

Comparison of Time in the World and the Afterday in the Quantum Revolution to the Rules of Islamic Science

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Article History:

Received: January 1, 2023

Revised: February 27, 2023

Accepted: February 27, 2023

Published: February 28, 2023

Abstract

Time and space are quantities determined by mass and speed. Atom is the smallest material that can not be divided again. The quantum revolution begins with the existence of a wave that has dualistic properties, then discusses micro-objects and their constituents. This has something to do with the comparison of time and the afterlife which is explained through science and the source of truth, namely the Qur'an. The method used is the library research method which focuses on analysis by connecting with the Al-Qur'an. The results of the analysis found that the comparison of the time of the world and the hereafter is explained in the Al-Qur'an in Al-Hajj verse 47 and Al-Baqarah verse 80, it is explained that the world time is faster than the time of the Hereafter which is associated with quantum physics is the assumption that this world is like an atom and the next world is a large dimension, so the time in the two will be very clearly different. The afterlife will slow down because the calculation of world time will be much faster because the world is small like an atom. Atom itself is explained in the letter Al-Zalzalah verses 7-8, the letter Yunus verse 61, and the letter An-Nisa verse 40.

Keywords: Atom; Islamic Science; Quantum Revolution; Time



INTRODUCTION

The development of Islam in the midst of the rapid pace of development of education and information science has led to a situation where Islam is left far behind, which is realized by the emergence of Muslim belief circles regarding the development of philosophy and the discovery of scientific theories in science by Islamic scholars (Watini & Devana, 2021). Physics is a study within the scope of space and time that studies natural phenomena and matter along with its motion and behavior, concepts related to the universe, objects on the surface and in the earth (Hernawati, 2018). The concepts of physics are based on the experimental results of previous scientists, as technology develops, the proof of the concept of physics must be supported by sophisticated equipment to produce accurate data. Therefore, physics is included in the branches of natural science and science, where scientists will study the properties and behavior of matter from particle size or submicroscopic to the behavior of the universe as a cosmic unit (Feynman et al., 1977; Young et al., 2000).

The history of physics starts from the Greek era where it is divided into three stages based on events that occurred, namely the initial stage in 2400 BC, the second stage in 1600 BC, and the third stage in 1900 BC. In the first period there were scientists such as Ahmose (1650 BCE), Imhotep (2980 BCE), it was he who opened the gates of science which involved physics and mathematics. The development of physics coincided with the science of philosophy where the philosophy of the universe became the first pioneer in the emergence of thoughts about the field of physics. The famous thinker is Empedocles regarding the early version of the *Big Bang theory*. The characteristics of microscopic materials have been proposed by Democritus (420 BCE). In the second period, it is also known as the period of classical physics where the development of physics was carried out by Galileo and Newton (Newton's law I), Force Definition

(Newton's law II), and the law of Action and Reaction (Newton's law III). In the third period the concept of modern and quantum physics developed, starting from Planck's discovery of the quantized concept of light. At this time a lot of studies on electromagnetic waves. Scientists at this time focused on microscopic materials, many classical laws and theories were perfected at this time (Cajori, 1962; Halim & Herliana, 2020; Heilbron, 2018; von Laue, 2023).

Before getting to know the concepts of space and time, we must understand the concept of motion, which can be interpreted as an object whose position changes relative to a reference. Even in physics, time can experience expansion or dilation, what is meant here is stretching, meaning that an observer who sees an object moving at a speed almost the same as the speed of light will experience an expansion in time intervals. An easy analysis to illustrate is relativistic velocity summation. Time expansion can be called the twin paradox, described when there are twins who live on earth and one is an astronaut. When the astronauts return to earth, their ages will be different. Where people on earth experience time expansion and depending on who is moving whether people are on earth or astronauts (Saihu, 2019).

Everything that was created by scientists started from experiments to create concepts and theories where in fact they did not give birth to anything new, they just discovered what Allah SWT, the Creator, had created. The creation of the universe that was formed before the existence of humans, then when Allah created us from the ground it was only a matter of studying and then formulating it in the form of concepts and theories mathematically based on observational experiments. Allah has sent down the source of knowledge of life on earth, namely the Qur'an (Halim & Herliana, 2020; Islamy et al., 2020).

Al-Qu'ran is the life guide for Muslims in studying the universe, which is the main source of learning about physics. Many concepts

and theories of physics are explained in the Qur'an such as explaining the universe, phenomena that occur in nature in human life (Susanti et al., 2019). Al-Qur'an is the argument *naqli* as Muslims we must believe all the contents contained in it without the slightest doubt. Science or physics is the proposition of *aqli* which is based on the thoughts of the human mind or the findings of physical processes that must be tested for truth (Rakhmat & Rasyid, 2021), so that humans can understand physics according to the facts. The relationship between physics and the Qur'an is closely related, basically all knowledge in the world already exists in the Al-Qur'an either explicitly or implicitly (Rohmatulloh & Dwijayanto, 2021). Over time, physics is an interconnected concept in real life. The Qur'an is a reference for mankind to continue studying this universe or God's creation which is very clear according to the explanation of the verses in it (Una, 2022). The content of the Qur'an has a purpose.

Watini & Devana (2021) discusses the relationship of the new quantum theory with the principles of Islamic science and the verses of the Qur'an that it is relevant that the elementary particle of an atom is made of electrical charges. Where religion and science complement each other where human life must have guidelines. The Qur'an is the guide and direction of human life, while without science humans cannot develop to this point. According to research conducted by Ibn Khaldun who divided knowledge based on much human learning. There are four kinds of division, namely the science of religion (*shari'a*), the science of *'aqliyah* (physics and science of divinity), the science of studying Islamic law (knowledge of Arabic, arithmetic which helps with religious studies), and the science which helps study philosophy (logic) (Hernawati, 2018).

