

# Life On Planets Other Than Earth From The Perspective Of The Qur'an Surat An-Nahl Verse 49

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**Abstract:** The background of this research is that life is not an absolute thing that only planet Earth has. In the mid-20th century, the search for life on planets other than Earth began to be encouraged. There are a number of Muslims who quickly legitimize the verses of the Qur'an against the existence of life on planets other than earth. The formulation of the problem from this research is how life is on planets other than Earth from the perspective of science and Qs. Al-Nahl verse 49? And what is the relevance between science and the Koran regarding life on planets other than Earth? This study aims to determine the perspective of science and Al-Qur'an Surah Al-Nahl verse 49 about life on planets other than Earth. The type of research that the writer uses is library research which is descriptive and analytical. Content analysis and interpretation are used to analyze the data in this study. Life on the planets of the solar system that are currently found are still in the form of microorganisms, such as the ALH84001 fragment on the meteor planet Mars, and it is suspected that there is life in the solar system on the planet Venus, the satellite Io and also Europa. Because these planets and satellites found water in liquid form. The Qur'an gives a hint to the letter Al-Nahl verse 49 with the word dabbah which means reptiles that exist on earth and in samawat (sky). Based on the results of the research and analysis, it can be concluded that there is relevance between science and the Koran regarding life on planets other than Earth. This is demonstrated by the discovery of microorganisms on Mars and water. Surah Al-Anbiya verse 30 also states that water is the main source for forming life, so the discovery of water on the ancient planets Venus, and Mars, the satellite Io, and Europa, and the word dabbah in Surah Al-Nahl verse 49 is proof that there is no dichotomy between science and al- -Quran.

**Keywords:** Life, Planet, Earth, Al-Qur'an, An-Nahl.

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## Introduction

The universe exists because of the result of the manifestation of the existence of Allah SWT as His creator (Rasyid, 2020). The four-dimensional shape of the universe stems from the relationship between the amount of matter and energy present in the universe and the rate of its expansion. Al-Qur'an is the holy book that Allah SWT sent down 14 centuries ago to the prophet Muhammad SAW. as a way of life, setting the rules of life in order to achieve happiness in the world and the hereafter (Ibrahim, 2019). Contains various scientific facts, including science. astronomy which is one of the pillars of progress in today's modern era (Saleh, 2022). With the existence of the Qur'an, all creatures can know God and His majesty. Hasbi

Ash-Shidiqy stated that the Qur'an is a collection of all meanings and facts, a collection of the wisdom and laws of Allah SWT, so the Qur'an is said to be the Word of Allah that gathers all knowledge. (Mubin, 2020).

Allah SWT said QS An-Nahl (16): 89. It means "And We sent down to you Al Kitab (Al Quran) to explain everything and guide the good news for those who surrender. (Qs. An-Nahl: 89)" (Ahsan, 2012). In Surat An-Nahl verse 89 above the Al-Qur'an is present as tibyānan likulli shayin, not to assert that the Al-Qur'an contains everything, but to state that in the Al-Qur'an there are instructions concerning worldly life and ukhrawi (Widodo, 2003). Broadly speaking, the epistemological principles of the Al-Qur'an paradigm are divided

into three types, the first is kauniyah (natural sciences, nomothetic), the second is qouliyah (theological Qur'an sciences), and the third is nafsiyah science. Kauniyah science deals with natural law, Qouliyah science deals with God's law, and Nafsiyah science deals with meaning, value, and awareness (Rafi et al., 2021).

This Kauniyah science is called nomothetic (sciences relating to natural laws), which will describe various problems of life and death, including those concerning the universe and its phenomena. Meanwhile, science is the result of human thought so it can help uncover events or reality (Lailiyah, 2020). In this modern era, the progress of technology and science is the benchmark for the progress of the Nation and now day by day the progress of future technology will become more sophisticated (Imron et al., 2019). Technology and science have helped scientists carry out research processes on earth and in outer space.

There are verses in the Qur'an that instruct humans to be able to use reason, reasoning, and so on to understand something. The mind is a gift given by Allah SWT to humans to always be grateful for all His power. Things like this create a climate in science that gives birth to various scientific disciplines. In this context, Quraish Shihab divides the correlation between the Qur'an and science into two, namely: First, the Qur'an instructs humans to use their minds to gain the widest possible knowledge. Second, there are many verses in the Qur'an that discuss the universe and the phenomena that occur in it (Nurcresia et al., 2019).

The debate on the relationship between science and religion has been pointed to Christianity, Catholicism, and Protestantism, which is based on the existence of Christian literature that alludes to the relationship between faith (religion) and the theory of evolution (Haddade, 2016). Many Catholic circles were introduced to Teilhard de Chardin's thoughts. De Chardin attempted to achieve a synthesis between the Catholic tradition and the theory of evolution (Rahma et al., 2022). Meanwhile, in Protestant circles, books appeared that were quite balanced in explaining the relationship between faith, science, and the Holy

Scriptures, such as the essays by Petrie and Mulder. (Ananda et al., 2015).

