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**Scientific Signs in Surah Ar-Rahman According to Tantawi Jawhari's Perspective in *Tafsir al-Jawahir***

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**Abstract:** *The Qur'an, as the holy book of Muslims, contains scientific signs that direct humans to reflect on natural phenomena as signs of the greatness of Allah SWT. Surah Ar-Rahman, one of the surahs rich in scientific signs, invites humans to explore science and understand the universe through a scientific approach. In this context, Tantawi Jawhari, through Tafsir al-Jawahir, stands out as an interpreter with a scientific approach that connects the verses of the Qur'an with the discoveries of modern science, showing that divine revelation and science complement each other. This study is a qualitative study with a descriptive-analytical nature that uses a hermeneutic and contextual approach with data sources originating from the book Tafsir al-Jawahir and supporting literature, which are processed through the stages of identification, classification, and thematic interpretation of verses containing scientific signs with content and contextual analysis methods used to draw conclusions systematically and comprehensively. These findings confirm that Surah Ar-Rahman not only provides spiritual guidance but also offers scientific insights that encourage humans to be grateful, maintain the balance of nature, and utilize science wisely. This*

*study concludes that the Qur'an and science complement each other, providing guidelines for a harmonious and sustainable life.*

**Keywords:** *Scientific Signs, Surah Ar-Rahman, Tantawi Jawhari, Tafsir al-Jawahir.*

## **A. Introduction**

Humans have superiorities that distinguish them from other creatures, reason and thought.<sup>1</sup> This superiority is not without purpose since Allah SWT created humans with reason and mind as a mandate to carry out the role as caliphs on earth. As caliphs, humans are given the responsibility to maintain, manage, and utilize the natural resources on earth wisely. Reason and mind are the main instruments that enable humans to carry out this mandate.

Through the gift of reason and mind, humans are not only given the ability to survive, but also to think critically, reflect, and analyze the various things that happen around them. Deep curiosity about the universe, from natural phenomena to more complex life structures, drives humans to continue to seek knowledge. Every new discovery and observed phenomenon triggers the birth of new questions that need answers. This is what then the driving force for humans to explore science becomes.

Science develops as a result of a continuous process of thinking, experimenting, and observing. From ancient times to the present, humans have tried to answer the various mysteries of the universe, uncover the secrets of life, and understand the laws that govern this world. This process gave birth to a scientific tradition that continues to develop over time.<sup>2</sup> Science not only helps humans in meeting their daily needs, but also enriches understanding of the meaning of life, the universe, and the position of humans in it.

Science is a method used to search, obtain, and develop an understanding of a problem in order to be used as a study based on a

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<sup>1</sup> Jonar T. H. Situmorang, *Filsafat Ilmu Suatu Analisis Berpikir Benar dan Logis* (Yogyakarta: Penerbit Andi, 2023), 182; See also Rois Mahfud, *Mimbar Agama Islam* (Depok: PT. RajaGrafindo Persada, 2023), 303.

<sup>2</sup> Fadhilah Nur Oktaviani, Dina Maria Ulfa, and Agung Winarno, "Peran Ilmu Pengetahuan dalam Perkembangan Penelitian Ilmiah," *Jurnal Bintang Manajemen* 2, no. 4 (November 28, 2024): 141–150, <https://doi.org/10.55606/jubima.v2i4.3435>.

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set of universal concepts and theories. Therefore, science can essentially be interpreted as a way to explain several main aspects: what is the object of study (ontology), how science is formed and what is the basis for its formation (epistemology), what are its benefits for humanity (axiology), and what procedures are used to study it (methodology).<sup>3</sup>

If discussed from a religious perspective, science has existed since the creation of the first human, the Prophet Adam. Science then developed because of the curiosity that arose from within humans. This happened as a response to the urge to fulfill the needs of living life on earth, so that humans continue to experience development in their lives.<sup>4</sup>

Knowledge obtained through reason and thought is not only aimed at worldly interests, but can also be a means of getting closer to the Creator.<sup>5</sup> In an Islamic perspective, science is considered a way to admire the greatness of Allah SWT which is reflected in His creation.<sup>6</sup> By understanding the laws of nature, humans can feel the greatness and majesty of Allah SWT who created everything with perfect order and harmony. Therefore, the search for knowledge not only serves as a tool to master nature, but also as a means to increase faith and piety to Allah SWT.

Thus, the reason and mind bestowed by Allah SWT upon humans should be utilized optimally to explore knowledge. Ultimately, this knowledge can provide great benefits to humanity and help maintain the balance of nature, in accordance with the original purpose of the creation of humans as caliphs on earth. Since the beginning of their existence, humans have been driven by

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<sup>3</sup> Muannif Ridwan, Ahmad Syukri, and B. Badarussyamsi, "Studi Analisis tentang Makna Pengetahuan dan Ilmu Pengetahuan serta Jenis dan Sumbernya," *Jurnal Geuthèë: Penelitian Multidisiplin* 4, no. 1 (April 30, 2021): 31, <https://doi.org/10.52626/jg.v4i1.96>.