The quantum revolution that studies a micro object, where if the object has a structure or composition that is different from the others. The object can be given a potential difference or current that affects its

speed. These micro objects that compose every material that exists on earth. It is like the world hereafter is a material in which there is worldly life, so the world is just a micro object filled with its own structure or constituents, compared to the world hereafter. The time difference in the world and the hereafter must be different because the world is only a small part of the eternal world hereafter as written in the letter of the Qur'an (Parhan et al., 2021). Compared to heavenly religions where the afterlife is the same as in the present world, the difference in time is the same as the current state of the world.

The scholars stated that the importance of awareness in time, where Imam Syafi'i stated that he was once in an environment with Sufi people where he could take two sentences from them namely time is like a sword you can cut it if you don't, then time will cut you and if your lust is not preoccupied with goodness, then disobedience will preoccupy you. Indeed, human life is only a matter of time and opportunity is a choice. Where the end of time is a death emphasized by Imam Ahmad that in fact this life is only a matter of days, if one day has gone it will be close to death (Mujahidin et al., 2022).

METHOD

In this research the method used is qualitative, meaning that this research focuses on library research. Library research is a study focused on the analysis of written materials based on context. Al-Qur'an is known as the holy book for Muslims where many verses contain knowledge that is useful both in this world and the hereafter. Most of the holy verses in the Al-Qur'an are allegorical in nature, therefore one intuitively needs insight to explore the meaning of these verses in the Al-Qur'an in order to be able to identify the meaning of these verses and can be applied in human life for the advancement of human science (Watini & Devana, 2021).

Electrons, protons, and neutrons are believed to refer to atoms. The verse about light is specifically mentioned in the Qur'an because electrons also play an important role in photons (light). In the Qur'an there are three verses which are believed to mention atoms, and are believed to describe certain basic forms in them. These verses can be translated and scientifically identified to extract the information contained in these verses in order to contribute to science for humans in the quantum world. In the letter Saba verse 22, the word "force" is written which can be associated with energy, which is known in energy physics which means energy, where energy is the rate of energy expenditure. Allah is the only God whose power is represented in the form of atoms throughout the universe. The energy and power deep inside the atom is very large, where it is known that with a little manipulation in the atom can produce very large nuclear energy which is known to be able to destroy a country. In the letter An-Nisa verse 40 ([Sasmita & Mariana, 2018](#)), Allah confirms to us about good deeds that will be rewarded twice, double can also be interpreted twice. This can be information about atoms where the word "double" can also be interpreted as "pairs". The important key in interpreting this verse is duality.

Wave duality is a phenomenon studied in physics, the authors believe that the verse mentions a double word to "give" information about where the 2 types of energy are associated with the event. According to the pair concept, the two energies behave as opposite pairs. The two inner energies take the form of subatomic particles intrinsically built into them, the tiny thing that's built up can be the reason for wave-particle duality. Scientists believe that in an electron it induces electric charges as well as a magnetic field caused by the spin of the particle. The next concept of physics is regarding the relativity of time, namely twin time, alluded to in Surah Al-Hajj verse

47 in the Al-Quran explaining the concept of the time of the world and the hereafter.

As for the technical research used in data collection with the documentation method, namely studying all the necessary data with related documents. There are two analytical techniques used, namely inductive thinking techniques and interpretation. The inductive thinking technique is a process of organizing several observed facts that are put together in a series that are interrelated, while the interpretation technique is an analysis by interpreting the verses of the Al-Quran, explaining all forms of aspects related to the Al-Quran and explaining the explicit meaning as well as implied that was initiated by travelers, but this interpretation will create deficiencies because it will initiate subjective interpretations and Islamic thoughts *emerge* (Khoiri, 2018).

RESULTS

Islamic science which is based on the principles of the Qur'an contains various information about the universe and everything in it. In this era, the growth of technology and Islamic knowledge is very rapid for human life, almost every aspect of the stages of human life will be touched by science and technology. Where both are very concerned with the intrinsic drive in man (Ankiewicz et al., 2006; Habibah, 2017; Kaharudin et al., 2022). In fact, the Qur'an explains a lot about events in this universe, the process by which events occur in nature, and explains the creation of living things. Therefore, humans who are given an excess of reason will be driven by curiosity to learn about it. In the Qur'an only mentions the important things of a science in question. This is in contrast to physics where philosophers avoid the existence of God in the process of creating something in this universe, whereas in Islam the Creator is the holder of the key to this universe, in the Al-Qur'an surah Al-A'raf verse 54 which means:

"Surely your Lord is Allah who created the earth in six days, then He resided on the Throne. He closes the night for the day that follows quickly, and (He also created) the sun, moon, and stars (each) obey His command. Remember, creating and ruling is only the right of Allah. Glory be to Allah, Lord of the worlds." In this verse Allah only needed six days of creation which is only Allah's power which does not require time as in the Yasin verse verse 82 which means: *"Indeed His condition when He wants something is only to say to him: 'Be it!' So it happened."* In this verse Allah wants to emphasize that His power is in creating nature without any process of its creation. And the six days the creation of the universe is the time of the hereafter which will be very different from the calculation of world time. When Allah wills something then it will happen (Hadi, 2017).

