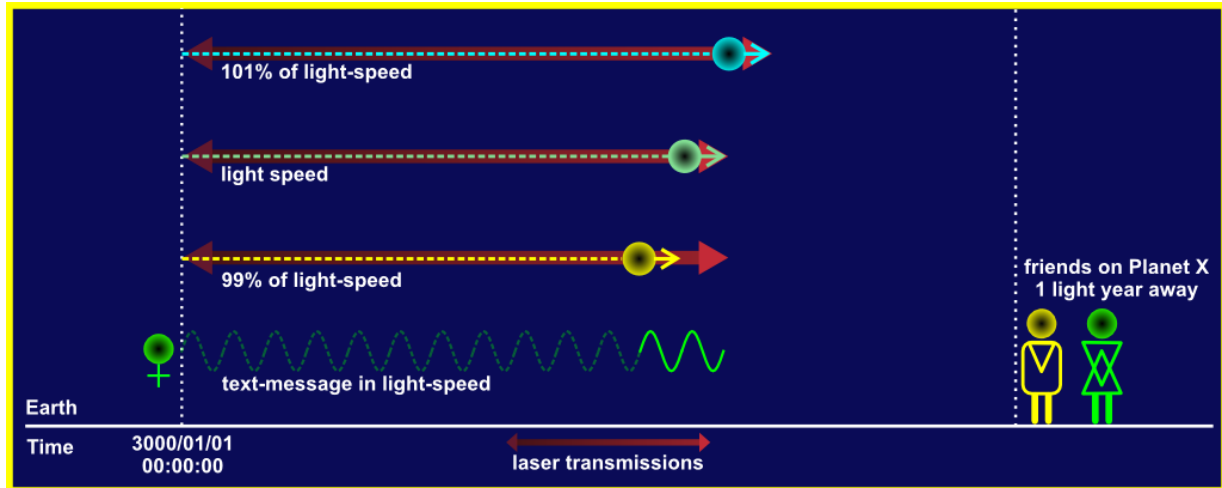


## Delusion of Time Dilation

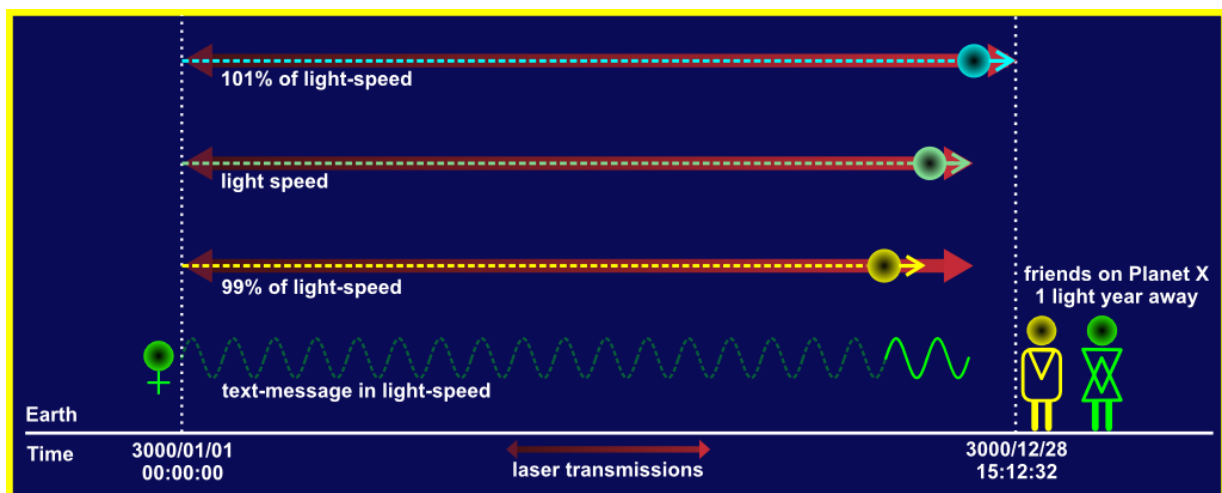
時間膨脹的迷惑

Time Can Not Be Recycled

Cres Huang



Light Speed Flights



First Arrival of Blue Ship,  
No Time Dilation on Ship and Text Message

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## Abstract

Time is only the reference of actions measured by other actions, *e.g.* dripping water, burning candle, sunrise, moonset, etc. So is the reference of size measured by the length of a yard stick, or other measurements. They don't exist in natural. They are information, not the participants, and can not interact with (or alter) the universe. Consider these issues:

- Earth's orbital speed is about 30 km/s (Mach 87.6). Solar System is about 220 km/s (Mach 640), and the speed of Milky Way unknown. In such hyper-sonic speed, wouldn't time continue to dilate on Earth?
- Hubble Space Telescope orbits 28,000 km/h (Mach 22.9). It is riding on the hyper-sonic speed of Earth. Will it disappear back to past eventually?
- Atomic clock essentially is the relation of time and speed. Can we increase the oscillations of atomic clock (speed) to slowdown time?

Progression of the universe, time, and clock are independent. Clocks can drift, yet, it is absolutely independent of time. Likewise, we can redefine time, nevertheless, altering time does not alter the actions of the universe, as of changing the length does not change the size. The issue is, can we suppose the expansion or contraction of a yard stick meant the space has changed?

Space and time are completely independent. Space has existence and absolutely recyclable. However, time does not exist, it is massless, actionless, contains no energy. Among all, TIME CAN NOT BE RECYCLED! Universe does not care about time. When matter, energy, and space are in place, it will continue regardless of time.

Personally, I can't think or any power can top the capability of manipulating the progression and reversal of the universe. It is very ancient fantasy. Nevertheless, hasn't our obsession with time and speed clouded our judgment?