Islam greatly glorifies reason so that it becomes a more useful human being in this world (Niqie, 2014). Therefore, Islamic science requires thinkers who can associate science with the verses of the Qur'an. However, it is not permissible to link the Qur'an and the science being studied at will.

There is something even more important that needs to be done, namely associating science, the Qur'an, and education, because it is important to explain how the concept of Al-Qur'an-based science education is to understand science based on the Qur'an. Education itself cannot be separated from political and cultural power. Education in Indonesia is also inseparable from the politics of colonialism for hundreds of years. Therefore, there is a need for continuous reformulation so that it is more in line with the national interests of the 21st century (Nurcahyo, 2018).

The emergence of arguments about scientific knowledge began to open the horizon of scientists to science and make them aware of the importance of science until finally leading researchers to research that leads to science in the field of science based on the Qur'an, Allah Swt. said in Surat Al-Alaq verses 1 to 5 Meaning: "1) Recite by (mentioning) the name of your Lord Who created, 2) He has created man from a clot of blood, 3) Recite, and your Lord is the Most Merciful, 4) The One who teaches (man) with the medium of the pen, 5) He teaches man what he does not know"

The first verse revealed to the Prophet contained instructions about reading. The importance of reading was shown by the angel Gabriel by repeating Allah's command so that the Prophet could do iqra' (reading) three times, even though at that time the Prophet said that he could not read. Surat al-Alaq explains that Allah teaches humans through the intermediary of the word to know everything. Kalam was used to write a book that is the word of Allah SWT. it is the Qur'an (Mohammed et al., 2021).

The new paradigm between science and the Qur'an is now better known as Islamic science. There is an interesting quote from Glyn Ford: "If science were not a unique intellectual building, as it is played out today, suppose the history of

science was not the history of repeated movements towards the truth about the universe, but rather the history of the construction of various social realities." conveyed through science, scientists, and society, then the possibility arises of Islamic science consisting of one, or perhaps more, series of multidimensional aspects of the universe, all of which are inspired by the essence of Islamic society (Ros & Deeg, 2022).

The quote above states that there is no dichotomy between science and Islam, meaning that this explains that al-Qur'an-based science in the world of education is interrelated. Al-Quran has a high value, is in the highest position, and will continue to climb to a higher place. far beyond the limits of human ability. No one will be able to surpass it; not even a single creature will be able to make a verse similar to his. The Qur'an is not a scientific book as people think of it today. Al-Qur'an is the holy book that Allah sent down in order to be able to provide guidance to humans and set the rules of life in order to achieve happiness in this world and the hereafter.

After the death of the Prophet Muhammad SAW, especially since the Islamic army defeated the Persian empire and the Byzantine (East Roman) empire under the command of Caliph Umar ibn al-Khattab, the Islamic government seized a large area. In 637, Syria, Iraq, and Jerusalem were occupied, followed by Egypt in 642, and Central Asia and North Africa in 670. Soon Islamic forces captured Spain and India (Ozdemir, 2021). Several cities in the region, especially Alexandria (Egypt), are centers of Hellenic civilization (Rasyid, 2020), and it is at the center of this civilization that Muslims are introduced to new sciences. In Babylonia, the Muslims met the science of astronomy. In Alexandria, for the first time, Muslims became acquainted with various Greek thoughts, from Plato and Euclid, who were rationalists, to Aristotle and Ptolemy, who were empiricists and put forward observation. In dealing with this new knowledge, the attitude of Muslim scientists is to borrow, acknowledge and innovate (Ibrahim, 2019).

As a scientist who knows the truth, one cannot hide the truth. because humans are educated to show the way of truth. Man himself is a unity of

spirit, mind, heart, body, and so on. Under the auspices of Islamic law, the needs of these potentials must be fulfilled and balanced, and each must be given the ability and opportunity to express his energy (Saleh, 2022).

For countless ages, humans have started to think about basic things, like where we come from. Where does the earth come from? After learning that the earth revolves around the sun, they ask, "Where did the solar system come from?" Knowing that the solar system is part of a galaxy, they ask, "Where did the universe come from?" What are the contents of this universe? To be precise, it was in the mid-20th century that the various questions above began to be answered little by little because, at that time, scientific competence began to occur in various countries to fulfill curiosity by uncovering and studying the secrets of outer space, astronomy, and the galaxy (Mubin, 2020).

Space is a new place for humans; previously, space was an alien area untouched by human civilization. Since America and the Soviet Union competed to explore and exploit space, the potential of outer space for human life has been developed and utilized on a large scale. From then on, space exploration was taken seriously, and Neil Armstrong became the first human to set foot on the moon. This event was the first step for humans to explore the vastness of outer space (Ahsan, 2012). Everything that exists in this universe is the creation of the Almighty God, which includes planets, the sun, stars, extraterrestrial objects, and so on (Widodo, 2003).