<sup>4</sup> Muhammad Nasir, "Aksiologi Ilmu Pengetahuan dan Manfaatnya Bagi Manusia," *Syntax Idea* 3, no. 11 (November 21, 2021): 2451, <https://doi.org/10.46799/syntax-idea.v3i11.1571>.

<sup>5</sup> Mohamad Yasin Yusuf, "Epistemologi Sains Islam Perspektif Agus Purwanto," *Analisis: Jurnal Studi Keislaman* 17, no. 1 (July 1, 2017): 65–90.

<sup>6</sup> Abuddin Nata, *Islam dan Ilmu Pengetahuan* (Jakarta: Prenada Media, 2018), 18.

curiosity to understand the world around them, both through scientific and spiritual approaches. This curiosity produces science and religion, where science is through rational and empirical methods, while religion is through analysis and reflection that provide an understanding of the meaning of life.<sup>7</sup> Although at first glance the two are often considered as separate entities, in the Islamic tradition, science and religion actually complement each other.<sup>8</sup> Both can not only walk side by side, but also enrich each other, so that together they support humans in carrying out their role as wise caliphs on earth.

In Islam, science and religion are seen as two sides of the same truth. Science provides an understanding of the material world and how it works, while religion provides moral and spiritual guidance for humans.<sup>9</sup> The collaboration between the two helps humans live their lives wisely and responsibly. This integration, as taught in the Islamic tradition, allows humans to achieve perfection in carrying out their duties as caliphs on earth, with the main guidance coming from the Qur'an.

The Qur'an, as the holy book of Muslims, contains verses that cover various dimensions, both spiritual and scientific. These verses not only provide moral and legal guidance, but also contain hints about the creation of the universe, the process of life, and natural phenomena that regulate the world order. One interesting chapter in this context is Surah Ar-Rahman. This chapter not only emphasizes God's abundant grace, but also presents many verses that can be connected to scientific knowledge, such as about the universe, biology, and physics. Surah Ar-Rahman describes the order of the

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<sup>7</sup> B. E. Babich, *Nietzsche, Epistemology, and Philosophy of Science: Nietzsche and the Sciences II* (Berlin: Springer Science & Business Media, 2013), 248.

<sup>8</sup> Syarif Hidayatullah, "Agama dan Sains: Sebuah Kajian tentang Relasi dan Metodologi," *Jurnal Filsafat* 29, no. 1 (February 28, 2019): 102–133, <https://doi.org/10.22146/jf.30246>; See also Rika Mahrissa, "Integrasi Ilmu Pengetahuan dan Agama," *Book Chapter of Proceedings Journey-Liaison Academia and Society* 1, no. 1 (April 28, 2022): 437–448.

<sup>9</sup> Muna Hajita, "Paradigma Integrasi Agama dan Sains dalam Pembelajaran Pendidikan Agama Islam," *Ta'lim: Jurnal Studi Pendidikan Islam* 7, no. 2 (July 6, 2024): 265–289, <https://doi.org/10.52166/talim.v7i2.6614>.

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universe that is in line with scientific principles found in various disciplines.<sup>10</sup>

Classical Islamic exegesis has extensively discussed the relationship between the Qur'an and science. One of the famous exegetes who linked science to revelation is Tantawi Jawhari. In his work entitled *al-Jawahir fi Tafsir Al-Qur'an Al-Karim*, Jauhari attempts to interpret the verses of the Qur'an by linking his textual understanding with the scientific knowledge that was developing at that time. He believes that the Qur'an, as the final revelation, is not only relevant to a particular historical context, but also has a depth that can be connected to the ever-growing scientific knowledge. One of the suras discussed in Jauhari's exegesis is Surah Ar-Rahman, which he believes contains scientific hints related to the creation of the universe, the process of life, and various other natural phenomena.

Although there have been many studies that connect the Qur'an with science, studies on scientific signs in Surah Ar-Rahman, especially in the tafsir *al-Jawahir* by Tantawi Jawhari, are still relatively limited. One relevant study is the study of Rizkiawati and her colleagues, which shows that Tantawi Jawhari emphasizes the importance of Muslims following the development of science by combining science, rationalism, and hadith in his tafsir.<sup>11</sup> In addition, the results of Maula and Safruroh's research reveal that the integration of science and religion is not only possible, but is also able to enrich spiritual and scientific understanding, while also confirming the compatibility of Islam with scientific exploration in understanding the greatness of Allah SWT.<sup>12</sup>

In contrast to previous studies, this study has significant characteristics compared to other studies that also examine the

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<sup>10</sup> Abdul Bukhori Hafis, Hanafi Nasution Mahathir, and Muhammad Hutasuhut, "Memahami Makna Ijazul Ilmi dalam Fenomena Air Laut yang Terdapat dalam Surah Arrahman Ayat 19," *Al-Tarbiyah: Jurnal Ilmu Pendidikan Islam* 2, no. 4 (July 5, 2024): 75–88, <https://doi.org/10.59059/al-tarbiyah.v2i4.1419>.

<sup>11</sup> Risma Rizkiawati, Muhamad Husnul Maab, and Ibtidaiyatul Musyarofah, "Korelasi Sains dan Agama untuk Meningkatkan Literasi Prespektif Kitab Al Jawahir Fi Tafsir," *At-Tahfidz: Jurnal Ilmu Al-Qur'an Dan Tafsir* 2, no. 01 (2020): 93, <https://doi.org/10.53649/at-tahfidz.v2i01.516>.