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# 1 Introduction

Speed is a subjective measurement. It is reference dependent comparison. For example, all objects on the Earth are riding on the compounded velocities of Earth, Solar System, Milky Way, and probably beyond, *i.e.* the super domain of Milky Way. The measurements are different in reference to the Earth, Moon, Sun, outside of the Solar System, etc. Logically there are infinite measurements of speed for the same motion of an object. In real world, there are measurements essentially identical to speed:

1. Speed:

$$Speed = \frac{distance}{time}$$

2. Income:

$$hourly\ wage = \frac{amount\ of\ paycheck}{hours\ worked}$$

3. Fuel consumption:

$$GPH = \frac{gallons\ of\ fuel\ consumed}{hours\ of\ operation}$$

4. Progress report:

$$progress(\%)\ per\ day = \frac{percentage\ completed}{total\ workdays}$$

5. Traffic:

$$customers\ per\ hour = \frac{total\ number\ of\ customers}{hours\ of\ operation}$$

6. Frequency:

$$frequency = \frac{cycles}{period}$$

7. Clock:

$$atomic\ frequency = \frac{oscillations\ of\ atom}{second}$$

There are also numerous measurements in real world are analogous to speed:

1. Speed:

$$average\ days\ per\ lunar\ month = \frac{total\ count\ of\ sunset}{total\ count\ of\ fullmoon}$$

2. Income:

$$\text{revenue per } ft^2 = \frac{\text{total amount of rent}}{\text{total number of footage}}$$

3. Fuel consumption:

$$GPM = \frac{\text{gallons of fuel consumed}}{\text{miles traveled}}$$

4. Progress report:

$$\text{progress(\%)} \text{ per worker} = \frac{\text{percentage completed}}{\text{total number of workers}}$$

5. Traffic:

$$\text{customers per cashier} = \frac{\text{total number of checkouts}}{\text{total number of cashiers}}$$

6. Frequency:

$$\text{frequency} = \frac{\text{wave speed}}{\text{wave length}}$$

7. Clock:

$$\text{minute} = \frac{\text{droplet count}}{\text{hourglass}}$$

The question is, can any of the variables in the left side of the equations (speed) alter the denominator (time) or numerator? For example, can work hour (time) be dilated by high pay job (speed - faster accumulation of income)?

## 1.1 Speed and Time

We understand the basic concept of these simple formulas,

$$\text{speed} = \text{change in distance} \div \text{change in time}$$

$$\text{change in time} = \text{change in distance} \div \text{speed}$$

$$\text{change in distance} = \text{speed} \div \text{change in time}$$

They work very well for us since ancient to modern high-tech. We also understand all variables have to be independent for the equations to be logically and mathematically sound.

Atomic clock essentially is the relation of time and speed. Can we increase the oscillations of atomic clock (speed) to slowdown time?

Consider the Earth's orbital speed is about 30 km/s (about Mach 87.6) 80, the Sun's is 220 km/s (Mach 640), and the speed of Milky Way unknown. In such hyper-sonic speed,  
20 hasn't time continue to dilate on Earth?

The orbital speed of Hubble Space Telescope is 28,000 km/h (Mach 22.9) riding on the hyper-sonic speed of Earth. Will it disappear back to past eventually?

Nevertheless, the relation of speed and time is somehow confused. Many paradoxes just can not be comprehend by the entanglement of speed and time, Section 9.

25 Astronomer Mike Hawkins in his study has shown the constant pulsating quasars with high redshift[2]. Pulsation is also frequency, it has to be stretched or compressed precisely concise with the Doppler redshift of the quasar. Observed constant pulsating quasars with high redshift not only contradicts to time dilation[10] but also space expansion[4].

This article will study the relations of speed, space, and time to gain better understand-  
30 ing of time and motion in space.



---

## 2 Visiting Friends on Planet X

Suppose a person has a spaceship that can travel very high speed. He plans to leave the Earth on Wednesday at 00:00:00 UTC , January 1, 3000, (Julian date 2816787.5) to meet his friends on Planet X located one light year away. His trip is depicted in Figure 1.

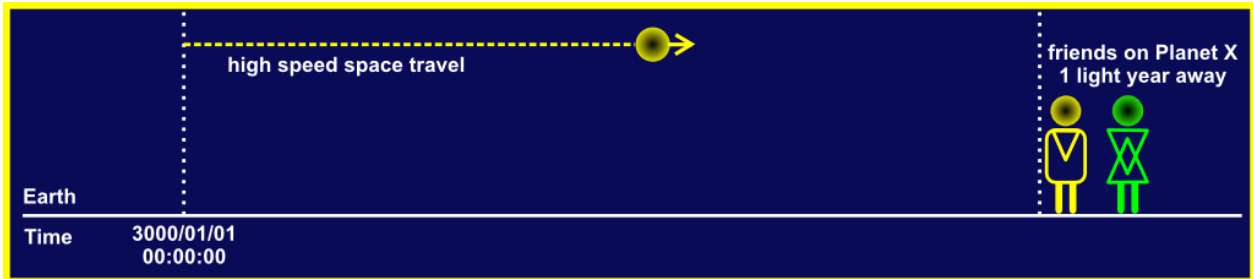


Figure 1: High Speed Space Travel

Further assumptions:

- The calendar and clock of the Earth, on-board spaceship, and the Planet X are synchronized.
- The distance between the Earth and Planet X remains unchanged at exactly one light-year (365.25 light-days or 8,766 light-hours).
- The location of Planet X remains unchanged. *i.e.* the distance to travel is fixed, he does not have to chase it down.
- All other conditions remain unchanged.

We can use the simple equation to calculate the duration of his journey:

$$\text{travel time} = \frac{\text{distance to travel}}{\text{average speed}}$$

For example:

1. It will take ten years if his average speed is 10% of light speed, (365.25 ÷ 10%),
2. three years at 1/3 of light speed, (365.25 ÷ 1/3),
3. two years at half of light speed, (365.25 ÷ 50%),
4. 487 days at 75% of light speed, (365.25 ÷ 75%),

---

50 5. about 369 days at 99% of light speed, ( $365.25 \div 99\% = 368.\overline{93}$ ), and so forth?