God created the heavens, the earth, and everything in them. In this case, we must be very aware that the universe is so vast. We may have wondered if we are the only ones who enjoy this vast universe. What if humans become extinct in this universe one day? What will happen? Questions like this often bother some people. Isn't it true that when you, the prophet Adam A.S. were created to inhabit Heaven, yes, felt lonely? Then he asked Allah SWT to give him a friend, and Allah SWT created Eve to alleviate the prophet Adam AS's loneliness.

It is natural for humans to seek friends both in heaven and in this world. Is there life outside of Earth? Or is life only owned by a planet called

Earth? Meanwhile, other planets have no right to exist.

Today, from the many discussions of the Koran, researchers will raise one interesting discussion, namely, how the interpretation of the Koran answers scientific findings in the fields of astronomy, biology, archeology, and history that result in the hypothesis that there is a high probability of life outside the earth.

This discussion is considered interesting because several Muslim groups legitimize the verses of the Koran for this phenomenon (the existence of extraterrestrials). As it is known, the verses in the Koran do not discuss in detail scientific theories; the Koran only explains them philosophically, that is, sometimes it provides general principles for scientific studies or provides a strong motivation for the development of science (Rafi et al., 2021). As a result, using Al-Quran verses as scientific reinforcement without conducting extensive research on these verses can be disastrous.

Research proves that there is life other than on Earth. Life is not an absolute thing that only belongs to Earth (Lailiyah, 2020). Life is not only about living things but inanimate things can also be said to be a matter of the existence of life, such as conditions on a planet, both in the form of soil and rocks (Imron et al., 2019).

The tool used to determine the presence of living things on other planets is spectroscopy. With this tool, cosmochemists can conclude that there is life on an exoplanet, regardless of whether extraterrestrial life has consciousness, intelligence, or technology (Nurcresia et al., 2019).

Allah SWT. said: Meaning: "And to Allah alone bow down all that is in the heavens and all the creatures that move on the earth, and (also) the angels, while they (angels) are not proud of themselves" (An-Nahl: 49).

From the verse above, we cannot assume that angels are also included as reptiles, which in the Qur'an are described as *dabbah* (living creatures). Because angels do not walk on earth, do not walk on feet, and angels are created from light. So, the word "*dabbah*" in the verse above is none other than a living creature whose limbs are composed of water as its main constituent, wherever that

creature is. Theory M states that our universe is not the only universe. M-Theory predicts that many universes have arisen from nothing. Stephen Hawking said that the beginning of the universe was a quantum event. In quantum theory, the universe does not have a single history, but there are many universes and each has a different set of physical laws and has its history, and all of these universes exist spontaneously, started in every way possible (Haddade, 2016).

Another life outside this planet earth is possible (Rahma et al., 2022). For this reason, it becomes an interesting study for researchers to see how science explains natural phenomena that occur in relation to the existence of life on other planets. Because the Qur'an has given instructions regarding the condition and regularity of this nature, With the existence of science, it can be explained scientifically and theoretically. Therefore researchers are interested in conducting research on "The Perspective of Al-Qur'an Surah Al-Nahl Verse 49 About Life on Planets Other than Earth."

## Materials and Methods

The type of research used in this research is library research. Library research (library research) is a series of activities related to the method of collecting library data through reading, recording, and processing research data (Ananda et al., 2015).

Kartini Kartono revealed that library research aims to collect information and data obtained from the library space (Niqie, 2014). The research category that the author refers to is included in library research because this research does not need to go directly to the field, only by conducting surveys and observations to be able to get the data that is being sought.

The data obtained from this study were then gathered from the reading process, which was completed from several books, scientific works, and Tafsir books and their translations that are related to the material and themes studied.

This research is part of the analytical descriptive research, which aims to provide as accurate a picture of individuals as possible in terms of conditions, symptoms, or specific groups

(Nurchahyo, 2018). According to Sumardi Suryabrata, descriptive analysis is the collection of basic data in a descriptive manner that does not require the search for or discovery of relationships in order to test hypotheses, make predictions, or derive meaning and implication (Mohammed et al., 2021). While descriptive research according to Whitney is a process of finding facts with precise and systematic interpretations (Ros & Deeg, 2022).

The approach chosen in studying the problems of life on other planets is scientific. This scientific approach is a scientific approach that uses scientific and rational steps to reveal a problem that arises in our minds. Where does this approach compromise science with the verses of the Koran in question, which are used as the object of this interpretation (Ozdemir, 2021)? by still focusing on thematic interpretation studies.