<sup>12</sup> Nuaimah Anatul Maula and Safruroh, "Isyarat Ayat Al-Quran Terhadap Peristiwa Ilmiah," *Jurnal Ilmiah Nusantara* 1, no. 6 (November 8, 2024): 262, <https://doi.org/10.61722/jinu.v1i6.2809>.

relationship between the Qur'an and science. This study emphasizes an integrative approach that combines textual interpretation with modern scientific discoveries, as described by Tantawi Jawhari, who emphasizes the importance of utilizing science as a means to understand the kauniah verses in the Qur'an. In addition, Tantawi's approach uses the tahlili method with a distinctive rational style, different from other studies that often rely on traditional methods without explicitly exploring the relationship between the Qur'an and science. This study also contributes to strengthening the view that Islam is not only compatible with science, but also encourages scientific exploration to understand the greatness of Allah SWT through natural phenomena.

This research has urgency in the context of the development of integration between religion and science. Surah ar-Rahman, which is rich in scientific signs related to the creation of the universe, natural phenomena, and the order of the cosmos, becomes a relevant object to explore the relationship between the Qur'an and science. Tantawi's perspective in the interpretation of *al-Jawahir* offers a unique approach by combining textual analysis of the Qur'an, scientific knowledge, and rational methods. In addition, this research contributes to enriching the treasury of contemporary Qur'anic interpretation, providing guidance for Muslims to make the Qur'an a source of inspiration in exploring science, and promoting the integration of religious knowledge and science in responding to the challenges of modern civilization.

This research is qualitative research with a descriptive-analytical nature,<sup>13</sup> while the approach used is hermeneutic and contextual, which allows for in-depth analysis of the relationship between the verses of the Qur'an and scientific knowledge. The data sources for this study come from the book of tafsir *al-Jawahir* and supporting literature, such as books, journals, and articles that discuss scientific interpretation and the integration between the Qur'an and science. The

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<sup>13</sup> John W. Creswell, *Qualitative Inquiry and Research Design: Choosing Among Five Approaches* (California: Sage Publications, Inc., 2007), 52; See also John W. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (London: Sage Publications, Ltd., 2018), 65.

data collected is processed through the stages of identification, classification, and thematic interpretation of verses containing scientific signals.<sup>14</sup> The analytical method used is content analysis to explore Tantawi Jawhari's thoughts, as well as contextual analysis to evaluate its relevance to the development of modern science. The results of this analysis are used to compile systematic conclusions regarding the contribution of *al-Jawahir's* interpretation in strengthening the integration between religion and science, especially in revealing the greatness of Allah SWT through the kauniyah verses.

## **B. Biography of Tantawi Jawhari**

Sheikh Tantawi bin Tantawi al-Misri al-Syafi'i, better known as Tantawi Jawhari, was born in the village of Kifr Iwadilah, Egypt, in 1287 H/1870 AD. He died in Cairo, Egypt, on Thursday, 1 Zulhijjah 1358 H, or coinciding with January 11, 1940 AD.<sup>15</sup> In his youth, Tantawi studied at Al-Ghâr while helping his parents work as farmers. Then, he continued his education at al-Azhar in Cairo and successfully completed his studies at Darul Ulum in 1311 H/1893 M. Tantawi was greatly inspired by the teachings of Muhammad Abduh at Al-Azhar, especially in the field of interpretation which integrated the study of physics.<sup>16</sup> Muhammad Abduh's thoughts, especially regarding social reform and opposition to *bid'ah*, *waham* and *taqlid*, had a major influence on Thantawijawhari's intellectual journey and outlook on life.<sup>17</sup>

Sheikh Tantawi is a Muslim scholar from Egypt who adheres to the Shafi'i school of thought and adheres to al-Asy'ari thought.<sup>18</sup> With great enthusiasm, Sheikh Tantawi wrote a book of interpretation entitled *al-Jawahir*. This book deeply examines various phenomena

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<sup>14</sup> Kalof Linda, Amy Dan, and Thomas Dietz, *Essentials of Social Research* (New York: McGraw-Hill Education (UK), 2008), 94.

<sup>15</sup> Zaki Muhammad Mujahid, *Al-A'lam Asy-Syarqiyah* (Beirut: Dar al-Garbal Islami, 1994), 319.

<sup>16</sup> Departemen Agama RI., *Ensiklopedia Islam di Indonesia* (Jakarta: Direktorat Jenderal Pembinaan Kelembagaan Agama Islam, 1992), 1187.

<sup>17</sup> Abdul Majid Abd as-Salam al-Muhtasim, *Visi Dan Paradigma Tafsir Al-Qur'an Kontemporer*, terj. M. Minzhftir Wabid (Jawa Timur: al-Izzah, 1997), 257.