He can plan his trip easily. Fuel and supplies will be well prepared for the safety of his journey. However, why some physicists confuse us with time bending capability of speed, time dilation? Now there are very complex issues of his travel:

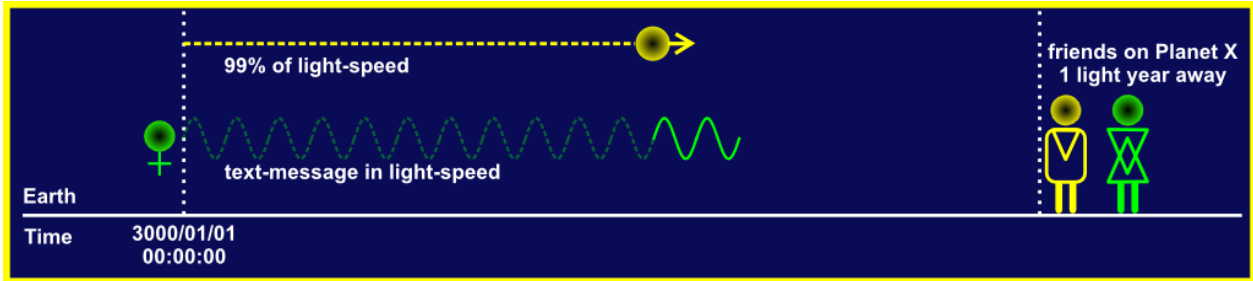
1. Will it be ten years if his average speed is 10% of light speed?
- 55 2. Two years at 50% of light speed?
3. If his speed varies from 30% to 75% in first half of the trip, and 95% to 99% in second half, how to calculate time dilation and arrival time?
4. If his speed measured by flight control on Earth and Planet X is 99% of light speed, how he knows his true speed based on the ticking-slower clock on board?

60 We understand his on-board clock or his bio-clock can tick slower or faster on Earth or in flight. They can be affected by the environment, and certainly his bio-clock if he is kept frozen. However, the issue is *time* not the clock. Since time is the base of speed, if time is bent by speed, then speed has to change due to bent time, and then time is bent again by changed speed, and so forth?

65 The question is, can he reach Planet X earlier or later than  $368.\overline{93}$  days in time dilation, if his average speed is exactly 99% of the light speed?

### 3 Control Set

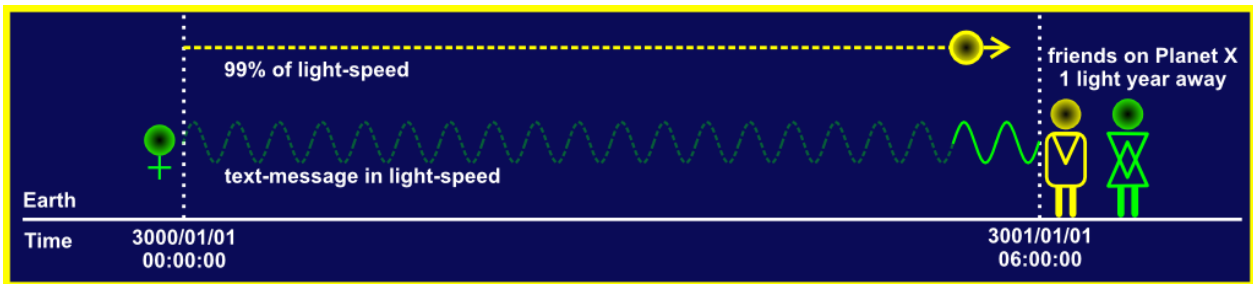
Suppose his wife text-messages their friends at the exact time of his departure, as depicted in Figure 2.



70

Figure 2: Text Message to Friends on Planet X

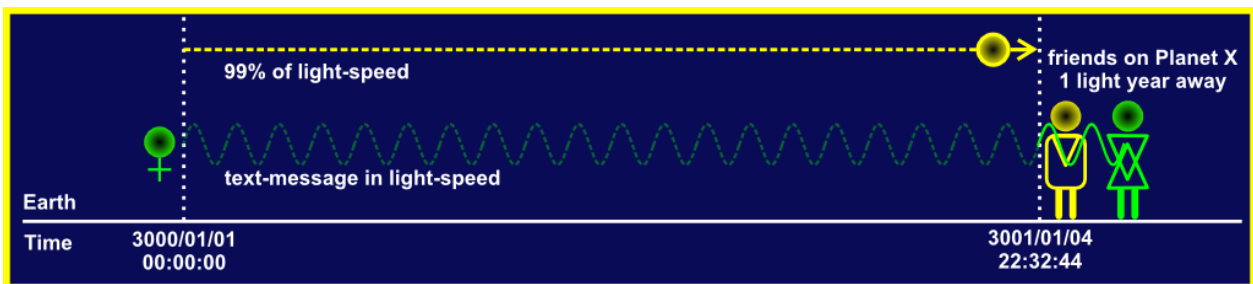
Here, the light-speed text message serves as a control set. It will take 365.25 days to reach their friends. We expect their friends will receive it at 06:00:00, January 1, 3001, Thursday ( $2816787.5 + 365.25 = 2817152.75$  Julian), as depicted in Figure 3.



75

Figure 3: Arrival of Text-message

Logically, he is supposed to arrive by 22:32:44, January 4, 3001, Sunday ( $2816787.5 + 368.\overline{93} \approx 2817156.4394$  Julian), as depicted in Figure 4.



80

Figure 4: Arrival of Spaceship

We understand it is impossible for him to arrive at the same time with the text message or earlier. However, averaging exactly at 99% of the light speed, isn't it also impossible for him to arrive later than  $368.\overline{93}$  days?

---

## 4 Laser Transmission

85 Suppose his spaceship is also equipped with a laser transmitter capable of reaching further than many light-years. It will be turned on at the time of his departure, and continue to transmit to his friends and back to his wife until arrival. We expect the first part of laser transmitted at the point of departure will reach Planet X at the same time with the text-message, at 06:00:00, January 1, 3001, Thursday (Julian date 2817152.75), as shown in  
90 Figure 5.