The maudh' approach is used in this study. This Maudhu'i method (content analysis) plays a significant role in resolving the theme by analyzing the verses of the Qur'an and is very simple because, whenever possible, they are sorted according to the order in which they were descended, and then the overall meaning of these verses are explained. It is practically correct for this research to be able to describe the object of research systematically and comprehensively.

The next stage, after collecting all the data, is to analyze or simplify the information that has been obtained into a form that is easier to understand. Patton stated that data analysis is a way to be able to arrange data sequences, and organize them into a pattern of categories and basic descriptive units. The data must then be understood, interpreted, and interpreted.

In analyzing this research, the writer uses the method of interpretation. The interpretation method is a method of interpreting verses relating to "Life on an Extraterrestrial Planet" to achieve authentic truth (Rasyid, 2020). The researcher interprets based on the data that has been understood, so that in this way the researcher gets research results with an objective understanding of the material that the researcher is studying.

## Results and Discussion

### A. Life on Planets Other Than Earth in a Scientific Perspective

Science is the knowledge that studies natural phenomena through observation, experimentation, and analysis. Physics, which is a branch of science, is a science that studies matter and energy and the interactions between the two. The nature of physics itself is physics as a product (a body of knowledge), attitude (a way of thinking), and process (a way of investigating). The study of physics encompasses everything that exists in nature, from elementary particles (photons, fermions, and bosons) and electromagnetic fields (electric-magnet) to the entire cosmos. Including learning about the planets in the universe in general, and the planets in the solar system in particular (Ibrahim, 2019).

The planet is a collection of celestial matter that is not burned and exists in the form of large balls made of rocks and minerals. Most of the planets have an air layer and can reflect sunlight to varying degrees. The differences occur due to the nature of the planet's surface and the air layers of each planet (Saleh, 2022). According to scientists, there are nine planets in the solar system: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, and Pluto. However, Pluto, which was included as a member of the planet family in the solar system, is no longer considered a planet because its orbit is not free of other celestial bodies. Where this is contrary to the definition of a planet conveyed by the IUA, So it was agreed that Pluto is not a planet anymore.

Earth is the third planet in the solar system, and many of us assume that only life exists on this planet, from microorganisms to complex life. However, it turns out that as Rohmat Haryadi said that on the planets Venus, and Mars, several satellites of Saturn and Jupiter such as Io, Ganymede, Calisto, and Titan as habitable zones that have life. Extraterrestrial life is defined as life that does not originate from planet Earth (Mubin, 2020). The following is an explanation of the planets:

#### 1. Venus

The planet Venus is similar to Earth, both in terms of size and mass, and the rocks that make up its surface are of the same type. Geological activists,

especially volcanoes (volcanic), are also the same as the earth. Likewise, gravity is almost the same. Venus may have had life; Venus has oceans that lasted for a long time, approximately 2 billion years ago. So if there is enough time, even more, complex forms of existing life might even appear. This long period is sufficient not only for the origin of life but also for evolutionary development.

Referring to this time, the situation on Venus is very different from before. Currently, most of Venus contains CO<sub>2</sub> in its atmosphere; even the hot surface temperature reaches 477 °C. This can slow down and even stop geological activity and biological evolution.

According to Grispoon, Venus almost certainly had liquid water when it was young. a condition that supports life. Another interesting thing is that it is possible for Venus to have an atmosphere rich in oxygen. The generation of oxygen was very important in building complex life on Earth. "Maybe Venus was a warm, wet planet with an oxygen-containing atmosphere much earlier than Earth," he said.

There is life on other planets, as said by Nadiah Thayyarah when the American Space Agency, NASA, announced that the meteoroid that fell in Australia some time ago contained amino acids (Ahsan, 2012). This substance is the main mineral that forms life. As a result, life beyond Earth is conceivable.

As in Surat Ash-Shura verse 29, which means: "Among (the verses) His signs: the creation of the heavens and the earth, and the cascading creatures that He spreads over both." and he is all-powerful to gather them all when he wills." (Ash-Shura: 29)

In the letter above, we cannot assume that angels are creeping creatures (dabbah). Because, angels do not walk on feet, and they were created from light (Widodo, 2003). This can be seen in the interpretation of Zubdatut Tafsir Min Fathil Qadir/Shaikh Dr. Muhammad Sulaiman Al Asyqar, mudarris tafsir of the Islamic University of Madinah, who stated that Surat Ash-Shura yat 29: "Among the proofs of God's power are the heavens and the earth that were created in such an amazing way, and the existence of diverse and scattered living beings between them." He is very capable of

gathering them all on the Day of Resurrection if he wills.

## 2. Mars

Scientists starting in the mid-20th century have carried out massive explorations to look for extraterrestrial life, including on the red planet, which is increasingly being exploited. Until the discovery of water on Mars, which became one of the proofs of the existence of microscopic life (Rafi et al., 2021).