<sup>18</sup> Wendi Parwanto et al., *Tafsir Abad Pembaharuan* (Pontianak: Ausy Media, 2023), 74.

in the creation of Allah SWT, including the lives of small creatures such as insects, ants, bees, and spiders. Sheikh Tantawi emphasized that many rationalists and intellectuals often ignore these phenomena. Therefore, he enthusiastically tried to prove the truth of the signs of the greatness of Allah SWT which are found in the universe. In addition, he is also known for his dedication in writing and translating various foreign books into Arabic throughout his career as an educator, until he finally retired in 1930.<sup>19</sup>

Tantawi was an influential figure in various fields of writing and essays. In his famous work, *al-Jawahir*, he emphasized the importance of harmony between Islam and modern science. Through this work, Tantawi introduced a new approach to the interpretation of the Qur'an with an innovative method, which later became known as part of the modern interpretation movement. This method received appreciation from many Muslim scholars and thinkers because it was considered capable of connecting revelation with scientific reality.

As an early 20th-century commentator, Tantawi had a deep interest in science. One of the hallmarks of his work was his use of Qur'anic verses as a basis for connecting divine revelation with scientific facts. Although widely praised by his supporters, Tantawi *Jawhari* also faced criticism from those who accused him of distorting the meaning of interpretation and the main purpose of revelation. Nevertheless, his contribution to broadening the horizons of Qur'anic interpretation remains one of the important legacies of modern Islamic thought.<sup>20</sup>

### **C. Background and Method of Interpretation of *Tafsir al-Jawahir***

*Tafsir al-Jawahir* is one of Tantawi al-Jauhari's masterpieces in the field of Qur'anic interpretation which is considered an important milestone in the study of modern interpretation. According to al-

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<sup>19</sup> Armainingsih, "Studi Tafsir Saintifik: *al-Jawahir Fi Tafsir al-Qur'an al-Karim Karya Syaikh Tantawi Jauhari*," *Jurnal At-Tibyan: Jurnal Ilmu Alqur'an Dan Tafsir* 1, no. 1 (2016): 100, <https://doi.org/10.32505/at-tibyan.v1i1.34>.

<sup>20</sup> Majid Daneshgar, *Tantawi Jawhari and the Qur'an: Tafsir and Social Concerns in the Twentieth Century* (New York: Routledge, 2017), 3–4.



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Dhahabi, as quoted by Amin and Ridho, this work is included in the category of contemporary interpretation because it explicitly discusses various issues that are relevant to the development of science and the challenges of the times.<sup>21</sup> This interpretation reflects a new approach that integrates modern science with an understanding of the Qur'an, so that it is able to answer the needs of Muslims in understanding the verses of Kauniyah in the context of science and technology.

The background of writing this interpretation, as explained by al-Dhahabi, is rooted in Tantawi's deep admiration for the beauty, order, and wonder of Allah SWT's creation. He was inspired by the harmony of the universe, from the beauty of the sky decorated with stars to the beauty of the earth with its various ecosystems that support life. Tantawi felt that this phenomenon was real evidence of the greatness of Allah SWT which should be a reflection for humans.<sup>22</sup> However, Tantawi also realized that many intellectuals and scientists at his time actually ignored the signs of the greatness of Allah SWT. They often focused more on scientific analysis that was separate from spiritual values. Tantawi was concerned because only a few people truly understood the relationship between divine revelation and natural phenomena as a means to increase faith.

Through *Tafsir al-Jawahir*, Tantawi tries to open readers' insight into how the verses of the Qur'an explain natural phenomena in harmony with science. He not only discussed natural beauty, but also revealed the scientific values contained in Kauniyah verses, such as the movement of celestial bodies, life cycles and cosmic order. This interpretation is a reminder that the universe is a sign of Allah's greatness, as well as encouraging Muslims to study science as part of their worship and devotion to the Creator.

The method used by Tantawi in writing *Tafsir al-Jawahir* is not explained with certainty. However, according to Fahd bin Sulaiman al-Rumi, he is classified as a mufassir who applies the *tahlili*

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<sup>21</sup> Hulami al-Amin and Abdul Rasyid Ridho, "Keilmiahan Ayat-ayat Penciptaan Manusia: Telaah Penafsiran Tantawi Jawhari dalam Tafsir al-Jawahir," *El-Umdah* 2, no. 2 (December 16, 2019): 136, <https://doi.org/10.20414/elumdah.v2i2.1690>.

<sup>22</sup> Muhammad Husain al-Dhahabi, *Al-Tafsir Wa al-Mufasssirun* (Kairo: Dar al-Hadith, 2005), 442.

method.<sup>23</sup> In this case, Tantawi uses an interpretation method that emphasizes an integrative scientific approach, combining the understanding of the Qur'an with modern science. This shows that Tantawi applies the *tahlili* method by explaining the meaning and intent of the verses of the Qur'an in depth, including analyzing vocabulary, *asbab al-nuzul* (the reason for the revelation of the verses), *munasabah* (the relationship between verses), and the content of the verses according to the order in the mushaf.

This approach is clearly seen in the interpretation of cosmological verses, where Tantawi links natural phenomena such as the movement of celestial bodies and the cycle of life with verses of the Qur'an, showing that scientific knowledge essentially refers to the Qur'an. He emphasized that in addition to being a religious reference, the Qur'an is also a source for knowledge and science.