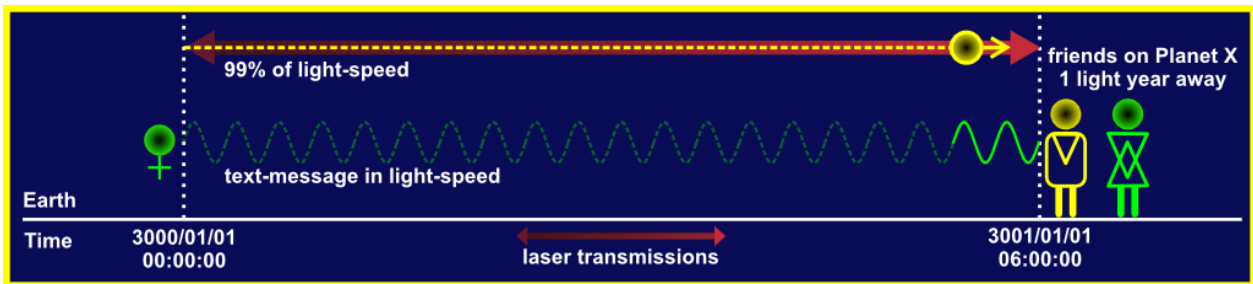


Figure 5: Arrival of On-board Laser Transmission

Unlike the short duration of text-message sent from a relatively fixed location on Earth, the laser is a long beam transmitted continuously from different locations en route. Time  
95 dilation will make his time (and clock) out of sync with the Earth and Planet X. It is also accumulating en route. The further he travels, the more his time drifts behind. Then, the transmission of laser at next location will be earlier on the time scale of Earth and Planet X. Somehow the laser transmission is reversed. The closer to Planet X he is, the earlier the transmission at Planet X's clock (Earth's as well). This means that laser transmission will be  
100 received by his friends in reverse order. On the other hand, there is no way of determining the order of receiving by his wife. Consider time dilation is varying with his speed, what if he stops for few seconds, then time dilation disappears and resumes afterward. How could it be?

Again, there is no contradiction when there is no time dilation. Laser transmissions from  
105 different locations will arrive in proper order to his friends and wife. His ship, text-message, and laser transmissions will arrive in logical and physical order, that can be calculated beforehand. It is logically and mathematically consistent with studies in signal transmissions on Earth.

There is an interesting phenomenon of the laser transmission in this case. It is trans-  
110 mitted for 368.9394 days, on at 2816787.5 Julian (00:00:00, January 1, 3000), and off at

---

2817156.4394 Julian (22:32:44, January 4, 3001). However, the first receiving by his friends is at 06:00:00, January 1, 3001, and lasts till 22:32:44, January 4, 3001, upon his arrival. Their receiving of the transmission lasts only 3.6894 days (2817156.4394–2817152.75). The 368.9394 light-day transmission to his friends has been compressed into 3 days 16 hours 32  
115 minutes and 44.16 seconds (Doppler blueshift).

On the other hands, the laser transmission back to his wife will be stretched (Doppler redshift). The last part of transmission is from Planet X. It will take 365.25 days to reach back to her. She will receive the end transmission at 04:32:44, January 5, 3002, Tuesday, 2817521.6894 Julian (2817156.4394+365.25). Her receiving lasts 734.1894 days (2817521.6894–  
120 2816787.5). The 369 light-day transmission to his wife has been stretched to 734 days 4 hours 32 minutes and 44.16 seconds.

However, there is no way of calculating the Doppler effect of laser transmission in time dilation, even he maintains constant speed, let alone if his speed varies.

## 5 Wife in Her Own Spaceship

125 Let's say his wife comes along at the same time in her own spaceship. Her ship is able to average 99.1% of light speed, as shown in Figure 6.

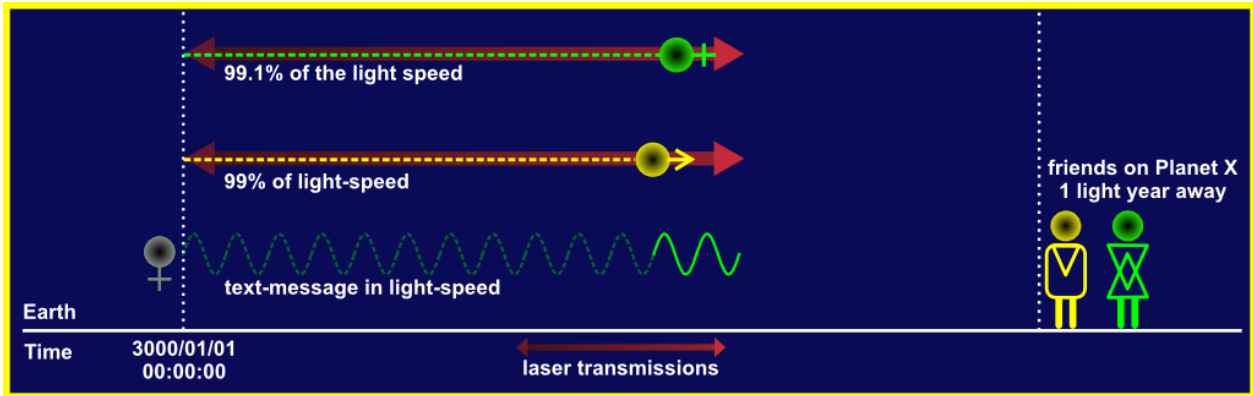


Figure 6: Wife in Her Own Spaceship

130 When there is no time dilation, it will take her about 368.567 days averaging at 99.1% of light speed, ( $365.25 \div 99.1\%$ ). We expect she will arrive by 13:36:37, January 4, 3001, some 8 hours 56 minutes and 6 seconds earlier than him.

