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The Meaning of Dabbah in Surah Ash-Shu'ara 29: An Astrobiological Approach

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ABSTRACT

This research attempts to prove the truth of the Quran with scientific facts based on the meaning of "dabbah" in Surah Ash-Shura 29, placing it within the scientific dialog of astrobiology. This is done by understanding the meaning of the interpretation and then linking it to exoplanet aspects and Unidentified Aerial Phenomena (UAP) phenomena. This research employs analytical interpretation methodology to examine the literal meaning, as well as the scientific interpretation approach to explore the relevance of the verses to contemporary knowledge. It contributes to scientific interpretation as an epistemological bridge between revelation and science, and offers a relevant interpretation framework for the development of contemporary Islamic studies. The study results indicate that classical commentators interpreted "dabbah" as a creature that moves on the surface of the earth, but modern science has expanded the horizons of interpretation thru the discovery of exoplanets in habitable zones and scientific studies of unexplained atmospheric phenomena. The integration of the two shows that the term "dabbah" does not only have a biological-literal meaning, but can also be read as a reflection of the cosmos on the possibility of extraterrestrial life.

Keywords: *Astrobiology*, *Dabbah*, *Exoplanet*, *Scientific Interpretation*,

Introduction

Since ancient times, humans have always been curious about life in outer space. The celestial bodies flying thru space make humans wonder if there is life beyond Earth, but human limitations in understanding outer space life mean that curiosity is never satisfied. Nowadays, humans are starting to create technology to explore outer space, from telescopes, exploration rockets, unmanned robots, and even space stations. All of these technologies were created to answer human curiosity about whether there is life beyond Earth.(Romadoni et al. 2025), the study of the relationship between the Quran and modern science continues to be an important discourse in contemporary Islamic studies. Cosmic verses, which speak of the signs of God's greatness in the universe, are often used as a basis for fostering cosmic awareness while also opening up space for dialog with science. One interesting verse to study in this context is Surah Ash-Shura, verse 29, which states

وَمِنْ اٰيٰتِهٖ خَلْقُ السَّمٰوٰتِ وَالْاَرْضِ وَمَا بَثَّ فِيْهِمَا مِنْ دَاۤبَّةٍۗ وَهُوَ عَلٰى جَمْعِهِمْ اِذَا يَشَاۤءُ قَدِيْرٌ

And among His signs is the creation of the heavens and the earth and the crawling creatures (dabbah) that He has dispersed throughout them. And He is Most Capable of gathering them whenever He wills.

Ibn Kathir, in his commentary, interprets "*dabbah*" as a living creature that walks on the earth, referring to a literal understanding of the existing biological diversity. However, the development of modern science, particularly in the field of astrobiology, opens up the possibility of expanding its meaning. Research on exoplanets in the habitable zone suggests that life may not be limited to Earth. Nicholas Wogan, for example, in a recent analysis of the planet K2-18 b, confirmed that although molecules considered biosignatures were found, the planet's atmospheric conditions more closely resemble a mini-Neptune that does not have a habitable surface(Wogan et al. 2024). Deb and his colleagues' research also showed that internal factors such as surface pressure and atmospheric stability are crucial in determining whether a planet can support life.(Deb et al. 2025) Furthermore, the study of Unidentified Aerial Phenomena (UAP) conducted by NASA and the Pentagon highlights the importance of a scientific approach in understanding unexplained aerial phenomena. Although there is no evidence yet to support the existence of extraterrestrial beings, this finding demonstrates the seriousness of scientific institutions in assessing phenomena previously considered taboo.(Study and Report, n.d.)

Secondary data were obtained from current, indexed, and open-access scientific literature, particularly in the fields of astrobiology, exoplanets, and studies of Unidentified Aerial Phenomena (UAP). For example, research by Madhusudhan and colleagues used the James Webb Space Telescope to study the atmosphere of planet K2-18 b and potential biosignatures.(Wogan et al. 2024). Another study by Zubairin exemplifies the application of scientific interpretation to the study of geology and the age of the Earth, demonstrating the flexibility of this approach in bridging revealed texts and natural sciences.(Zubairin 2023). Meanwhile, the official NASA report (2023) on UAPs emphasizes the importance of systematic scientific data collection in understanding unexplained aerial phenomena.(Study and Report, n.d.)