In addition, Tantawi also applies the thematic method by grouping verses that have similar themes to provide a more structured understanding. In discussing verses about the sky, the moon, and the sun, he not only describes the beauty of the cosmos, but also connects it to the regularity of the solar system, inviting readers to reflect on the wonders of nature as real evidence of the power of Allah SWT.

The scientific approach in this interpretation aims to encourage Muslims to progress with interpretations that include various modern scientific theories, for the progress of Muslims themselves. Thus, *tafsir al-Jawahir* serves as a reminder that the universe is a sign of the greatness of Allah SWT, while also encouraging Muslims to study science as part of their worship and devotion to the Creator.

The approach used by Tantawi in *Tafsir al-Jawahir* is clear evidence that the interpretation of the Qur'an can develop with the times without losing its spiritual essence. This makes his work still relevant today, especially in combining revelation with science as a means of preaching and education.

Tantawi's *al-Jawahir* aims to make Muslims aware of the importance of knowledge by emphasizing that the Qur'an is the truth that can inspire the study of the world. In his commentary, he

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<sup>23</sup> al-Amin and Ridho, "Keilmiah Ayat-ayat Penciptaan Manusia," 138.

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explains the pronunciation of verses, briefly explains the commentary, and completes it with commentary, research, and scientific illustrations such as pictures, tables, and experiments. This commentary adopts the thoughts of Western and Eastern scholars, combines scientific ideas with the teachings of the Qur'an, and includes the views of past and present scholars. *Tafsir al-Jawahir* is known as a scientific commentary that is heavily influenced by the thoughts of Imam al-Ghazali, with a primary focus on the context of the verses. Tantawi also highlights 750 verses of the Qur'an that discuss the wonders of the world as the secrets of science, making the Qur'an a guide for humanity to better understand God Almighty.<sup>24</sup>

In writing the *tafsir al-Jawahir*, Tantawi followed the order of the Uthmani Mushaf. He quoted Surah an-Nahl verse 89 as the introduction before starting the interpretation of Surah al-Fatihah. This is very different from the second volume and so on, which uses Surah an-Nahl verse 44 as the motto of its explanation. When interpreting the surah, Imam Tantawi tried to explain and classify the surah into the *Makkiyah* and *Madaniyah* categories according to the period of the revelation of the Qur'an. However, he did not provide a detailed explanation of the differences in these classifications, the general characteristics of the surah, or the narrations related to the grouping of certain surahs. His main focus was on the *kauniyah* verses in the Qur'an, which were combined with the context in his tafsir. *Tafsir al-Jawahir* is known as a scientific tafsir, although Imam Tantawi's thinking was greatly influenced by the ideas of Imam al-Ghazali.<sup>25</sup>

### D. Scientific Signs in the Qur'an and Surah Ar-Rahman

The Qur'an is a holy book that not only functions as a spiritual and moral guide, but also contains scientific signs that can inspire

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<sup>24</sup> Rahmadi Agus Setiawan, "Corak Penafsiran Muhammad Quraish Shihab dalam Tafsir al-Mishbah," *Mushaf Journal: Jurnal Ilmu Al Quran Dan Hadis* 3, no. 1 (May 20, 2023): 129–150.

<sup>25</sup> Siti Fahimah and Dewi Ayu Lestari, "Al-Jawahir Fi Tafsiril al-Qur'anil Karim Karya Tanthawi Jauhari: Kajian Tafsir Ilmi," *Al Furqan: Jurnal Ilmu Al Quran Dan Tafsir* 6, no. 1 (June 30, 2023): 136–149, <https://doi.org/10.58518/alfurqon.v6i1.1779>.

scientific exploration. The concept of scientific signs in the Qur'an refers to verses that provide clues about natural phenomena, life, and the order of the cosmos, although they do not directly explain scientific concepts explicitly.<sup>26</sup> In this context, these scientific signs are evidence that the Qur'an encourages humans to reflect on and understand the greatness of Allah SWT's creation through the use of reason and science.

In general, scientific signs in the Qur'an refer to various natural phenomena that are explained indirectly or even implied in the text of revelation. Some of these scientific signs can only be fully understood with the development of modern science and technology. The Qur'an, which was revealed more than 14 centuries ago, shows a close relationship between Divine revelation and the laws of nature that humans have discovered in various fields, such as astronomy, physics, biology, and geology.

The scientific hints in the Qur'an do not aim to explain scientific knowledge in detail as in modern science textbooks. On the contrary, the Qur'an often uses expressions that encourage humanity to explore and understand the universe through reason and science. In many verses, Allah SWT invites humans to reflect on natural phenomena and realize that all of His creations are part of a miracle full of wisdom.

The scientific signs in the Qur'an are not detailed scientific explanations, but rather instructions that invite humanity to reflect on the creation of Allah SWT. Through this reflection, humanity is expected to realize that the entire universe is real evidence of His power. The Qur'an mentions various natural phenomena as signs for humans to get to know Allah SWT more closely and strengthen their faith.

One of the scholars who studied the relationship between the Koran and science was Tantawi Jawhari. In his tafsir entitled *al-Jawahir fi Tafsir al-Qur'an al-Karim*, he uses a scientific approach to

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<sup>26</sup> Fazlur Rahman, *Islam and Modernity: Transformation of an Intellectual Tradition* (Chicago: University of Chicago Press, 1982), 30; See also Andi Rosa, *Islam dan Sains dalam Kajian Epistemologi Tafsir Al-Qur'an: Al-Tafsir Al-'Ilmi Al-Kauni* (Serang: Penerbit A-Empat, 2021), 49.