We also expect the first part of laser transmitted from both ships at the point of departure will reach Planet X at the same time with the text-message, at 06:00:00, January 1, 3001, as shown in Figure 7.

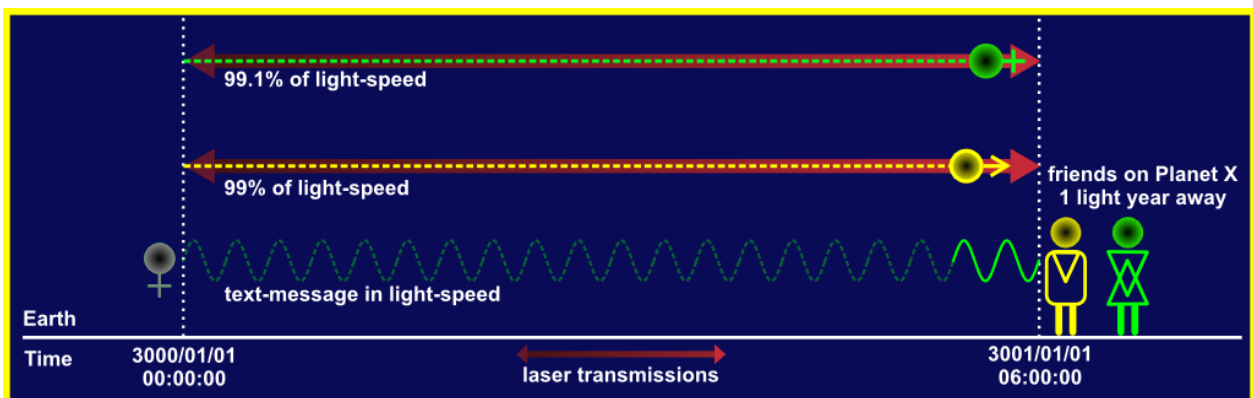


Figure 7: Arrival of laser transmissions and text-message

Since her last laser transmission is 8 hours and 56 minutes earlier than his, it will return to Earth by 13:36:37, January 4, 3002, earlier than his by the same amount of time, as shown in Figure 8.

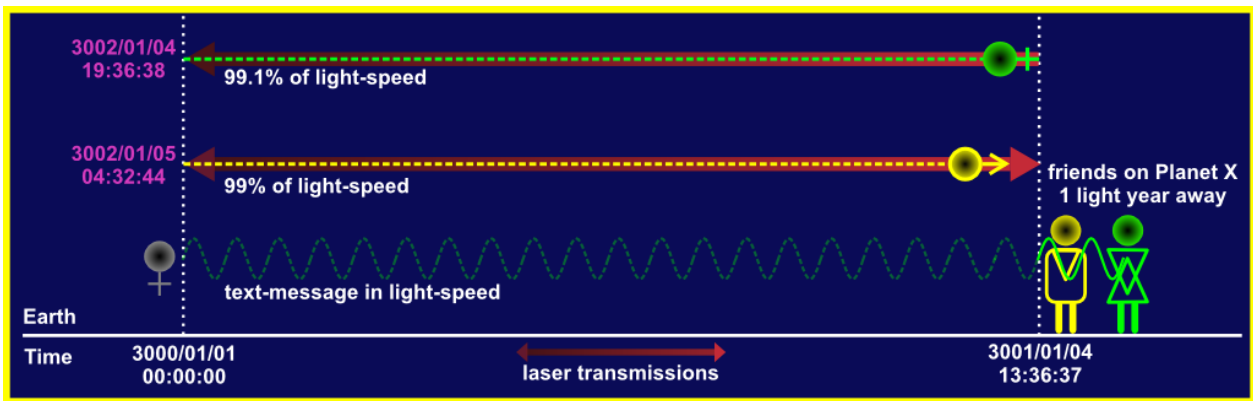


Figure 8: Return of Laser Transmissions

140 There is no paradox of time among spaceships, laser transmissions, text-message, Earth, and Planet X. However, who will arrive first if time is dilated by different speed? Isn't it possible that she will arrive later (in Planet X's calendar), since her time is further dilated due to higher speed?

Not only she has her time dilation to her husband, the Earth, and, Planet X. There will be very high time dilation to the Earth and Planet X, but small in reference to him. And, he has his own time dilation based on slower speed. There will be intertwined time dilations among her ship, his ships, Planet X, and the Earth, isn't it?

150 What if Planet X and the Earth are drifting apart, or they slow down (not necessary together) to enjoy the scenery from time to time? Since laser transmission frequency is base on time, what will happen in time-dilated path of travel? Can she maintain communications (laser transmissions) with him in small dilated time? How about the control center on the Earth, or her friends in high time dilation? Isn't the complexity of time dilation beyond 155 comprehension, or logical? Nevertheless, can they plan their time-dilated trips and meet their friends on (or, in) time?

## 6 High Speed Travel

Suppose there are spaceships capable of traveling at or faster than the speed of light. Three ships are planned to visit Planet X along with the text-message sent by his wife at 00:00:00 UTC , January 1, 3000, (Julian date 2816787.5). As depicted in Figure 9. The blue ship will average at 101% of the speed of light, green ship at light speed, and yellow ship at 99%, and all ships have their laser transmission aiming at the Earth and Planet X. All ships are equipped with constant laser transmission aiming at the Earth and Planet X.