In a statement, it was mentioned that Astrobiology, as the study of the living universe, which describes the search for alien life outside Earth, can be used as an effort to find new "life" driven by awareness of the origin of life on Earth. The word Astrobiology was first used by an astronaut named Otto Sruve,(Satabdi Monhati 2022) so is life outside Earth justified in the Quran based on facts that have been discovered, or is it merely a lie?

Previous studies on QS. Asy-Syura: 29 generally emphasize the meaning of "*dabbah*" as referring to the earth, meaning living creatures scattered across the earth. This interpretation is theologically important, but it has not been widely read in the

context of dialog with modern science. Meanwhile, developments in astrobiology and exoplanet research are revealing new complexities in the discourse about life beyond Earth, potentially enriching the horizons of interpretation. To date, research that systematically connects classical interpretations with cutting-edge scientific findings is still limited. Thus, this research bridges that gap by offering an integration of scientific interpretation that positions the dabbah as a cosmic concept open to interdisciplinary dialog.

Methodology

This research uses a qualitative approach with a descriptive method, aiming to uncover facts and provide an accurate interpretation of the Quranic text in relation to phenomena.(Amir et al. 2023) On the other hand, this research study uses an analytical (*Tahlili*) interpretation research methodology, often referred to as text analysis to achieve theoretical understanding,(Erwanto 2023) Therefore, his research is more focused on literature, meaning that the data collected comes from various books and literature relevant to the main topic. Thus, the target of this research is the meaning of Dabbah in the study of al-Qur'an interpretation. Data was collected using data analyzed from written interpretation manuscript source texts linked to scientific evidence. The scientific interpretation approach is used to reread the verse in dialog with contemporary scientific findings. This approach is not intended to make the Quran a book of science, but rather an effort to find the relevance of the cosmic verses to modern empirical knowledge.(Study and Report, n.d.). The analysis was conducted in three stages: (1) description of classical interpretations; (2) comparative analysis with relevant modern scientific literature; (3) integrative synthesis that assesses the potential of scientific interpretations in connecting revelatory texts with contemporary scientific discourse.

Result

A. Tafsir of QS as-Syu'ara 29

The word *dābba* ('animal'), in both its singular and plural (*dawābb*) forms, appears in the Qur'an a total of eighteen times. In its Qur'anic context, *dābba* is often interpreted by Arabic mufassirūn, English-language translators, and other Islamic scholars as referring only to nonhuman animals, implying that the Islamic scripture does not consider humans to be part of the animal kingdom. However, an analysis of the Qur'anic contexts in which the animal concept is discussed reveals that this scripture adheres to the etymological (rather than the conventional) meaning of this word: any being that produces intentional movement, the primary meaning of the verb dabba, is a *dābba*. Therefore, so-called rational beings (humans, angels, and jinn) are part of the animal kingdom, a concept clearly expressed in many medieval Arabic lexicons whose definitions are shaped by the Qur'anic treatment of the

animal concept. Furthermore, evidence from within the Qur'anic text suggests that it appears to avoid lumping all animals into one indistinct group. Both of these observations could have a significant impact on the status and potentially the welfare of nonhuman animals in Islamic scripture, and therefore have implications for attitudes toward animal welfare.(Tlili and 2010 تليلي)

The dhab (Uromastyx aegyptia) is a type of lizard found in deserts and is one of the largest members of the genus Uromastyx. Dhabs can be found in Egypt, Libya, and throughout the Middle East, but they are very rare now due to habitat loss. Its extremely tough skin is often used by Bedouin Arabs. It is often called the Egyptian Mastigure, the Egyptian dab lizard, or the Egyptian spiny-tailed lizard. Crocodiles belong to the kingdom Crocodilia (or Crocodylia), which is an order of large reptiles that emerged and developed around 83.5 million years ago during the Late Cretaceous period. The dhab nation is equated with the crocodile nation, which is one type of this order. This order of crocodilians has thick scales made of keratin reinforced with bony plates called scutes, which serve as protection.(Ma'aly 2025)

Ibn Kathir explains, "And He is the one who has dispersed in it all kinds of living creatures that move on its surface," meaning, Allah has spread all kinds of living creatures on the earth that move on its surface.(Abu Fida Ibnu Katsir, n.d.) The word "dabbah" according to its linguistic meaning, refers to all living creatures that walk or move, whether small or large animals. This interpretation emphasizes the vastness of God's creation on earth and highlights biodiversity as proof of His power. Furthermore, Ibn Kathir concludes the interpretation of this verse with the phrase *wa huwa 'alā jam'ihim idzā yashā'u qadīr*.(Abu Fida Ibnu Katsir, n.d.) This quote emphasizes the theological aspect: that all creatures, both those scattered and those unknown to humans, remain under God's power. Thus, Ibn Kathir's interpretation places the dabbah in an earthly context, but simultaneously opens up space for reflection on the vastness of creation that is not limited to human knowledge.