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interpret the verses of the Qur'an, including verses that contain scientific cues. This approach aims to show that Islam is not only compatible with science, but also encourages scientific exploration as a form of worship to Allah SWT.<sup>27</sup>

Surah Ar-Rahman is one of the surahs that stands out with significant scientific hints.<sup>28</sup> One example is the verse about *Maraja al-Barain* (Qs. Ar-Rahman: 19-20), which is often associated with the phenomenon of the meeting of two seas that do not mix.<sup>29</sup> In modern oceanography, this phenomenon is known as a *halocline* or *thermocline*, which is a difference in density between two water masses that prevents mixing.<sup>30</sup>

In addition, Surah Ar-Rahman also emphasizes the concept of balance or *mizan* (QS. Ar-Rahman: 7).<sup>31</sup> This concept refers to the order of the cosmos which can be linked to the laws of physics and ecosystems that maintain the balance of life. According to al-Maraghi, the balance mentioned in this verse teaches humans to maintain harmony in life, both ecologically and socially.<sup>32</sup> The specialness of Surah Ar-Rahman is also reflected in the repetition of the verse "*Fabi ayyi ala'i Rabbikuma tukadhiban,*" which means "Then which of your Lord's favors will you deny?" (QS. Ar-Rahman: 13). According to Sayyid Qutb, this repetition aims to remind people of the blessings of Allah SWT which is abundant but often forgotten or ignored.<sup>33</sup>

Surah Ar-Rahman contains many scientific instructions related to universe phenomena, such as cosmic balance, the process of forming

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<sup>27</sup> Thanthawi al-Jauhari, *Al-Jawahir Fi Tafsir al-Qur'an al-Karim* (Beirut: Dar al-Kutub al-'Ilmiyyah, 2016), 12.

<sup>28</sup> Aprilia Dewi Ardiyanti, "Perspektif al-Qur'an Tentang Sel Saraf dalam Kajian Integrasi Agama dan Sains," *Prosiding Konferensi Integrasi Interkoneksi Islam dan Sains 2* (March 31, 2020): 61–63.

<sup>29</sup> Ahmad Daffa Al Khair, Fira Dewi Azizah, and Nayla Salsabila, "Fenomena Dua Air Laut dan Tawar yang Bertemu tapi Tidak Bersatu," *Islamic Education* 3, no. 1 (May 21, 2024): 155–162.

<sup>30</sup> Harun Yahya, *The Miracles of the Qur'an* (Istanbul: Global Publishing, 2001), 45.

<sup>31</sup> Muh Syamsudin, "Krisis Ekologi Global dalam Perspektif Islam," *Jurnal Sosiologi Reflektif* 11, no. 2 (2017): 83–106, <https://doi.org/10.14421/jsr.v11i2.1353>.

<sup>32</sup> al-Maraghi, *Tafsir Al-Maraghi*, Jilid 13 (Kairo: Maktabah al-Iman, 1996), 46.

<sup>33</sup> Sayyid Qutb, *Fi Zilal Al-Qur'an*, Jilid 6 (Kairo: Dar al-Shuruq, 2006), 340.

the earth and humans, as well as the interaction between water and the sea. These signs not only show the greatness of Allah, but also open up opportunities for humanity to explore deeper knowledge. In this context, Surah Ar-Rahman functions as divine guidance that encourages Muslims to utilize reason and science in order to know Allah better through the universe He created.

Imam Tantawi al-Jauhari in his commentary states that scientific knowledge and divine revelation are not contradictory. On the contrary, science is a way to understand the power of Allah SWT through the study of His creation. By linking scientific signs in the Qur'an with the findings of modern science, al-Jauhari shows that the Qur'an is a book that is in harmony with the progress of science.<sup>34</sup>

Overall, Surah Ar-Rahman not only contains spiritual messages, but also contains scientific signs that are relevant to the development of science. Scientific interpretation of Surah Ar-Rahman, such as that done by Tantawi, is proof that the Qur'an is a book that is able to bridge between faith and reason in understanding the greatness of Allah SWT's creation.<sup>35</sup> This kind of study is very important to strengthen the belief of Muslims that Islam is a religion that supports science as a means to improve the quality of life and faith.

In the context of scientific interpretation, Tantawi's approach shows that the kauniyah verses in the Qur'an are not only relevant at the time of revelation, but also have meanings that can be explored more deeply through modern science. This approach provides a new perspective on how the Qur'an can function as a source of inspiration for the intellectual progress of Muslims. Furthermore, the integration of religion and science carried out by Tantawi shows that the verses of the Qur'an not only provide spiritual guidance, but also encourage scientific exploration to understand natural phenomena. This kind of approach can help build a more harmonious relationship between science and religion.

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<sup>34</sup> Fitriani et al., "Tabiat Manusia dalam al-Qur'an, Perumpamaan Lalat dan Tafsir Surah al-Hajj Ayat 73 Ṭaṇṭāwī Jauharī," *Indonesian Journal of Humanities and Social Sciences* 5, no. 2 (June 18, 2024): 729–748, <https://doi.org/10.33367/ijhass.v5i2.5499>.