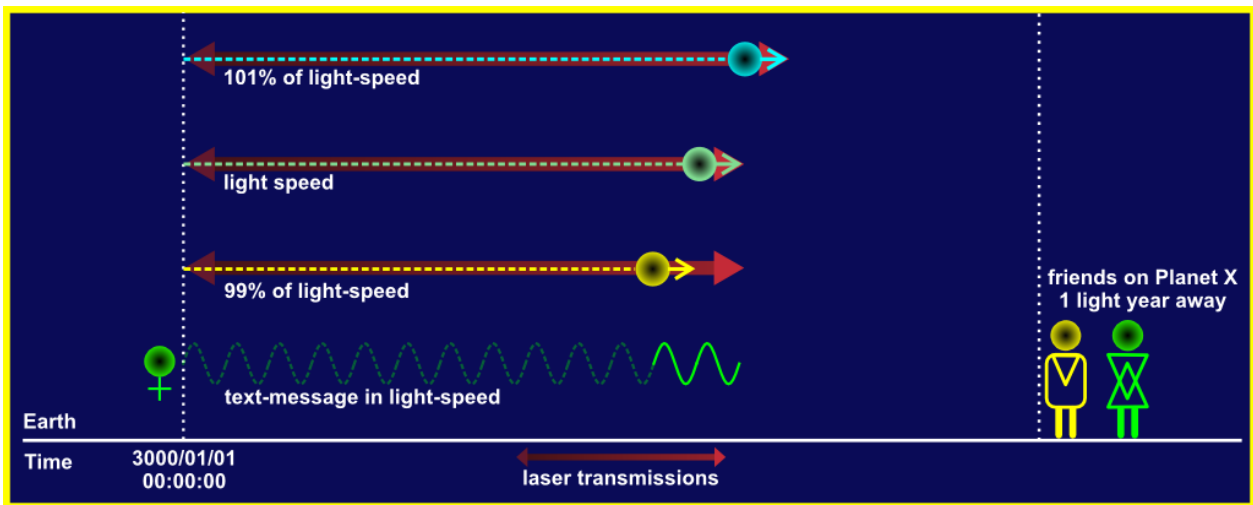


Figure 9: No Speed Limit Flights

We would expect the durations of their journeys:

1. about 361.634 days for blue ship, ( $365.25 \div 101\% = 361.\overline{6336}$ ),
2. 365.25 days, green ship at light-speed,
3. about 369 days, yellow ship, ( $365.25 \div 99\% = 368\overline{93}$ ),
4. 365.25 days, text-message at light-speed, as a control set.

And the order of estimated arrivals, as depicted in Figure 10:

1. 15:12:32, December 28, 3000, blue ship.
2. 06:00:00, January 1, 3001, text-message and green ship.
3. 22:32:44, January 4, 3001, yellow ship.



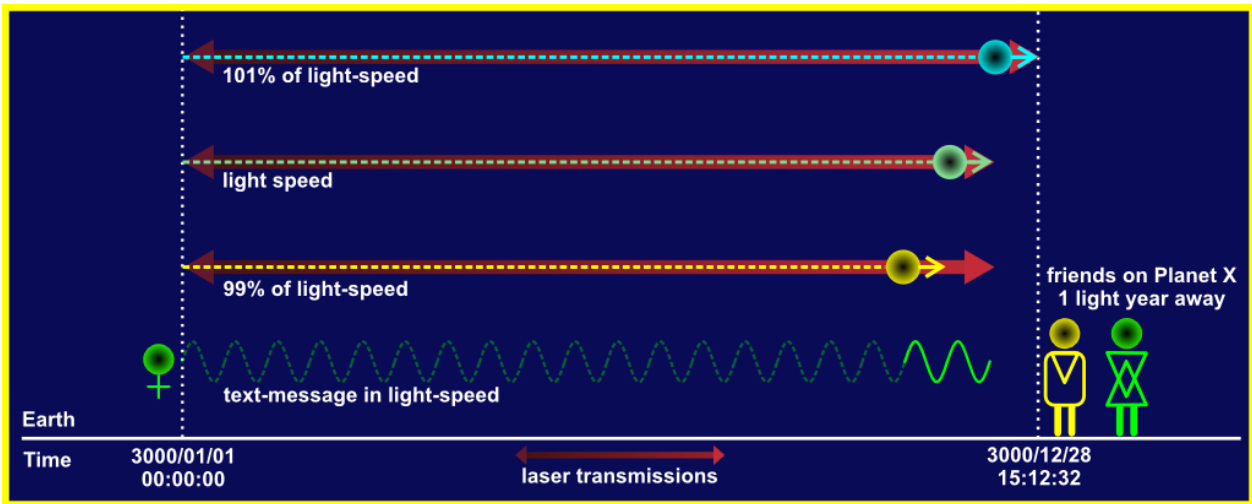


Figure 10: First Arrival of Blue Ship

However, it is impossible to plan their travel with time dilation. The paradoxes are:

1. Would blue ship arrive Planet X later than the text message if it's average speed is exactly at 101% of the light speed?
2. Would blue ship arrive Planet X earlier or later than the text message if it's average speed is exactly at the light speed?
3. Would yellow ship at 99% of the light speed?
4. How would laser transmissions reach Planet X and Earth?

Only when time remains constant regardless of speed or clock drift; spaceships, text message, and laser transmissions would arrive in proper order without conflict. I believe it has to be true for any motion at any speed.

## 7 More about Laser Transmission

As studied earlier in Section 4, the continuous laser transmissions from all three ships at different locations en route will be received by his wife and their friends differently. It is depicted in Figure 11 and summarized in tables below.