On the planet Mars, scientists found alluvial flows formed by water flows millions of years ago and areas close to the Mojave crater. This event was confirmed by NASA scientists, who, with the help of the Mars Reconnaissance Orbiter (MRO), which at the time was orbiting Mars, carried out documentation using the HiRISE (High-Resolution Imaging Science Experiment) camera. This event was also corroborated by the findings of Curiosity, which launched Space Shuttle 41 at Cape Canaveral, Florida, on November 26, 2011, at 10:02 a.m. local time. Atlas V rocket soaring perpendicular to the sky at a height of 62 meters. Deliver this vehicle to the Red Planet's Mars Science Laboratory Curiosity.

Curiosity's landing was considered successful; during the first 40 days of its adventure, Curiosity found evidence of traces of water flow on ancient Mars that flowed at several sites. Curiosity discovered pebbles similar to rocks in Earth's rivers, ranging in size from a grain of sand to the size of a golf ball.

The University of California, Berkeley scientist William Dietrich said that "from the size of the pebbles found, it could be interpreted that the water was moving about three meters per second, with a depth somewhere between ankle and hip."

The site where the rock was found is located between the northern rim of the Gale crater and the foot of Mount Sharp, a mountain within the Gale crater. "A long, flowing stream can be a livable environment." It's not our top choice as an organic preservation environment, though we're still going to Mount Sharp. "But we have found the first potentially habitable environment," said John Grotzinger, lead researcher from the California Institute of Technology.

Traces of this water flow are undisputed on the planet Mars. This shows that the planet Mars is a desert planet that was once wet. The results of the NASA team's estimation are that the red planet still has water sources that exist at a depth of about 100–400 meters underground. From making trenches on this red planet, which is about 2,500 cubic meters of water. In this way, it is estimated that the water on the red planet still has single-celled living things. The Phoenix probe landed on Mars on May 25, 2008, at 7:53 GMT. By taking seven months to travel from Earth to Mars at a distance of 422 million miles (675 million kilometers).

The major discovery made by Phoenix was to confirm the presence of water ice under the surface layer of the land on the northern plains. "Phoenix fulfilled the dream of touching the water on Mars for the first time," said McCuiston. Phoenix also found that the soil at the landing site was wetter than soil samples collected by the Mars Exploration Rover (Spirit and Opportunity) mission, which landed near the equator (Lailiyah, 2020).

Earlier in November 2009, a team of scientists from the Johnson Space Center, including David McKay, confirmed that there was "strong evidence" that life may have existed on ancient Mars. After reexamining the meteorite using the more advanced analytical instruments that are now available. Overall, the team concluded that the biogenic hypothesis has been strengthened by the abundance of traces of life in other Martian meteorites. So ALH84001 is just one that holds fragments of a life on ancient Mars.

Electron microscopy has helped reveal the structure, the chain in the ALH84001 meteorite fragment, which may be a fossilized form of bacteria. The structures that have been found are 20–100 nanometers in diameter, the same size as nanobacteria. This first finding strengthens the existence of life beyond Earth (Imron et al., 2019).

This discovery indicates to humans that there is a possibility of life on other planets, as said by Allah SWT. In Surat Al-Nahl verse 49, it says: "And to Allah alone bow down all that is in the heavens and all the creatures that move on the earth, and also the angels, while they (the angels) are not proud of themselves." (Al-Nahl: 49).

Quraish Shihab states that the interpretation of the letter above is the word "And" not only objects that have the potential to have shadows that are submissive and obedient to His decrees and destiny, without once or for a moment disobeying, everything that is in the heavens and on earth, namely all creatures those who crawl on earth or who are everywhere and so are the angels of Allah's servants who are close to Him, while they, namely the angels do not brag for a moment even though they are constantly obedient and never for a moment disobey, but they are also still and constantly fearing their Lord Whose power is over them and the angels, constantly doing what Allah commands them to do (Nurcresia et al., 2019).

Recent data from Galileo indicate that Io has little or no water. This is likely because the planet Jupiter was very hot, to begin with as it evolved in the solar system. After Io, there is Europa, which is the sixth satellite of the planet Jupiter, the fourth largest moon, and the second of the Galilean satellites.

The discovery of Europa took place on January 7, 1610. This satellite was discovered directly by Galileo Galilei with the help of a 20-times magnification telescope at the University of Padua. Europa is one of the more subtle objects in the solar system due to the small number of craters on its surface, which is still relatively young and tectonically active.

Most scientists also believe that the layer of liquid water under the surface of Europa is warmed by the heat generated by the tides from the planet Jupiter. Europa's surface is even cooler, averaging about 110 K (-160° C) at the equator and only 50 K (-220° C) at the poles. The dark interior of Europa is now considered the most likely place for extraterrestrial life to exist. This is because the facts found on the surface and inside of Europa are oceans. It is capable of supporting the presence of water in liquid form.