Time

According to Reichenbach (1948, 1991), space and time have characteristics consisting of one real time and three real spaces (Lirisa, 2021). Time and space are quantities determined by mass and speed (Chen & Chen, 2016; Ramadhani et al., 2016; Slowik, 1997). Within a certain time interval it will produce a change in position taking into account this position, namely speed. The concept of space and time is absolute according to Galileo. Einstein's theory of relativity of time is about speed and time dilation. As a letter in the Qur'an, namely the letter Al-Mu'minin verses 112-114 which means *"(112) Allah asks: 'How many years have you lived on Earth?'. (113) They replied: 'We stay (on earth) a day or half a day, so ask those who count.' (114) Allah said: 'You do not stay (on earth) but for a little while, if you really know.'"*

Based on the verse above, the meaning of time is very relevant to the idea put forward, where the meaning of the time of the world and the hereafter has been explained in the verse in a fragment meaning that a day on earth is only a moment in the hereafter. Because this world is only a temporary place and we will be eternal in the hereafter. This is also one proof that time is absolute and undergoes a process of

dilation. Time in physics is expressed as an absolute quantity, is an interval of time in a coordinate system or a state. Time is explained in the Qur'an in Surah Al-Mu'minun verses 112-114 while in the concept of physics is the special theory of relativity which is explained in experimental facts when two objects move relatively uniformly. God will not be bound by the dimensions of space and time (Khoiri, 2018).

History of the Atom

One of the studies in the theory of quantum revolution is a micro object such as atoms, particles, or molecules. The atom itself was first put forward by Democritus where a material can be broken down into particles, and when a particle cannot be divided again then it is called an atom. The definition of an atom according to language is that it does not cut, meaning it cannot be divided. The universe is made up of a lot of matter, while matter is made up of very small particles. In the Al-Qur'an letter Al-zalzalah verses 7-8 which means " (7) *Whoever does good weighing an dzarrah though, He will surely see (reply) it. (8) And whoever does evil as big as dzarrah, He will surely see (reply) it too.* In that verse there is the word *dzarrah* which is defined as finer than dust or according to physicists that *dzarrah* is an atom. In this verse it is also explained that an atom has a unit of weight or mass which is called "weight". In the Qur'an it is also explained in the letter An-nisa verse 40 which means " *Indeed, Allah does not wrong anyone even as big as an atom, and if there is a virtue as big as an atom, surely Allah will multiply it and give from His side a great reward.*" In this verse, *Dzarrah* is mentioned, which is interpreted as an atom where Allah will reward whatever His servant does, be it evil or good, even if what His servant does is only as big as *dzarrah*, Allah will multiply all the rewards of good done even if it is as big as *dzarrah* (Sabarni, 2019).

The history of the atom from classical to modern physics was promoted by John Dalton who explained the hypothesis about atoms based on Lavoisier's law (conservation of mass) and Proust's law

(constant ratio). Some of the points proposed by Dalton are as follows: 1). The smallest part of a material is an atom that can not be cut or divided again; 2). Atoms are described as solid balls that are very small in size, like a shot put. and has identical or different elements; 3). When atoms combine to produce a compound with simple ratios and integers; and 4). The separation or recombination of an atom is called a chemical reaction, so atoms cannot be destroyed or created.

The drawback of Dalton's atomic model is that it does not describe a solution that can conduct electricity. Where moving electrons are atoms that can conduct electricity. Therefore, there are particles other than electrons that cause electrical conduction ([Green, 2016](#); [Herzberg, 2010](#); [Scerri, 2006](#)). The next drawback is the existence of sub-atomic particles that make up atoms such as protons, neutrons and electrons, and some elements are composed of non-atomic molecules ([Kaal et al., 2022](#); [Whyntie, 2014](#)). Thomson's atomic model designed by JJ Thomson, which perfected John Dalton's hypothesis, was carried out by cathode ray tube experiments. The result of this experiment is to state that there are negatively charged particles called electrons. Known as Thomson's model is the raisin bread modeling, because the surface of the solid ball is sprinkled with electrons and there are other positively charged particles so that the solid ball is neutral. The weakness of this model is that it does not explain the arrangement of positive and negative charges in the solid ball or atom ([Baily, 2013](#); [Hentschel, 2009](#); [Pohl, 2020](#)).

The Rutherford atomic model was carried out by Rutherford, the experiments carried out were shooting thin plates with alpha particles, this was done to perfect the theory carried out by Thomson. The experimental results show that particles can be forwarded, reflected or deflected. Thus, the atom is composed of an arrangement of particles that are positively or negatively charged. Where there is an atomic nucleus surrounded by electrons. The atomic nucleus is

positively charged and the atomic mass is concentrated in the atomic nucleus. The weakness in this model does not explain electrons that do not enter the atomic nucleus, where the movement of electrons around the atomic nucleus, over time the energy of the electrons will run out and will join the atomic nucleus. Rutherford's model is known as the electron trajectory and will be discussed hereinafter referred to as shells (Heilbron, 1981; Villeneuve, 2005; Wereide, 1923; Yock, 2021).

Quantum studies describes the atom, which is a material with a micro level. Atom is a very small solid ball that has identical elements and cannot be divided further. According to Bohr states when the atom emits a quantum of energy and has a certain value. On the basis of the atom has due to a given potential difference in order to vibrate (French & Taylor, 2018; Pratt, 2021). Niels Bohr's atomic model, this modeling was carried out by Niels Hendrik David Bohr who will perfect the previous atomic theory by conducting experiments to analyze the color spectrum of the line-shaped hydrogen atoms. Bohr's hypothesis explained several points including: Atoms in their trajectories consist of positive charges surrounded by negatively charged electrons and electrons can move from one trajectory to another by absorbing the energy emitted so that the energy of the atom will not decrease when moving to the trajectory. If it is high, the electron will absorb energy and vice versa when it moves to a low trajectory, the electron will emit energy. This model discusses that atoms have several paths or shells occupied for the movement of atoms. The drawback of this model is that it does not explain that the color spectrum of an atom has many electrons (Berry, 1989; Heilbron & Kuhn, 1969; Hughes, 1990; Schirmacher, 2009).