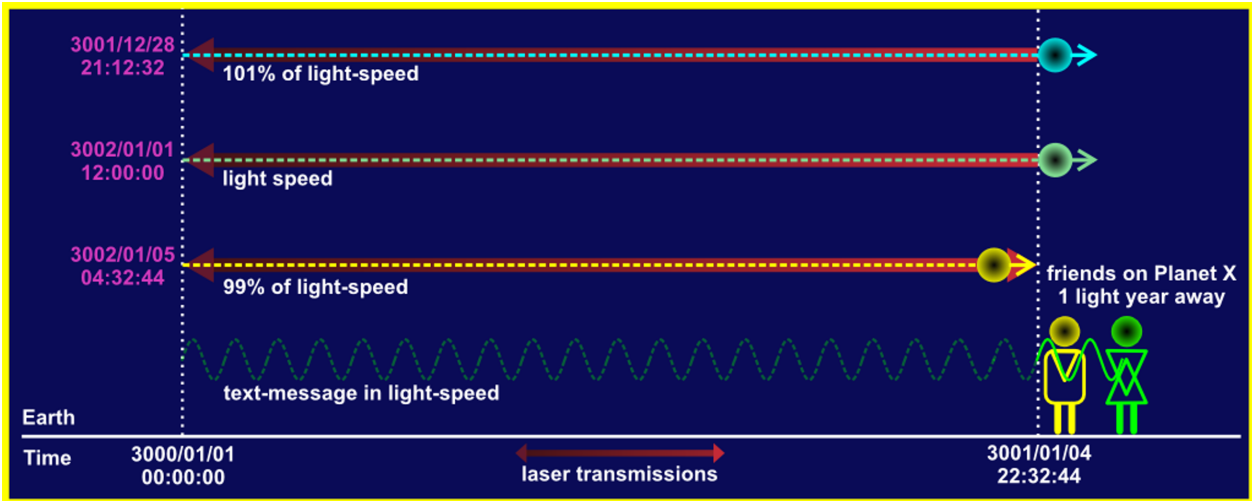


Figure 11: Laser Transmissions and Receptions

Transmission From	First Transmission	Last Transmission	Duration of Transmission
blue ship	3000/01/01 00:00:00	3000/12/28 15:12:32	361.63 days
green ship	3000/01/01 00:00:00	3001/01/01 06:00:00	365.25 days
yellow ship	3000/01/01 00:00:00	3001/01/04 22:32:44	368.94 days

Table 1: Laser Transmissions

Laser Transmission From	First Transmission Received	Last Transmission Received	Total Duration of Receiving
blue ship	3000/01/01 00:00:00	3001/12/28 21:12:32	726.88 days
green ship	3000/01/01 00:00:00	3002/01/01 12:00:00	730.50 days
yellow ship	3000/01/01 00:00:00	3002/01/05 04:32:44	734.19 days

Table 2: Laser Transmission Received By Wife

---

<b>Laser Transmission From</b>	<b>First Transmission Received</b>	<b>Last Transmission Received</b>	<b>Total Duration of Receiving</b>
<b>blue ship</b>	3001/01/01 06:00:00	3000/12/28 15:12:32	-3.62 days
<b>green ship</b>	3001/01/01 06:00:00	3001/01/01 06:00:00	0.00 days
<b>yellow ship</b>	3001/01/01 06:00:00	3001/01/04 22:32:44	3.69 days

Table 3: Laser Transmission Received By Friends

Note that the receiving of laser transmission from blue ship by friends is reversed. The  
 200 last transmission of laser at Planet X arrives earlier than first transmission at departure  
 which will take 365.25 days to arrive. It will be covered by my other study of physical  
 events and information delivery to be released.

Yet, there is no calculation and planing can be done in time-dilated flight. Suppose it is  
 a busy spaceport on Planet X, how to performs traffic control of non-uniformly time-dilated  
 205 flights? It is already big problem when clocks on board the airplanes are out of sync with  
 air traffic controller (as well as all daily operations) on Earth, can you image it is *time* that  
 out of sync?

Certainly, the same clock or different clocks can tick differently. However, in order for all  
 spaceships and the electromagnetic radiations to arrive at Planet X in logical and physical  
 210 order, *time*, has to remain absolutely constant and independent.

Nevertheless, it is not impossible to construct complex mathematical models, or com-  
 puter simulations, to interpret time dilation, however, the logic and truth will be buried.

---

## 8 Conclusion

Time is only the reference of actions measured by other actions, *e.g.* dripping water, burning  
215 candle, sunrise, moonset, etc. So is the reference of size measured by the length of a yard  
stick, or other measurements. They don't exist in natural. They are information, not the  
participants, and can not interact with (or alter) the universe.

Essentially, subparticles are light-speed capable spaceships, and an atomic clock a struc-  
ture of subparticles. Isn't time dilation of subparticles very significant due to their near-  
220 light-speed (or faster?) actions? What happens to an atomic clock, or any structure, when  
it's substructures and elements are operating under their own time dilations? Can logical  
interpretations be derived?

There is only one thing in common among clock and time, current tick can not tick be-  
fore last, and it can not skip a tick. By definition, the chronological ticking order of a clock,  
225 as well as time, can not vary. Other than that, clock is only one of many man-made mea-  
surement tools, *i.e.* yard stick, thermometer, scale, candle burning, etc. All measurement  
tools are subject to the environment, despite their definitions are absolute. Oscillation of  
atomic clocks is motion, it is subject to the environment, and constant environment can  
only be considered impossible in the universe. We can make clock running slower, faster,  
230 or reverse. However, time is not clock, it does not tick with clock, and it can not be reused.  
Nevertheless, can we suppose the expansion or contraction of a yard stick meant the space  
has changed?

Progression of the universe, time, and clock are independent of each other. All clocks  
can drift, still, it is absolutely independent of time. Likewise, we can alter and redefine  
235 time. Nevertheless, altering time does not alter the actions of the universe, as of changing  
the length does not change the size of the universe.

Analogously to playing a play-once-only video, only one frame can be active in refer-  
ence of time. Logically and physically, only current frame of time is active. Actions can  
only take places in current frame. In any single reference frame of time, all objects in the  
240 universe have their absolutely non-negotiable locations, and, all matters and energy have  
their rightful owners of structures. The continuity of the universe is made by actions, as  
well as inactions, of all participants at their locations in current frame of time. Elementary

---

particles, energy, and space will always continue, however, not all participating structures (*collection of particles and energy in certain composition*) can make it to the next.

245 On the other hand, all activities have completed in prior frames of time, and all participants have moved on. Past is only information, or history. Matter and energy can not exist, and no actions can be done in the past frames of time.

A time-dilated object has to disappear from current frame and shift backward to earlier ones. Neither can it perform action, nor can it return, since no other participants (matter and 250 energy) were there to propel it forward. Furthermore, a time-dilated object is no longer the participant of current activities. Then, it can not continue, hence, it's future lost. Therefore, time dilation is a paradox.