This is what makes Europa not only support the life of anaerobic microbes (which do not require oxygen), but it also has the potential to produce larger aerobic organisms such as fish. Even in 2006, Robert T. Pappalardo, assistant professor at the Laboratory of Atmospheric and Space Physics at

the University of Colorado at Boulder, said that Europa has the potential to become a place to live.

The 7th satellite, namely Ganymede, which is a satellite of the planet Jupiter, orbits the planet Jupiter from a distance of 1,070,000 kilometers. And has a diameter of 5262 kilometers, with a weight of  $1.48 \times 10^{23}$  kilograms.

The existence of water in liquid form on Ganymede, buried at a depth of 200 kilometers underground, can be said to be proof that the largest moon of Jupiter may have oceans, which are a key ingredient of life.

Earth has water, which is the basis of life. The discovery of water on Ganymede raises scientists' hopes that someday extraterrestrial life may be found. Margaret Kivelson, a scientist from California, said that liquid water had been found in Ganymede. And also, the ocean has salt water. The hydrated mineral salts on Ganymede are similar to those on Europa (Haddade, 2016).

#### B. Life on Planets other than Earth in the Perspective of the Qur'an

مِنَ الْأَرْضِ فِي وَمَا السَّمَوَاتِ فِي مَا يَسْجُدُ لِلَّهِ  
يَسْتَكْبِرُونَ لَا وَهُمْ وَالْمَلِكَةُ دَابَّةٌ

Meaning: "And to Allah alone bow down all that is in the heavens and all the creatures that move on the earth and (also) the angels, while they (angels) are not proud of themselves"

Some scholars say that the word *dabbah* (climbing creatures) indicates that these are creatures other than angels. Life outside of planet Earth is also discussed in several verses of the Qur'an, as follows: And your Lord knows who is in the heavens and on earth better than anyone else. And verily, we have preferred some of the prophets over others, and we gave the *zabur* to David. (Al-Isra': 55) It means: There is no one in heaven or on earth but one who will come to the Most Merciful God as a servant. (Mary: 93) It means: "All that is in the heavens and the earth prostrate (obey) to Allah alone the earth, either willingly or forcefully (and prostrating) its morning and evening shadow." (QS. Ar-Ra'd: 15) In the above verse, Quraish Shihab 132 states that the word "man" in the letter above is a pronoun for intelligent beings. The word

"who" here and in such verses is used as a basis by some scholars to indicate the existence of "intelligent" beings in the sky.

It can be seen from the explanation above that water is the main key to the lives of the reptiles themselves, which is explained in Qs. Verse 45 of An-Nur is as follows: Meaning: "And Allah has created all kinds of animals from the water, so some of them walk on their bellies, some on two legs, and some on four legs." "Allah creates what He wills; verily, Allah has power over all things." (Rahma et al., 2022).

explained again in Surat Al-Anbiya verse 30 below, which means: "And do the disbelievers not know that the heavens and the earth were once one thing, then We separated them." All living things are created from water. Then why don't they also believe?" (Al-Anbiya': 30)

This is confirmed again with the following Hadith, which means "He came to the Prophet SAW from Abu Hurairah RA, saying, "Verily, if I see you, my heart feels calm and my eyes cool, so tell me everything." "All things God created through water," the Prophet, peace be upon him, said. (HR. Ahmad, Musnadul Imam Ahmad bin Hanbal, Tahqiq-Shu'aib Al-Arnaut, Volume 14, No. Hadith 8295: 49)

From this, it is clear that water is the main key to life. Where there is water, there is life, both the life of microorganisms and complex life like humans. "Extraterrestrial life" refers to a life that exists outside of Earth. Aliens, who are often seen on television, cannot yet be completely trusted. Because until now, this life has only been limited to the discovery of microorganisms.

#### C. The Relevance of Science and the Qur'an Surah Al-Nahl Verse 49 Concerning Life on Planets Other Than Earth

The universe is vast; even the Milky Way galaxy was reported in January 2013 by a group of astronomers from the Harvard Smithsonian Center for Astrophysics (CIA) to have 17 billion planets similar to Earth, which is a large number. As it is known, in this solar system there are eight (8) planets, starting with Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune.

Planets that are considered to have life only exist on Earth. However, when Galileo embarked on a mission to search for life, he found water in liquid form. The author believes that when Venus was young, it had liquid water and that this condition could have supported life on the planet. As we know, the planet Venus is similar to the planet Earth. It's just that Venus's early evolution was too rapid in comparison to Earth, so the water on the planet Venus itself receded, preventing Venus from developing plate tectonics like Earth. so that the temperature of the planet Venus reaches 477 °C and makes Venus a barren, hot, and dry planet.