Ibn Kathir's interpretation aligns with al-Tabari's, who interprets "dabbah" as any form of living creature that walks on the earth.(Abū Ja'far al-Ṭabarī 2006) Similarly, al-Qurtubi emphasized the diversity of creatures as part of the evidence of God's greatness in creation.(Muḥammad ibn Aḥmad al-Qurṭubī 2006) Thus, the consensus of classical commentators indicates an earthly orientation in interpreting the term "dabbah," although without ruling out the possibility of other unknown creations.

The development of modern science has led to the emergence of the scientific interpretation approach, which attempts to interpret cosmic verses while considering scientific findings. Wahyudin, for example, asserts that scientific interpretation can serve as an epistemological bridge to reconcile the Quran and science without diminishing the authority of the revealed text.(Wahyudin and

Nasikin 2022). In this context, "dabbah" can be understood not only as an earthly creature, but also as a symbol of the possibility of life beyond Earth (non-terrestrial life), as studied in astrobiology.

Safitri's study shows that the expansion of the meaning of "dabbah" in a contemporary perspective allows for a metaphorical-cosmic reading, where the term is not limited to land creatures, but can also be understood as a representation of life more broadly in the universe.(SAFITRI 2024). This approach aligns with Hidayatullah's view, which emphasizes the complementary nature of religion and science: revealed texts provide a horizon of meaning, while science supplies empirical data that enriches human understanding of nature.(Hidayatullah 2017).

To clarify the differences in orientation between classical and contemporary scientific interpretations, the following comparison table is presented:

Source of Interpretation	**Meaning of Dabbah**	**Interpretation Orientation**	**Main Explanation**
Ibn Kathīr	Living beings on Earth that walk on the surface of the Earth	Literal-theological	Affirming the vastness of God's creation on earth
Al-Ṭabarī	All living things that move	Literal-linguistic	Focus on language aspects and biological variation
Al-Qurṭubī	The diversity of creatures as a sign of God's greatness	Literal-biological	Emphasizing the biodiversity on Earth
Contemporary Scientific Interpretation	Earth creatures + potential for non-earth life	Dialogical-cosmological	Expanding the horizons of meaning thru astrobiology and exoplanets

Thus, the results of this study reveal two main findings. First, classical interpretations such as those of Ibn Kathir, al-Tabari, and al-Qurtubi understood "dabbah" in its literal sense, meaning a terrestrial living creature. Second, contemporary scientific interpretations open up space for reflective-critical interpretation, where the term can be linked to the development of modern science, particularly astrobiology and exoplanet research. This reinforces the idea that scientific interpretation is not intended to replace classical interpretation, but rather to expand the horizons of meaning to remain relevant to the dynamics of contemporary knowledge.

Discussion

A. Exoplanets, Habitable Zone, and Astrobiology

Starting in 1960, scientists have conducted experimental stages in an effort to find life beyond Earth by flying spacecraft such as Apollo, Viking, and Venera, but so far no signs of such life have been found. The search focuses on three elements that support life: water, a heat source, and organic matter.(Nasution 2024), While the Islamic holy book itself refers to it as the *Alam syahadah*, which can be divided into the universe (macrocosm) and the atomic world (microcosm). It can also be divided into the plant, animal, and human worlds. The Quran describes the universe as a book composed by a wise being, with each line and word being a sign of wisdom.(Khairuddin 2021)

The development of modern astrophysics has expanded humanity's horizons regarding the possibility of life beyond Earth. Thousands of exoplanets have been discovered thru observations from space telescopes such as Kepler and the James Webb Space Telescope (JWST). The current research focus is on planets located within the habitable zone, which is the region around a host star that allows for the presence of liquid water. However, as Deb and his colleagues emphasized, habitability is not only determined by distance from the star, but also by internal factors such as atmospheric pressure, the stability of the planetary mantle, and a chemical composition capable of supporting a biosphere.(Deb et al. 2025)

