, because the →perception← of velocity is a function of the observer's time frame.
3. Therefore, using **only** the mathematical equations as given above (d = t x r) and (v = d/t) without the distinction between the motion distance and the measuring stick distance, when there is no differentiation of the perceived velocity of light between t and t*. So regardless of the observer's time frame, his/her → perception← of velocity of light remains constant at c Again, this is because with respect to any given observer's rate of time, Both the →perception← of distance and the →perception← of velocity (light) always interact/counteract (**direct** and **inverse**) with one another in such a way as to maintain the → perception← of c relative to the observer (not using the measuring stick distance). → One more time, this is a mathematical explanation and not real←.
4. In addition, the laws of physics also remain constant relevant to different observer time frames, yet again, because those laws are based upon the →perception← of distance and the →perception← of velocity, both functions of the observer's time rate as just elucidated in 3 above, whereby they counteract one another (direct/inverse), therefore, leaving those laws of physics unchanged between diverse observer time frames (not with the use of the measuring stick distance).

5. So overall, just like Einstein's SRT, PFSRT is very similar; nevertheless, there is now an ether. →This is only a mathematical explanation and not real←.

**Perspective B**

The following conception (B) regarding PFSRT uses the equations of (d = r x t), (v = d/t) and (r = d/t) but now **with the use of the measuring stick distance**. If so, with respect to different observer time frames (Observer A vs. Observer B), the →perceived← velocity of light and the perceived laws of physics will then differ between those diverse frames of time, not the equations, but rather, the numerical values and geometry. See below.

1. Now, with respect to PFRST, whereby the measuring stick distance (constant = length of measured matter/ether) and the motion distance (a function of the observer's rate of time = variable) segregate (not the same thing), then the observer's →perception← of the velocity of light and the observer's →perception← of the motion distance will differ between various time frames (d = r x t) vs. (d = r x t*), (v = d/t ) vs. (v = d/t*) and (r = d/t ) vs. (r = d/t*).

2. So, relative to perspective (B), when comparing diverse observer time frames, →perceived← motion distance (direct) and →perceived← velocity (inverse), now, unlike perspective (A), in this instance, to not counteract one another in such a way as to maintain the velocity of c, relative to the observer, regardless of their different time frames.

3. In addition, the →perceived ← laws of physics also differ when contrasting diverse observer frames of time, again, because, as in 2 above, perceived distance and perceived velocity diverge, vis–á–vis disparate observer time frames; they now, as opposed to perception A, do not counteract one another (direct/inverse). Thus, those laws of physics will vary when comparing different observer time frames (using the measuring stick distance), though in this case, only the numerical values/geometry but not the equations. **This is the real theory**.

→In conclusion, one cannot mathematically describe the new PFSRT using the equations (d = r x t) and (v = d/t), along with the measuring stick distance, when comparing divergent ob- server time frames (velocity of the observer relative to the ether). An entirely new mathematics would be required beyond the capability of this author←.