In the Qur'an it is also explained about the history of the atom, in the letter Yunus verse 61 which means: "*Your Lord's knowledge does not escape, even if it is as big as an atom in the earth or in the sky. There is nothing smaller than not (also) greater than that, but (everything is recorded)*"

in a real book (Al-Lauh Al-Mahfuzh)." In the expression the meaning of "nothing is smaller" where it is possible that there are particles that make up the atom, as well as the atoms that make up all the matter in the universe are the same. And everything that happened in this universe was recorded before the creation of humans.

In the letter Saba verse 22 which means: "*Say (Muhammad), 'Call those whom you consider (as gods) other than Allah! They do not have (power) even an atom's weight in the heavens and the earth, and they have absolutely no participation in the (creation) of the heavens and the earth and none of them is a helper for Him.'*" In the verse that atoms have energy hidden in it, proven by physics that nuclear energy that can destroy a city in the bombing of the city of Nagasaki in Japan, is created from the atomic nucleus. Energy produced from electrons.

The creation of Allah with the approach of atomic models from scientists who are explained without them knowing it, this universe has many secrets and wonders when humans find out more deeply. And as the source of truth about what is in this universe is the Qur'an. In the letter Al-Mu'min verse 57 which means: "*Verily the creation of the heavens and the earth is greater than the creation of man, but most people do not know.*" The creation of this universe has many miracles from Allah compared to the creation of humans, but Allah still glorifies humans by giving reason so that they continue to study His power so as to grow a sense of faith and piety towards Him.

Quantum Mechanics

The development of quantum physics was a shock to science where the concepts of classical physics slowly began to disappear which were replaced by views of modern physics, starting with Max Planck regarding the existence of quantum in a micro matter, at this time all concepts of physics changed. Einstein's theory of relativity which states that a wave behaves like a particle, and vice versa. One of the discussions that show the quantum is light, a form of matter. In

1919 Louis de Broglie stated that particles have wave properties. Even light can be bent by gravity, and can be interfered with. Just as a photon of light can reflect when it collides with an electron where light behaves as a particle (Sujito et al., 2019).

Light

Light comes from objects that emit light in the air, light sources include the sun, firelight. Light can be divided into two, visible and invisible light. Where visible light can be seen by our two eyes such as sunlight, while invisible light that cannot be seen by our eye senses such as UV rays and X rays. Light has properties including light can propagate straight, light can penetrate yellow objects, light can be reflected, and light can be refracted (Atiyah & Nugroho, 2020).

Moving light does not need space for its propagation because light can penetrate a vacuum. This light is God's power given to humanity so that it can make life easier in this universe, in Surah An-Nur verse 35 which means: " *God gives light (to) the heavens and the earth. The parable of Allah's light, is like a hole that is not penetrated, in which there is a large lamp. The lamp is in the glass (and) the glass is as if stars (shining) are like pearls, which are kindled with oil from a tree of many blessings (namely) an olive tree that grows neither in the east (of something) nor in the west. (its) whose oil (alone) almost illuminates, even though it is not touched. Light upon light (layered), Allah guides to His light whom He wills, and Allah makes parables for mankind, and Allah knows all things.*"

According to Abu Ali Hasan Ibn Al-Haitham in 965 to 1040, he assumed that light is a collection of small particles that move and have a certain speed. Reinforced by physics in particle theory by Newton in 1642 to 1727 who hypothesized that light is composed of small and light particles emitted by sources in all directions that have high speeds, where the speed of light is $3 \times 10^8 m/s$. According to Al-Maragi's interpretation, light is what illuminates this world by sprinkling the Kauniyah verses that were revealed through His

Messenger. Humans are just creatures that must be guided and given instructions for this life with Allah's permission.

Quantum Revolution Theory

Explanation of quantum history in the early 20th century scientists named Albert Einstein and Max Planck put forward the quantum theory that explains the particle properties of waves. Then in 1923 the scientist AH Compton discovered that light has a dual nature, which means that light is both a particle and a wave. After this discovery the scientist De Broglie assumed that light is both wave and particle in nature, while particles can be wave in nature. This hypothesis was proven by scientists Clinton Davisson and Lester Germer, who stated that particles such as electrons, neutrons, and protons have dualistic properties, namely particles and waves (Bhatta, 2021; Menzel et al., 2012; Mittelstaedt et al., 1987). In the concept of a particle is a small material such as electrons or molecules. The nature of particles is dualism where it is found that light and matter exhibit waves as well as particles, this concept explains how quantum objects behave.

In addition, there is discussion about the theory of relativity which is a refinement of the theory of gravity initiated by Albert Einstein, which is divided into general and special relativity. Where special relativity in 1905 discussed the constant speed of light as evidenced by the speed of light not changing when the earth revolves around the sun which depends on the direction of the object being observed by the observer. However, Einstein did not fully understand the relationship between space and time in this special relativity, so Einstein developed complex mathematical equations to answer these problems which took ten years to produce results. Einstein found that space and time will bend in a giant object, the curve is affected by the force of gravity. One of the general relativity equations is the deflection of light on a giant object from the orbit of the planet

Mercury ([Hartini, 2019](#)). In the Qur'an it is explained about the theory of gravity which has to do with this relativity, surah Al-Hajj verse 65 which means: " *Do you not see that Allah has subjected to you what is on the earth and the ships that sail in the sea with His commands and He holds back the (objects) of the heavens from falling to the earth, but with His permission? Truly Allah is Most Gracious, Most Merciful to Humans.*" Allah has made a separate system for this universe to work according to His will.