The discovery of granite by the Venus Express is also the key to the existence of life on Venus. As Nils Muller<sup>135</sup> said, "If there is granite on Venus, there must have been oceans and plate tectonics in the past." On August 7, 1996, President Bill Clinton himself stated that NASA had found ALH84001, which is a bacterial fossil, as the key to proving that on Mars there is life in the form of microorganisms called biomorphs. Allah SWT. Before the discoveries made by scientists 14 centuries ago, the Qur'an had given a hint to anyone who would think about it that in the Qur'an there is life other than on this earth. As stated in Ash-Shura verse 29, "Among (these verses) His signs are the creation of the heavens and the earth, as well as the creatures that He spread on both." and He is All-Powerful to collect them all when He wills."

At Qs. Al-Nahl verse 49, also means, "And to Allah alone, prostrate everything that is in the heavens and all creatures that crawl on the earth, and also the angels, while they (the angels) do not boast." In this letter, Allah shows life in the sky in the form of dabbah (climbing creatures) in his samawat or sky. Humans cannot say that in the letter what is meant by dabbah is an angel because "dabbah" itself means walking very smoothly, not walking on all fours, or using his feet.

As found in Qs. Fathir verse 1, meaning: "All praise be to Allah, the Creator of the heavens and the earth, who made angels as messengers (to manage various matters) who have wings, of (there are) two, three, and four."

Allah adds to His creation what He wills. "Verily, Allah is powerful over all things." (Qs. Fathir: 1) Because angels have wings, it is clear that the dabbah in the sky does not refer to an angel. In fact, in searching for life outside of planet Earth, there is an organization called SETI.

SETI stands for "Search for Extraterrestrial Intelligence." Recently, the SETI Institute has just launched a new tool to help scientists track aliens. The tool is called Technosearch, which was developed by SETI in collaboration with Research Experience for Undergraduates (REU).

Based on the explanations above, the planet Mars is very interesting because the Korolev crater on Mars itself has water in liquid form, which is suspected of having anaerobic or aerobic life. Even on Mars itself, long-flowing streams are found in an environment that can be said to be habitable. so that the existence of water on Mars can no longer be disputed. Unlike the satellites of Jupiter, which are suspected of having life on Io, Europa, and Ganymede in these three Jupiter months, scientists are actively researching them because these three satellites have water. But Io, which is the most active planet in the solar system because it has 400 active volcanoes, is declared to be insufficient to support life.

The effects of the tides between Io, Europa, and Ganymede themselves cause Io to not have water as its main source of life, even though there is still oxygen in Io's atmosphere. However, in the absence of hydrogen, they cannot bond together to form water. Thus, on Io itself, there is little possibility of life because water, the key to life, is very minimal. As where in Qs. Surah Al-Anbiya follows, which makes water the main source of life, meaning: "And do those who disbelieve do not know that the heavens and the earth were both one solid, then we separated the two. We created everything living out of water. "So why do they not also believe?" (Al-Anbiya': 30) (Ananda et al., 2015).

Europa itself is very different from Io, in that the interior of the Europa satellite is flooded with warm water. And this place is believed to be the most hospitable place for life on earth. And very possibly, there is single-celled animal life there. Although no evidence has been found for the

existence of life, the presence of water in liquid form makes us certain that there is life there. As Robert T. Pappalardo said, Europa is not only a place for anaerobic (not requiring oxygen) microbial life, but Europa itself has the potential to become a place for life such as fish.

The conditions of planets such as Venus, Mars, the satellite Io, and Europa, which give signs of being habitable places because they have water in liquid form, make us aware that life does not only exist on earth. On other planets too, living things have the right to exist. The conditions for a planet to have life are not arbitrary because they follow indicators of life on Earth, such as the presence of water, the presence of

elements of compounds such as oxygen, hydrogen, carbon dioxide, etc., and the ambient temperature is neither too hot nor too cold. Because life will be difficult to survive if it is too hot. Although, for the time being, life is only a microorganism due to the limited capabilities of human-made tools and the limited human knowledge available.

The results of the research and analysis above show that life exists on planets other than Earth. Life other than on planet Earth is often referred to as extraterrestrial. Newly discovered life is still in the form of microorganisms, and why can it be said to have life because these planets and satellites have water in liquid form, which is the main ingredient in the formation of life itself. The life of reptiles, or what is often called *dabbah* in the Qur'an, is described in the letter *AsySyura* verse 29, *Al-Nahl* verse 49, and other letters that invite us to reflect again on the fact that there is still another life outside the earth. In the Qur'an itself, it is called *samawat* which means "sky."

Science and the Qur'an here are still related to each other, there is no difference between the interpretation of the Qur'an and scientific findings. This teaches us that the Qur'an is the main source of knowledge itself.