<sup>35</sup> Ustadz Rusydie Anwar, *Quranic Happiness* (Yogyakarta: Laksana, 2018), 87.

### E. Analysis of Scientific Signs in Surah Ar-Rahman According to Tantawi Jawhari

Before discussing in more depth the scientific instructions in Surah Ar-Rahman, it is necessary to understand that the Qur'an, as a book of Divine revelation, not only functions as a guide to spiritual life, but also contains scientific instructions that are relevant to the existence of the universe. Scientific cues in the Qur'an invite humanity not only to believe in the revelations revealed, but also to reflect on the creation of Allah SWT and utilize the reason and knowledge He has given.

Surah Ar-Rahman is a surah that is rich in scientific cues, describing how the phenomena of the universe function in extraordinary harmony and balance. This surah emphasizes the close relationship between the universe, the applicable natural laws, and the creation of living creatures as proof of the greatness of Allah SWT. In this case, the Qur'an not only mentions natural phenomena in general, but also provides more in-depth instructions regarding the process and benefits of each of His creations.

Imam Tantawi, in his interpretation of Surah Ar-Rahman, emphasized that divine revelation and science do not contradict each other, but rather complement each other.<sup>36</sup> The Qur'an invites humanity to explore deeper knowledge about the universe as part of an effort to better know Allah SWT. Therefore, Surah Ar-Rahman is very relevant to be analyzed, not only from a theological perspective, but also from a scientific perspective. By understanding the scientific cues contained in its verses, Muslims can strengthen their faith through a deeper understanding of natural phenomena that are orderly and perfectly structured. In Surah Ar-Rahman, there are clear scientific cues regarding the balance of the sky, the benefits of the sun, the benefits of the moon, and the concept of penetrating the earth and the sky, all of which can be analyzed through a modern scientific perspective.

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<sup>36</sup> al-Jauhari, *Al-Jawahir Fi Tafsir al-Qur'an al-Karim*, 4.

## 1. Balance of Heaven and Earth

The sky is one of Allah's miracles that cannot be created by any of His creatures. All the stars and planets that exist, although they do not have free will, are in the order that He has determined. One of the roles of the sky is as a place for the sun, moon, and other stars. Al-Sabouni stated that this highly structured creation of Allah is a manifestation of His capacity that does not depend on anything other than His will. When we look at it without any support or intervention, it becomes clear evidence of the Creator's power.<sup>37</sup>

In this life, everything is created with perfect order and balance. The universe, along with all its components, reflects the signs of the Creator's power that regulates everything according to His decree. From the movement of the planets in the solar system to the balance of the ecosystem on earth, everything runs harmoniously in the order that has been determined. However, as creatures that are entrusted to maintain the earth, humans have a great responsibility to maintain this balance so that there is no damage that can bring disaster, both to themselves and to all living things. As the word of Allah SWT in Surah Ar-Rahman verses 7-9: “*As for the sky, He raised it 'high', and set the balance 'of justice', so that you do not defraud the scales, Weigh with justice, and do not give short measure*”.

In this verse, Allah SWT mentions the creation of balance in the sky, and emphasizes that humans should not exceed the limits of this balance. Imam Tantawi in *Tafsir al-Jawahir* interprets that the balance referred to in this verse refers to the order of the universe which is so orderly and stable, including the relationship between the sky and the earth, the planets that exist, and the laws of nature that govern them.<sup>38</sup> It illustrates the cosmic balance found in modern physics, such as Newton's law of gravity which explains how celestial objects move in their orbits, keeping the solar system stable.

Tantawi emphasized that this phenomenon shows the existence of harmony between the universe and the laws of nature that have

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<sup>37</sup> Mahmud Rifanudin and Muh Faiq Pradana Aris Munandar, “I’jaz ‘Ilmi: Sebuah Isyarat Kauniah dalam Surat Ar Rahman Telaah Tafsir Thantawi Jauhari,” *Al Muhafidz: Jurnal Ilmu Al-Qur’an Dan Tafsir* 1, no. 1 (2021): 73.

<sup>38</sup> al-Jauhari, *Al-Jawahir Fi Tafsir al-Qur’an al-Karim*, Jilid 10, 32–34.



been perfectly arranged by Allah SWT. For example, gravity and momentum play a role in maintaining balance between celestial bodies, while the existence of various other natural forces ensures that the planets do not collide with each other. This harmony does not only apply on a cosmic scale, but is also reflected in smaller systems, such as the ecosystem on earth. These laws enable the sustainability of life, from the circulation of water that maintains the availability of resources to the carbon cycle that supports the survival of living things. All of this shows an interrelated order, where each element has a specific role in maintaining the overall balance. Therefore, humans are reminded to reflect on the signs of the greatness of Allah SWT and maintain this balance in various aspects of life, both in the environment and social relationships, so as not to cause damage that can damage the order that Allah has established.