As explained above, the theory of quantum revolution also in the 20th century stated that a particle has dualistic properties. This went on for decades by carrying out various experiments in order to achieve one goal, namely to observe and study this part of the universe. As discussed by Al-Ghazali who presented criticism of philosophers in the book *Tahaafut al-Falasifah*, there are three views regarding the eternity of nature, ignorance of God, and physical resurrection, where Al-Ghazali wanted to study philosophy together with religious knowledge ([Purwanto, 2020](#)). Not only philosophy, but all existing knowledge must be based on religious knowledge so that God's ignorance does not occur. It is better that the more we study this universe, we must glorify Allah, the Creator. Allah has created the universe that we live in in such a way from small things to big things, Allah has designed us to continue to explore religious knowledge by linking the universe.

As we know, religions in this world teach that there is a second life after death. However, there is an error in perception in this second life, divine religion teaches that when we commit sins in the world for only 40 days, we must atone for these sins for 40 days. They will assume that if they are tortured, then the torture will only last for a few days in accordance with the letter Al-Baqarah verse 80 which means: " *And they say: 'We will never be touched by the fire of hell, except for a few days.'* Say: 'Have you received a promise from Allah so that Allah

will not break His promise or are you only telling Allah what you do not know? They do not know the teachings of the Islamic religion, when the universe is destroyed, not only the spatial dimension will be destroyed, but also the space-time will be destroyed. Comparison of the time of the world and the hereafter taught by heavenly religions is irrelevant to science, where when equating these two times they are the same.

In the letter Thaha verse 103 which means "*They whispered to each other. "You stay (in the world) not more than ten (days)."*" In this verse it is explained that there will come a resurrection day when the disbelievers will ask each other or whisper. In *Tafsir al-Misbah* it is explained that when the disbelievers were afraid and whispered among them then stated that staying in the world was not only ten days which were short days. They spoke in faint voices or in whispers because of the atmosphere in Padang Mahsyar. In the interpretation by Sayyid Qutub, explaining that the infidel will feel that life in the world is only a few days, it feels short and the days feel short.

It is explained in Tuhfatul Ahwadzi that one day in the hereafter is equal to a thousand days of the world, as Allah says in Surah Al-Hajj verse 47 which means "*And they ask you to hasten the doom, even though Allah will never violate His promise. Truly a day by your Lord is like a thousand years according to your reckoning.*" It is stated in the meaning of the letter that in fact a day with your Lord is like a thousand years according to your calculations. Therefore, half a day in the hereafter equals fifty thousand years in this world. Where is the fact that in this world no human has lived for fifty thousand years, which in the afterlife we have only gone through half a day, one can imagine how long the time in the afterlife will be. As for the word of Allah in the letter Al-Ma'arij verse 4 which means "*The powerful angels and Gabriel ascend (facing) to God in a day whose level is fifty thousand years.*" Explained in the meaning of the letter that this shows from the

previous verse that the disbelievers will feel the time in the long afterlife. As we know, religions in this world teach that there is a second life after death. However, there is an error in perception in this second life, divine religion teaches that when we commit sins in the world for only 40 days, we must atone for these sins for 40 days. They will think that if they are tortured, the torture will only last for a few days in accordance with Surah Al-Baqarah verse 80. They do not know the teachings of the Islamic religion, when the universe is destroyed, not only the spatial dimension will be destroyed, but space-time will also be destroyed.

DISCUSSION

Every time will be different depending on the perspective of the recipient because of the relative concept he has because mass and speed determine time (Khoiri, 2018). Newton has a view of nature that has provided a frame of mind which actually basically comes from Galileo saying that "space and time are absolute", namely a universal Cartesian coordinate system in which there are absolute hours (Khoiri, 2018). In line with what was previously mentioned, Tiyas (2017) also mentions the occurrence of the phenomenon of relativity of time between what happens in the world and the hereafter as well as the phenomenon of relativity experienced by angels.

Tiyas (2017) explains several concepts of time in the Qur'an according to Quraish Shihab, he explained the word death which indicates the end of something, the word death is repeated 46 times in the Qur'an which has a tendency to set limits. time, also Dahr which means stretch of time, Waqt means Opportunity and one more, 'ashr which means sunset time. Human time in the world is only short, that is, it is only limited to fulfilling his promise to Allah SWT when he is in the spirit realm. While the afterlife is a place where humans are

accountable for their actions while in the world and also receive a reward of happiness from Allah SWT (Fachreza, 2020).

In the quantum approach of science, religion and philosophy, these three things are also called "brothers and sisters" (*bosom sisters*) (Laracy, 2021; Hidayah et al., 2022). But there are still frequent feuds and debates between the three, so collaboration between scientific fields is needed (Hidayatullah, 2019; Santalia, 2015). Of course, this collaboration does not mean mixing religion, the side of holiness and divinity in the concept of religion must be maintained in collaboration with science and must even strengthen one another (Guessoum, 2012; Arifudin, 2016; Çoruh, 2020).

We must always admire God for all his extraordinary works such as the heavens and the earth and everything in them that we live in today, even Banesh Hoffman also in his work on the quantum revolution, which contains how amazed he is to God because he has created himself to be able to think and examine a creation. God as a beautiful and useful blessing to break through the mysteries of other god's creations (Sujito et al., 2019), it is very inappropriate as human beings we are *kufur* for the blessings that God has given us because the nature of *kufur* is a form of our defiance towards Allah the Almighty (Hafid & Mukhlis, 2020).

CONCLUSION

Based on the explanation that has been explained, it can be concluded that everything in this universe does not have any defects, so that an explanation about the afterlife which is life after the world has been written in the Qur'an. Which assumes that this world is like an atom that has its own time, where the afterlife is a large dimension that contains these atoms. Calculations of the time of the afterlife and the world will definitely be different, where the atomic structure discussed in physics is composed of atomic nuclei and electrons,

having special and identical elements. As human beings who believe in Allah and the last day, we must prepare provisions for the afterlife after knowing that this world is only temporary and will last forever in the afterlife.