In physical point of view, I am the rightful owner of, say, an oxygen atom and it's potential (energy) in my body now. It had it's rightful owner before, and it will be someone 255 or something when I release it. When I liberate it, there is no target owner, just whatever gets it. However, I have to relinquish it back to it's exact prior owner at absolute location in space if I go back to the past. This also apply to all my possessions, atoms, molecules, cells, energy, etc. Logically and physically, it is impossible to return the particles of fries I ate to that potato in the past. I will not exist if I have to return my possessions back to rightful 260 owners in the past. Hence, as much as I wish for, I can not go back to the past.

It is the same logic that any object can not skip forward to future frames. There are no other matters and energy there, and space has not yet been released by the current occupants. It is not the space disallowed the coexist of more than one structures, it is one structure does not allow other structures to occupied the same space without negotiations. 265 Again, any object absent from current frame of time can not continue, then there is no future for it. Therefore, going to future without all other participants is also an impossible fantasy. All forces of actions in the universe can only propel the reality to exactly next absolute reference frame of time.

Since speed is the reference of space and time, it also shows an additional truth; *Space 270 and time are completely independent. Space has existence and absolutely recyclable*[3]. However, time doest not exist, it is massless, actionless, contains no energy, and it can not be recycled. At a single frame of reference, time can be shared by all objects and events, but not space. Universe does not care about time. When matter, energy, and space are in place,

---

it will continue regardless of time.

275      Nevertheless, hasn't our obsession with time and speed clouded our judgment?

---

## 9 Appendix - Paradoxes of Time Dilation

Personally, I can't think or any power can top the capability of manipulating the progression and reversal of the universe. It is very ancient fantasy. Since it has crossed the line from fiction to mainstream science. We are capable of manipulating speed to an extent. With such ultimate power, isn't clear understanding of speed the utmost science of human history? Nevertheless, there are many paradoxes to be resolved. Consider this partial list out of a very long one:

- There are many observations of atomic clock ticking speed and rate of muon decay attributed to time dilation, *e.g.*,
  - On Time Dilation in Quasar Light Curves by Mike Hawkins; Royal Observatory in Edinburgh[2].
  - The Universal Speed Limit and Time Dilation, MIT Department of Physics[5].
  - Epic Space-Time Experiment; NASA[7].
  - Optical Clocks and Relativity; National Institute of Standards and Technology[8].

Many of us have experienced the inconsistency of a wrist watch in weather, shaking, power level of the battery, etc. Since we know there is no absolute time measuring device, isn't clock ticking at a different rate observed in the experiments just, simply, clock drift? The definition of a measurement standard can and ought to be absolute, however, the man-made measuring devices can not. A liter of water can only be one exact liter in exact condition and location, so is a kilogram scale, and all other measuring devices, including atomic clocks. How often one liter of water is one kilogram exact? Time is time and clock drift is clock drift, ticking speed of a clock and time are independent, can we suppose the expansion or contraction of a yard stick meant the space has changed?

- Even the activities of subparticles are beyond direct observation, however, the logic has to be consistent. Essentially, subparticles are super fast spaceships, and an atomic clock a structure of subparticles. Isn't time dilation of subparticles very significant when they travel near (or possibly faster than) light-speed? What happens to the

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atomic clock when it's subparticles are operating under time dilation? Can logical  
305 interpretations be derived?

- Singapore rotates roughly  $1,674 \text{ km/h}$  and Longyearbyen, Norway  $342 \text{ km/h}$ . Since Singapore is rotating faster, and spiraling in larger curve in Space. Even the too-small-to-detect time dilation of Singapore will accumulate over time. Is it possible that Singapore will be in the same time zone of Longyearbyen but day late, and continue to  
310 lag?
- All locations on Equator rotate about  $1,674.36 \text{ km/h}$ , and South Pole Observatory  $0.58 \text{ km/h}$ . Could time-dilated Equator lag behind and disappear from the reference frame of scientists in South Pole Observatory? Where was Equator billions of years ago, and where it will be with it's higher accumulating time dilation?
- Not all points on longitude  $0^\circ\text{E}$  and  $180^\circ\text{E}$  are rotating in same speed, so is the Earth, are longitude lines drifting due to time dilation?
- How much higher the time dilation at the tips of a turbo-propeller comparing to the locations in the middle and it's center? Can the tips of the propeller arrive later than the pilot?
- Consider the Earth's orbital speed is about  $30 \text{ km/s}$  (about Mach 87.6)  $80$ , the Sun's is  $220 \text{ km/s}$  (Mach 640), and the speed of Milky Way unknown. In such hyper-sonic speed, hasn't time continue to dilate on Earth?
- The orbital speed of Hubble Space Telescope is  $28,000 \text{ km/h}$  (Mach 22.9) riding on the hyper-sonic speed of Earth. Would it disappear back to past eventually?
- The interactions of a muon with it's environment is beyond measure. However, we know the reacting nature of subparticles. The rate of decay is also affected by the surroundings. The variations of atomic environment are beyond detection to us, however, not to subparticles themselves. Any variation of the environment has to be apparent to them. Can speed be singled out as the main player? Even the rate of decay is affected  
325 by speed, can we say time is bent? Isn't the rate of decay twisted when time is bent,  
330 since it is based on time?



- The aging of returned astronauts is also interpreted as the evidence of time dilation[9]. Even if astronauts return from missions on the International Space Station (ISS) having aged less than the mission control crew that remained on Earth, is it biology or time dilation?
- Human biology is far too complex for time dilation study, and the mission control group is hardly be the control set of this experiment scientifically. There are billions of living cells in an astronaut, under the lost of body mass, is it possible to measure the aging effect of time dilation?
- Biology tells us that aging has something to do with diet, life style, and environment, etc. However, how much aging has to do with time dilation?
- Since time is the base of speed, if time is bent by speed, then speed has to change due to bent time, then time is bent again by changed speed, then...?

Are scientists looking too hard, and the logic is buried in complex equations[6]?

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