As knowledge advanced, scientists concluded the origin of life on Earth with the statement that no organic molecules means no life. Therefore, it can be concluded that creatures according to astrobiology are not much different from the definition of creatures in biology. That is, the element or compound that is the origin of living and intelligent beings, inanimate beings, or living beings only, such as animals and plants. Scientists haven't yet found a perfect figure that can be defined as a being like those on Earth. However, scientists are searching for life beyond Earth using three methods. First, exploration methods within the Solar System. Second, spectral analysis of planetary atmospheres for indications of biochemical life. Third, looking for signs of space technology.(Satabdi Monhati 2022)

Scientists are trying to find extraterrestrial life, especially intelligent life. SETI (Search for Extraterrestrial Intelligence) was born, and a new discipline was born: BioAstronomy (astrobiology), which emerged from the union of astronomy and biology. The International Astronomical Union now has a special commission dedicated to this branch of science. In fact, for centuries scientists and laypeople have pondered the possibility of life beyond Earth, both primitive and biologically advanced. It's only in the last three decades that scientists have begun to enter the experimental phase in their search for life beyond Earth. Spacecraft like Apollo, Viking, and Venera were launched to identify the possibility of life on the moon and

other planets in the solar system.(Lajnah Pentashih Al-Qur'an Kementrian Agama, n.d.)

Then, if there were life on distant planets, the universality of religious teachings from Earth would clearly be eroded. One might ask: why would the inhabitants of other planets care about the teachings of prophets who were all born on Earth and never spoke about them?(Hana 2020), Planet K2-18 b, for example, briefly gained attention due to the discovery of carbon molecules in its atmosphere. However, Wogan et al. emphasize that the characteristics of this planet are more like a mini-Neptune with a thick gaseous atmosphere, making a surface habitable for terrestrial life like on Earth almost non-existent.(Wogan et al. 2024) On the other hand, the TRAPPIST-1 system, particularly TRAPPIST-1e, is considered one of the most promising candidates because it is Earth-sized, rocky, and located in the habitable zone.(Grimm et al. 2018). This finding confirms that the conditions for a planet to be habitable are very complex and cannot be reduced to a single indicator. If linked to the interpretation of Ibn Kathir, the meaning of "dabbah" is understood as living creatures on Earth. However, the scientific interpretation approach allows for an expansion of this meaning as a cosmic reflection on the possibility of non-Earthly life. Thus, classical interpretation provides a literal basis, while modern science adds an empirical horizon that enriches the scope of the verse's meaning.

B. Steam Phenomenon and Scientific Approach

Beside exoplanets, the phenomenon of Unidentified Aerial Phenomena (UAP) is also gaining attention. In 2022, NASA formed an independent team to investigate UAPs based on scientific data collection. The 2023 year-end report confirms that although there is no evidence related to alien technology, the investigation emphasizes the need for improved sensor quality, the use of artificial intelligence, and public involvement in reporting phenomena.(Study and Report, n.d.)

The Pentagon-formed All-domain Anomaly Resolution Office (AARO) also released a report in 2024, noting over 700 UAP cases. Most could be identified as conventional objects such as balloons or civilian aircraft, and no evidence of non-terrestrial technology was found.(Study and Report, n.d.). Nevertheless, the openness of official institutions to researching this phenomenon shows that modern science is brave enough to examine issues that have long been considered taboo. In the context of scientific interpretation, UAP is not immediately understood as proof of the existence of cosmic creatures, but rather as an epistemological opportunity to improve data accuracy, test scientific methods, and foster awareness that the universe still holds many mysteries that demand human humility before the Creator.

C. Synthesis of Conflict and Integration

The relationship between interpreting the Quran and modern science is obligatory, not in the sense that revelation must be forced to conform to scientific findings, but because both serve as two windows for understanding reality. The Quran presents a horizon of values and meaning, while science provides empirical explanations for natural phenomena. Therefore, the integration of interpretation and science is necessary to avoid the epistemological dichotomy that has historically limited the development of knowledge. Wahyudin emphasized that the dialog between the Quran and science forms the foundation of an ethical and transformative scientific civilization, as revelation provides spiritual direction, while science offers objective methodology.(Wahyudin and Nasikin 2022)