REFERENCES

- Ankiewicz, P., De Swardt, E., & De Vries, M. (2006). Some implications of the philosophy of technology for Science, Technology and Society (STS) studies. *International Journal of Technology and Design Education*, 16(2), 117-141. <https://doi.org/10.1007/s10798-005-3595-x>
- Arifudin, I. (2016). Integrasi sains dan agama serta implikasinya terhadap pendidikan Islam [Integration of science and religion and their implications for Islamic education]. *Edukasia Islamika*, 1(1), 161-180. <https://ejournal.uingusdur.ac.id/index.php/edukasiaislamika/article/view/774>
- Atiyah, A., & Nugroho, A. S. (2020). Peningkatan penguasaan konsep sifat-sifat cahaya pada siswa Kelas V SDN 1 Randuagung melalui model pembelajaran inkuiri [Increasing mastery of the concept of the properties of light in Class V students at SDN 1 Randuagung through the inquiry learning model]. *JTIEE (Journal of Teaching in Elementary Education)*, 4(1), 1-11. <https://doi.org/10.30587/jtiee.v4i1.1507>
- Baily, C. (2013). Early atomic models – from mechanical to quantum (1904-1913). *The European Physical Journal H*, 38(1), 1-38. <https://doi.org/10.1140/epjh/e2012-30009-7>
- Berry, R. S. (1989). How good is Niels Bohr's atomic model? *Contemporary Physics*, 30(1), 1-19. <https://doi.org/10.1080/00107518908222587>
- Bhatta, V. S. (2021). Critique of wave-particle duality of single-photons. *Journal for General Philosophy of Science*, 52(4), 501-521. <https://doi.org/10.1007/s10838-021-09564-4>

- Cajori, F. (1962). *History of physics* (Reprint edition). Dover Publications.
- Chen, T., & Chen, Z. (2016). Time, length, and mass are derived quantities. *Journal of Modern Physics*, 7(10), 1192–1199. <https://doi.org/10.4236/jmp.2016.710108>
- Çoruh, H. (2020). Relationship between religion and science in the Muslim modernism. *Theology and Science*, 18(1), 152–161. <https://doi.org/10.1080/14746700.2019.1710355>
- Fachreza, A. I. (2020). *Makna hidup dalam lirik religi (Representasi kehidupan duniawi dalam lirik lagu religi Cari Berkah dan Dunia Sementara Akhirat Selamanya) [The meaning of life in religious lyrics (Representation of worldly life in the lyrics of religious songs Cari Berkah and Dunia Sementara Akhirat Selamanya)]* [Bachelor's thesis, Universitas Islam Indonesia]. <https://dspace.uui.ac.id/handle/123456789/24041>
- Feynman, R. P., Leighton, R. B., & Sands, M. (1977). *The Feynman lectures on physics, Vol. 1: Mainly mechanics, radiation, and heat*. Addison Wesley.
- French, A. P., & Taylor, E. F. (2018). *An introduction to quantum physics*. Routledge.
- Green, D. (2016). *Periodic table in minutes*. Greenfinch.
- Guessoum, N. (2012). Issues and agendas of islam and science. *Zygon*, 47(2), 367–387. <https://doi.org/10.1111/j.1467-9744.2012.01261.x>
- Habibah, S. (2017). Implikasi filsafat ilmu terhadap perkembangan ilmu pengetahuan dan teknologi [Implications of the philosophy of science on the development of science and technology]. *Dar El-Ilmi : Jurnal Studi Keagamaan, Pendidikan Dan Humaniora*, 4(1), 166–180. <https://doi.org/10.52166/dar%20el-ilmi.v4i1.693>
- Hadi, T. K. (2017). *Masa penciptaan alam semesta dalam Al-Quran (Kajian Surat Al-A`raf ayat 54 dan Surat Yasin ayat 82) [The period of the creation of the universe in the Koran (Study of Surah Al-A`raf verse 54*

and Surah Yasin verse 82] [Bachelor's thesis, UIN Ar- Raniry Banda Aceh]. <http://library.ar-raniry.ac.id>

- Hafid, H. & Mukhlis. (2020). Manajemen tafakkur, syukur dan kufur: Refleksi dalam kehidupan [Management of contemplation, gratitude and disbelief: Reflections on life]. *Jurnal Kariman*, 8(2), 295–302. <https://doi.org/10.52185/kariman.v8i02.151>
- Halim, A., & Herliana, F. (2020). *Pengantar fisika kuantum [Introduction to quantum physics]*. Syiah Kuala University Press.
- Hartini, S. (2019). Revolusi ilmiah: Global Positioning System (GPS) sebagai bukti empiris teori relativitas [The scientific revolution: The Global Positioning System (GPS) as empirical evidence for the theory of relativity]. *Jurnal Filsafat Indonesia*, 2(1), 27–32. <https://doi.org/10.23887/jfi.v2i1.17548>
- Heilbron, J. L. (1981). Rutherford–Bohr atom. *American Journal of Physics*, 49(3), 223–231. <https://doi.org/10.1119/1.12521>
- Heilbron, J. L. (2018). *The history of physics: A very short introduction* (Illustrated edition). Oxford University Press.
- Heilbron, J. L., & Kuhn, T. S. (1969). The genesis of the Bohr atom. *Historical Studies in the Physical Sciences*, 1, 2011–2290. <https://doi.org/10.2307/27757291>
- Hentschel, K. (2009). Atomic models, J.J. Thomson's "Plum Pudding" model. In D. Greenberger, K. Hentschel, & F. Weinert (Eds.), *Compendium of quantum physics* (pp. 18–21). Springer. https://doi.org/10.1007/978-3-540-70626-7_9
- Hernawati, E. (2018). Meningkatkan hasil belajar fisika melalui penggunaan metode demonstrasi dan media audiovisual pada siswa Kelas X MAN 4 Jakarta [Improving physics learning outcomes through the use of demonstration methods and audiovisual media in Class X MAN 4 Jakarta]. *Andragogi: Jurnal Diklat Teknis Pendidikan Dan Keagamaan*, 6(2), 118–131. <https://doi.org/10.36052/andragogi.v6i2.60>