## Conclusions

Based on the formulation of the problem and the results of the analysis of life on planets other than earth in the perspective of the Al-Qur'an letter *Al-Nahl* verse 49, it can be concluded as follows: 1) Life outside planet earth or often referred to as extraterrestrial in the current scientific perspective has been found the existence of water in liquid form is the main key to the existence of life and life is still in the form of microorganisms such as those on the planet Venus, Mars satellite Io and Europa belonging to Jupiter. 2) Life on Earth as seen through the eyes of QS *Al-Nahl* verse 49 is marked with the word *dabbah* (climbing creatures) which in *Al-Mishbah's* interpretation states that this verse is a hint about the existence of life on other planets and *samawat* which means heaven (plural) which is interpreted as planets. 3) Scientific discoveries about the existence of life on planets other than Earth have a very good correlation with what is contained in *Surah Al-Nahl* verse 49 and other surahs in the Al-Qur'an which discuss extraterrestrial life. Several planets, such as Mars, Venus, the satellite Io, and Europa, now in the sky, are thought to have supported life in the form of microorganisms, both aerobic and anaerobic. Because water has been found in liquid form.

## References

- Ahsan, Z. (2012). The Qur'an , Basic Scientific Research and Technology (Perspective ). *Revelation and Science*, 03(01), 28–39.
- Ananda, T. A., Safriadi, N., & Sukamto, A. S. (2015). Penerapan Augmented Reality Sebagai Media Pembelajaran Mengenal Planet-Planet Di Tata Surya. *Jurnal Sistem Dan Teknologi Informasi (JUSTIN)*, 1(1), 1–6.
- Haddade, H. (2016). Air Perspektif Al-Qur'an dan Sains. *Tafsire*, 4(2), 17–30.
- Ibrahim, M. A. (2019). Mountain As Stabilizers for Earth from the Quranic and Modern Science Perspectives. *IJASOS- International E-Journal of Advance in Social Sciences*, V(15), 1287–1292.
- Imron, M. Al, Sodikin, & Romlah. (2019). Meteor dalam Perspektif Al-Qur'an dan Sains. *Indonesian Journal of Science and Mathematics Education*, 02(3), 388–398.
- Lailiyah, S. (2020). Keilmiah Sains Adalah Bukti Kebenaran Al Qur'an. *Prosiding Seminar Nasional Pendidikan Fisika FITK UNSIQ 2020*, 2(1), 204–216.
- Mohammed, D., Aini, Q., Supriyanti, D., & Anggraeni, M.

- (2021). Assimilate The Qur'an's View with Science and Technology Perspectives. *Aptisi Transaction Technopreneurship (ATT)*, 3(1), 42–47.
- Mubin, N. (2020). Meteorologi dalam Perspektif Al- Qur'an dan Sains Modern. *SPEKTRA: Jurnal Kajian Pendidikan Sains*, 6(2), 168–179.
- Niqie, S. (2014). Pengaturan Outer Space Treaty 1967 Terhadap Penelitian yang Dilakukan Oleh Amerika Serikat. *Kumpulan Jurnal Mahasiswa Fakultas Hukum*, 1–23.
- Nurcahyo, F. (2018). Melegitimasi Upaya Perekayasaan Planet Melalui Perspektif Biosentris-Fungsional. *Jurnal Cogito*, 5(1), 1–55.
- Nurcesia, B., Simbolon, T. R., Aisy, L. R., Sembiring, M., & Setiawan, J. (2019). Kriteria Planet Layak Huni Sebagai Analisis Keberadaan Doppelganger Bumi. *Gravity*, 5(1), 73–87.
- Ozdemir, I. (2021). Towards An Understanding of Environmental Ethics from a Qur'anic Perspective. *Researchgate, January 2003*.
- Rafi, M., Wirahayu, Y. A., & Putra, A. K. (2021). Pengembangan Bahan Ajar Digital Materi Dinamika Planet Bumi Sebagai Ruang Kehidupan dan Keterkaitanya dengan Ayat Suci Al-Q ur'an untuk Memperkuat Aspek Spiritualitas Siswa. *Jurnal Integrasi Dan Harmoni Inovatif Ilmu-Ilmu Sosial*, 1(8), 967–979. <https://doi.org/10.17977/um063v1i82021p967-979>
- Rahma, S. N., Suliyannah, & Halim, A. (2022). How do Astrophysics and the Qur ' an Perceive the Extraterrestrial Life? A Qualitative Study. *Jurnal Pendidikan Fisika*, 10(2), 107–122. <https://doi.org/10.26618/jpf.v10i2.7433>
- Rasyid, A. N. (2020). Astronomi dan Kosmologi dalam Perspektif Al Qur'an. *VEKTOR: Jurnal Pendidikan IPA*, 1(1), 39–49.
- Ros, R. M., & Deeg, H. (2022). Planet dan eksoplanet. In *NASE Publications* (pp. 1–34).
- Saleh, N. A. (2022). Al-Zamakhshari's Rhetorical Questions in the Interpretation of Surat An-Nahl. *Dirasat, Shari'a Law Sciences*, 49(2), 154–163.
- Widodo, N. (2003). Sekilas Pengamatan Planet Mars. *LAPAN*, 1–5.