Within this framework, the term "*dabbah*" in Surah Ash-Shura: 29 opens up layered possibilities for interpretation. Literally, as explained by Ibn Kathir, "*dabbah*" means a living creature that moves on earth.(Abu Fida Ibnu Katsir, n.d.) However, developments in contemporary science, particularly astrobiology and exoplanet research, are expanding the horizons of interpretation. Life may not be limited to Earth, but could also potentially exist on other planets that meet the criteria for a biosphere. With this perspective, the *dabbah* can be read as a cosmic metaphor for the possibility of non-earthly creatures that are also part of God's creation. Classical interpretations provide a linguistic-theological basis, while scientific interpretations allow for cosmological reflection that aligns with the Quran's spirit of encouraging humanity to contemplate the greatness of the universe.

The role of scientific interpretation in this context is as a dialogical approach. It serves as a mediator connecting revealed texts with scientific data without interpreting the Quran in a reductionist manner. Hidayatullah stated that religion and science are complementary: revelation provides a metaphysical horizon, while science provides empirical evidence.(Hidayatullah 2017) A real-world example of this practice can be found in the Tafsir Salman in Indonesia, which attempts to reinterpret cosmological verses using modern astronomical and cosmological knowledge.(Baharuddin 2023) With this approach, scientific interpretation not only maintains the relevance of the text but also encourages science to be value- and ethics-oriented.

Thus, the integration of classical interpretation and modern science produces a synthesis: first, literal interpretation asserts that the *dabbah* is an earthly creature; second, scientific interpretation expands the meaning of the *dabbah* as a cosmic symbol that can encompass non-earthly life; third, the obligatory relationship between interpretation and science establishes an epistemological framework that facilitates critical dialog, enriches scientific knowledge, and strengthens faith in the greatness of Allah as the Creator of all beings in the universe.

Conclusion

This study found that the classical interpretation of Surah Ash-Shura: 29 places the term "*dabbah*" in its literal meaning as earthly living creatures scattered across the surface of the earth, emphasizing biodiversity as evidence of Allah's power. Thus, classical interpretation provides a strong theological foundation that the diversity of creatures is part of the signs of His greatness. However, the development of modern science, particularly astrobiology and exoplanet research, opens up new horizons in understanding the concept of life. Studies of the planets K2-18 b and TRAPPIST-1e show that habitability requirements are not simple, but rather involve many factors such as atmospheric stability, interior composition, and the presence of liquid water. The UAP phenomenon, scientifically studied by NASA and the Pentagon, also shows that humans continue to strive to understand unexplained signs in the sky. Within the framework of scientific interpretation, the term "*dabbah*" can be understood not only in its literal meaning, but also as a cosmic reflection on the possibility of non-earthly creatures, and in modern science as a complement to explaining the reality of God's creation.

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Bibliography

Abu Fida Ibnu Katsir. n.d. *Tafsir Al-Qur'an al-Adzim*. Beirut: Dār al-Ma'rifah.

Abū Ja'far al-Ṭabarī. 2006. *Jāmi' al-Bayān Fī Ta'Wīl Āy al-Qur'ān*. Beirut: Dār al-Kutub al-'Ilmiyyah.

Afisah, Mamluatun. 2023. "Tafsir Ilmi: Sejarah, Paradigma Dan Dinamika Tafsir." *Al-Fanar: Jurnal Ilmu al-Qur'an Dan Tafsir* 6: 63–80

Amir, Selamat, Muhamad Alihanafiah Norasid, and Ahmad Bazli Ahmad Hilmi. 2023. "Scientific Studies of the Qur'ān in the Contemporary Era: An Analysis of Concept, History, and Methodology." *Journal of Islamic Thought and Civilization* 13 (1). https://doi.org/10.32350/jitc.131.13.

Baharuddin, Didin. 2023. "Tafsir Salman: Upaya Integrasi Al-Quran Dan Sains." *Jurnal Studi Islam* 11 (2): 216–37. https://doi.org/10.33477/jsi.v11i2.4709.

Deb, Sushmita, Kaushal Sharma, Samrat Biswas, and Biman Jyoti Medhi. 2025. "Exploring the Habitability and Interior Composition of Exoplanets Lying

within the Extended Habitable Zone." *Monthly Notices of the Royal Astronomical Society* 541 (2): 1180–94. https://doi.org/10.1093/mnras/staf1057.