- Herzberg, G. (2010). *Atomic spectra and atomic structure* (2nd edition). Dover Publications.
- Hidayah, H., Iriyadi, D., & Gufron, I. A. (2022). Relasi sains dan agama dalam perspektif Ian Graeme Barbour [The relationship between science and religion in the perspective of Ian Graeme Barbour]. *Aqlania*, 13(1), 17-36. <https://doi.org/10.32678/aqlania.v13i1.5967>
- Hidayatullah, S. (2019). Agama dan sains: Sebuah kajian tentang relasi dan metodologi [Religion and science: A study of relations and methodology]. *Jurnal Filsafat*, 29(1), 102-133. <https://doi.org/10.22146/jf.30246>
- Hughes, R. I. G. (1990). The Bohr atom, models, and realism. *Philosophical Topics*, 18(2), 71-84. <https://doi.org/10.5840/philtopics19901824>
- Islamy, M. R. F., Supriadi, U., Rojak, R. W. A., Romli, U., Anwar, S., & Parhan, M. (2020). Tanfidz ta'lim as-syahsiyyah dirasah tahliliyyah fi Ma'had al-Inayah Bandung [Implementation of personality education, an analytical study at the Ma'had al-Inayah Bandung]. *Lentera Pendidikan : Jurnal Ilmu Tarbiyah Dan Keguruan*, 23(2), 343-356. <https://doi.org/10.24252/lp.2020v23n2i613>
- Kaal, J. E., Sorensen, J. A., & Otte, A. (2022). *The nature of the atom: An introduction to the structured atom model*. Curtis Press.
- Kaharudin, R. G., Rodiah, I., Razimi, M. S. B. A., & Mukri, M. (2022). Overview of the philosophy of science on the nature of interdisciplinary Islamic studies. *Analisis: Jurnal Studi Keislaman*, 22(1), 27-52. <https://doi.org/10.24042/ajsk.v22i1.10290>
- Khoiri, A. (2018). Al-qur'an dan fisika (Telaah konsep fundamental: Waktu, cahaya, atom dan gravitasi) [Al-qur'an and physics (Examine fundamental concepts: Time, light, atoms and gravity)]. *Prosiding Seminar Pendidikan Fisika FITK UNSIQ*, 92-102. <https://ojs.unsiq.ac.id/index.php/semnaspf/article/view/129>

- Laracy, J. (2021). *Theology and science in the thought of Ian Barbour: A thomistic evaluation for the Catholic doctrine of creation*. Peter Lang Inc., International Academic Publishers.
- Lirisa, D. (2021). *Aspek metafisika dalam teori fisika ruang dan waktu Hans Reichenbach [Aspects of metaphysics in Hans Reichenbach's theory of space and time physics]* [Bachelor's thesis, Universitas Gadjah Mada].
<http://etd.repository.ugm.ac.id/penelitian/detail/196328>
- Menzel, R., Puhlmann, D., Heuer, A., & Schleich, W. P. (2012). Wave-particle dualism and complementarity unraveled by a different mode. *Proceedings of the National Academy of Sciences*, 109(24), 9314–9319. <https://doi.org/10.1073/pnas.1201271109>
- Mittelstaedt, P., Prieur, A., & Schieder, R. (1987). Unsharp particle-wave duality in a photon split-beam experiment. *Foundations of Physics*, 17(9), 891–903. <https://doi.org/10.1007/BF00734319>
- Mujahidin, E., Rachmat, R., Tamam, A. M., & Alim, A. (2022). Konsep manajemen waktu dalam perspektif pendidikan Islam [The concept of time management in the perspective of Islamic education]. *Edukasi Islami: Jurnal Pendidikan Islam*, 11(1), 129–146. <https://doi.org/10.30868/ei.v11i01.2203>
- Parhan, M., Budiyanti, N., & Fitria, A. (2021). Hakikah manusia sebagai makhluk pedagogik dalam perspektif Alquran [Human nature as a pedagogic creature in the perspective of the Koran]. *Tasamuh: Jurnal Studi Islam*, 13(2), 359–372. <https://doi.org/10.47945/tasamuh.v13i2.421>
- Pohl, M. (2020). *Particles, fields, space-time: From Thomson's electron to Higgs' boson*. CRC Press.
- Pratt, C. J. (2021). *Quantum physics for beginners: From wave theory to quantum computing. Understanding how everything works by a simplified explanation of quantum physics and mechanics principles*. Independently published.
- Purwanto, A. (2020, November 25). *Teori kuantum dari Al-Ghazali hingga Einstein, dari kehendak bebas Tuhan hingga teleportasi multi-*

- qubit [Quantum theory from Al-Ghazali to Einstein, from God's free will to multi-qubit teleportation]*. Orasi Ilmiah Pengukuhan Guru Besar Institut Sebelas November Surabaya, Surabaya, Indonesia. <https://www.youtube.com/watch?v=e9mTpzdoS8U>
- Rakhmat, A. T., & Rasyid, A. F. (2021). Word exploration and the meaning of evaluation in the Holy Quran (Thematic interpretation of education evaluation). *Religio Education*, 1(1), 43–55. <https://doi.org/10.17509/re.v1i1.41435>
- Ramadhani, N., Wahyuni, S., & Handayani, R. D. (2016). Pengembangan media educational game “Monopoli Fisika Asik (Mosik)” pada mata pelajaran IPA di SMP [Development of educational game media “Monopoli Fisika Asik (Mosik)” for science subjects in junior high schools]. *Jurnal Pembelajaran Fisika*, 5(3), 235–245. <https://jurnal.unej.ac.id/index.php/JPF/article/view/4065>
- Reichenbach, H. (1948). The principle of anomaly in quantum mechanics. *Dialectica*, 2(3/4), 337–350. <https://www.jstor.org/stable/42963893>
- Reichenbach, H. (1991). The space problem in the new quantum mechanics. *Erkenntnis* (1975-), 35(1/3), 29–47. <https://www.jstor.org/stable/20012360>
- Rohmatulloh, D. M., & Dwijayanto, A. (2021). Physics of Qur'an: Islamizing the science and its contribution towards humanity. *Religio Education*, 1(2), 75–85. <https://doi.org/10.17509/re.v1i2.41343>
- Sabarni. (2019). Struktur atom berdasarkan ilmu kimia dan perspektif Al-Quran [Atomic structure based on chemistry and the perspective of the Koran]. *Lantanida Journal*, 7(1), 87–100. <https://doi.org/10.22373/lj.v7i1.4647>
- Saihu. (2019). Rintisan peradaban profetik umat manusia melalui peristiwa turunnya Adam as ke-dunia [The pioneering prophetic civilization of mankind through the events of the descent of Adam as into the world]. *Mumtaz: Jurnal Studi Al-Qur'an Dan*

Keislaman, 3(2), 268–279.
<https://doi.org/10.36671/mumtaz.v3i2.44>

- Santalia, I. (2015). The relationship between religion and science: Critical studies on Ian G. Barbour's theory. *JICSA (Journal of Islamic Civilization in Southeast Asia)*, 4(2), 76–93.
<https://doi.org/10.24252/jicsa.v4i2a5>
- Sasmita, E. F., & Mariana, N. (2018). Eksplorasi Alquran Surah an-Nisaa dalam mentransformasi matematika SD yang penuh nilai [Exploration of the Qur'an Surah an-Nisaa in transforming value-filled elementary mathematics]. *Jurnal Penelitian Pendidikan Guru Sekolah Dasar*, 6(4), 526–535.
<https://ejournal.unesa.ac.id/index.php/jurnal-penelitian-pgsd/article/view/23617>
- Scerri, E. R. (2006). *The periodic table: Its story and its significance*. Oxford University Press.
- Schirmacher, A. (2009). Bohr's atomic model. In D. Greenberger, K. Hentschel, & F. Weinert (Eds.), *Compendium of quantum physics* (pp. 58–61). Springer. https://doi.org/10.1007/978-3-540-70626-7_18
- Slowik, E. (1997). Huygens' center-of-mass space-time reference frame: Constructing a Cartesian dynamics in the wake of Newton's "De Gravitatione" argument. *Synthese*, 112(2), 247–269.
<https://www.jstor.org/stable/20117659>
- Sujito, S., Sunardi, S., Ma'ruf, M., & Hartini, S. (2019). Paradigma teori atom lintas waktu [Paradigm of atomic theory across time]. *Jurnal Filsafat Indonesia*, 2(1), 42–51.
<https://doi.org/10.23887/jfi.v2i1.17551>
- Susanti, E. D., Astuti, B., Syarifah, B. A., Popilaya, P., & Azizah, N. (2019). Analisis motivasi belajar siswa terhadap penggunaan bahan ajar fisika terkomplementasi ayat Al-Quran [Analysis of students' learning motivation towards the use of physics teaching materials complemented by Al-Quran verses]. *JPF*

- (Jurnal Pendidikan Fisika) Universitas Islam Negeri Alauddin Makassar, 7(2), 169–174. <https://doi.org/10.24252/jpf.v7i2.9240>
- Tiyas, W. W. (2017). *Relativitas waktu dalam kisah tidurnya Ashab al Kahfi: Tafsir saintifik Surat al Kahfi ayat 9-26* [The relativity of time in the story of Ashabul Kahf's sleep: Scientific interpretation of Surah al Kahf verses 9-26] [Bachelor's thesis, UIN Sunan Ampel Surabaya]. <http://digilib.uinsa.ac.id/19165/>
- Una, F. (2022). *Pendidikan fisika dalam al-qur'an* [Physics education in the Koran]. OSF Preprints. <https://doi.org/10.31219/osf.io/4ayfg>
- Villeneuve, D. M. (2005). Toward creating a Rutherford atom. *Science*, 307(5716), 1730–1731. <https://doi.org/10.1126/science.1110367>
- von Laue, M. (2023). *History of physics* (V. Petkov, Ed.; R. Oesper, Trans.). Minkowski Institute Press.
- Watini, S., & Devana, V. T. (2021). Teori kuantum baru yang sesuai sains dan teknologi dengan kaidah ilmu Islam [A new quantum theory that is in accordance with science and technology with the principles of Islamic science]. *ADI Bisnis Digital Interdisiplin Jurnal*, 2(1), 89–93. <https://doi.org/10.34306/abdi.v2i1.450>
- Wereide, Th. (1923). The general principle of relativity applied to the Rutherford-Bohr atom-model. *Physical Review*, 21(4), 391–396. <https://doi.org/10.1103/PhysRev.21.391>
- Whyntie, T. (2014). *Introducing particle physics: A graphic guide*. Icon Books.
- Yock, P. (2021). Comparison of Rutherford's atomic model with the Standard Model of particle physics and other models. *Journal of the Royal Society of New Zealand*, 51(3–4), 538–556. <https://doi.org/10.1080/03036758.2020.1848888>
- Young, H. D., Freedman, R. A., Sandin, T. R., & Ford, A. L. (2000). *Sears and Zemansky's University physics, Volume 3: Modern physics* (10th edition). Pearson.