Erwanto, Dian. 2023. *Metodologi Penelitian Tafsir Al-Qur'an*. Yogyakarta: CV Bintang Semesta Media. https://play.google.com/books/reader?id=rcHcEAAAQBAJ&pg=GBS.PR1&hl=en_US.

Grimm, Simon L, Brice-olivier Demory, Michaël Gillon, et al. 2018. *Astrophysics The Nature of the TRAPPIST-1 Exoplanets*. 68.

Hana, Lidwina. 2020. "Diskursus Extraterrestrial: Hoax atau Proyeksi, Skeptis atau Optimis." *Jurnal Studi Kultural* 5 (1): 34–38.

Hidayatullah, Syarif. 2017. "Relasi Agama Dan Sains Dalam Pandangan Mehdi Golshani." *Jurnal Filsafat* 27 (1): 65. https://doi.org/10.22146/jf.21972.

Khairuddin, Khairuddin. 2021. "Konsepsi Islam Tentang Alam dan Implikasinya pada Pendidikan." *EDUKASI: Jurnal Pendidikan* 9 (2): 150–64. https://doi.org/10.32520/judek.v9i2.1731.

Lajnah Pentashih Al-Qur'an Kementrian Agama. n.d. *Eksistensi Kehidupan*. https://www.kemenag.go.id/read/sah-kemenag-kini-punya-pejabat-pentashih-mushaf-alqur-an-jj1ly.

Ma'aly, Dasman Yahya. 2025. "Dhab dalam Perspektif Hadis." *Al-Furqan : Jurnal Agama, Sosial, dan Budaya* 4 (3). https://publisherqu.com/index.php/Al-Furqan.

Muḥammad ibn Aḥmad al-Qurṭubī. 2006. *Al-Jāmi' Li Aḥkām al-Qur'Ān*. Beirut: Dār al-Kutub al-'Ilmiyyah.

Nasution, Hasiolan. 2024. "Tafsir Ilmi Mukjizat al-Qur'an Tentang Astrofisika." *TAFAKKUR : Jurnal Ilmu Al-Qur'an dan Tafsir* 4 (2): 231–50. https://doi.org/10.62359/tafakkur.v4i2.255.

Romadoni, Muhammad, Ahmad Mustafa Kamal, Muhammad Afnan, and Ahmad Mujahid. 2025. "Kehidupan di Luar Angkasa dalam al-Qur'an: Studi Komparatif antara Tafsir Tanthawi Jauhari dan Tafsir Kemenag." *JIIC: Jurnal Intelek Insan Cendikia* 2 (6).

SAFITRI, H. 2024. *Makna Dabbah Dalam Perspektif Al-Qur'an (Kajian Semantika Al-Qur'an)*.

Satabdi Monhati. 2022. "Astrobiology: Eksploring Life Beyond." *International Research Journal of Modernization in Engineering Technology and Science* 3 (9).

Study, Independent, and Team Report. n.d. *Independent Study Team Report*.

Tlili, Sarra, and 2010 .تليليسارّة. "The Meaning of the Qur'anic Word 'Dābba': 'Animals' or 'Nonhuman Animals'? / معنى كلمة 'دابّة' في القرآن: كل ما هو حيوان أو غير الانسان من الحيوانات." *Journal of Qur'anic Studies* 12: 167–87. JSTOR.

Wahyudin, Dedi, and Moh Nasikin. 2022. "Integrasi-Interkoneksi Al-Qur'an, Sains, Dan Peradaban: Konsep, Metode Dan Proyeksi." In *El-Umdah*, vol. 5. no. 1. Preprint. https://doi.org/10.20414/elumdah.v5i1.5221.

Wogan, Nicholas F., Natasha E. Batalha, Kevin J. Zahnle, Joshua Krissansen-Totton, Shang-Min Tsai, and Renyu Hu. 2024. "JWST Observations of K2-18b Can Be Explained by a Gas-Rich Mini-Neptune with No Habitable Surface." *The Astrophysical Journal Letters* 963 (1): L7. https://doi.org/10.3847/2041-8213/ad2616.

Zubairin, Achmad. 2023. "Tafsir Ilmi Dan Geologi; Analisa Usia Bumi." *Al-Tadabbur: Jurnal Ilmu Al-Qur'an Dan …* 8 (0): 2. https://doi.org/10.30868/at.v8i02.

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