## **2. Benefits of the Sun**

The sun is a star located at the center of the solar system. The sun consists of hot gases that radiate energy to its surroundings.<sup>39</sup> Therefore, for the planets around it, the sun functions as a source of heat and light. In addition, the sun's gravitational force also plays an important role in preventing celestial objects from falling from space. Technologically, the sun has great potential as an energy source that until now has been relatively little utilized by humans. Solar energy that reaches the earth's surface, when compared to fuel oil (BBM), is equivalent to subsidies of millions of barrels each year. In general, the sun is divided into three main parts: the atmosphere of the sun, the surface of the sun, and the interior of the sun or the core of the sun.<sup>40</sup> All the energy that reaches the earth comes from the atmosphere of the sun, which gets its power from thermonuclear reactions that take place in the sun's core. These reactions produce the incredible energy that is the basis of life on earth.

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<sup>39</sup> Tim Nuansa, *Ensiklopedi Sains Dasar Lebih Dekat dengan Bumi dan Antariksa 1: Alam Semesta* (Bandung: Nuansa Cendekia, 2024), 21.

<sup>40</sup> Syamsuddin et al., *Komunikasi Kesehatan dan Pemberdayaan Masyarakat* (Makassar: Nas Media Pustaka, 2024), 59.

The extraordinary phenomena related to the sun show how great its role is in supporting life on earth and maintaining the balance of the universe. In this case, the Qur'an reminds humans about the regularity of the movement of the sun and the moon as stated in Surah Ar-Rahman verse 5: "*The sun and the moon "travel" with precision*". This verse confirms that the movement of the sun and the moon, which occurs with great precision, is part of Allah's decree that reflects His greatness.

The regularity of this movement not only allows life to continue, but also becomes the basis for the calculation of time used by humans in various aspects of life, such as the preparation of calendars, determining the seasons, and managing agriculture. The sun not only functions as a source of physical energy, but also as a sign of God's power that regulates everything in perfect balance. Therefore, humans are invited to reflect on this phenomenon, be grateful for it, and use it wisely for the common good, without destroying the order that has been established by the Creator.

The Qur'an Surah Ar-Rahman verse 5 describes the great benefits of the sun for life on earth. Imam Tantawi al-Jawhari, in his commentary, explains that the sun not only functions as a light giver, but is also the main source of energy that supports all life on earth.<sup>41</sup> The thermal energy produced by the sun plays an important role in the hydrological cycle, such as the process of water evaporation, which is very important for the survival of plants and other living things. In addition, the sun has a very vital role in the process of photosynthesis, where plants produce oxygen and produce food that is the basis of the chain of life on earth.

In modern physics, we know that solar radiation affects the temperature of the earth and makes life possible. Without the energy from the sun, the earth would be a cold planet and could not support life. Imam Tantawi al-Jawhari realized this and connected the benefits of the sun with the perfection of Allah's creation, which provides all the necessities of life for His creatures through an infinite source of energy.

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<sup>41</sup> al-Jawhari, *Al-Jawahir Fi Tafsir al-Qur'an al-Karim*, Jilid 7, 45.

### 3. Benefits of the Moon

The moon is a natural satellite owned by the Earth and is a celestial body without air and water, with extreme temperature variations. The temperature on the moon's surface can reach 102 degrees Celsius during the day and drop to -157 degrees Celsius at night. The surface of the moon consists of mountains, plains, and depressions. The most common form on the moon's surface is a crater, which astronomers believe was formed by a meteorite impact. However, there is also another theory that states that the craters may have volcanic origins.<sup>42</sup>

The distance between the moon and Earth is precisely regulated, and this phenomenon affects the tides. Tides occur due to the gravitational influence of the moon, although with limited effect. If the moon's distance from Earth decreases, sea levels can rise, cover land, and recede in an unstable pattern. Conversely, if the moon moves further from Earth, tidal waves will not occur properly, which can cause major disruptions to marine ecosystems and other natural functions. This shows how important the balance between the distance between the moon and Earth is in supporting the continuity of life on this planet.

This phenomenon shows how the regularity in the movement of the moon and its influence on the Earth has been designed with incredible precision. In the Qur'an, Allah says in Surah Ar-Rahman verses 5 and 6: "*The sun and the moon (travel) with precision. The stars and the trees bow down 'in submission'*". This verse confirms that the movement of the moon, like the sun, has been arranged in a perfect and balanced system by the Creator.

This regularity not only allows the ebb and flow of sea water to occur, but also influences various other aspects of life, such as the cycle of marine ecosystems, navigation, and the calculation of time used by humans since ancient times. The presence of the moon which is always in its orbit is real evidence of God's greatness in creating cosmic balance. By understanding this phenomenon, humans are invited to reflect on the greatness of God, be grateful for His

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<sup>42</sup> Viyanti, *Planet dan Satelit* (Jakarta: Bumi Aksara, 2023), 57.

blessings, and maintain the balance that He has established. This harmony is a reminder for humans to live in harmony with nature and obey the rules that have been set by the Creator for the sake of the sustainability of life on earth.

The moon is mentioned together with the sun in this verse, emphasizing the existence of these two celestial bodies as interrelated entities in the order of the universe. From a scientific perspective, the moon has several important benefits for the earth, one of which is its influence on ocean tides. This tidal phenomenon occurs because the moon's gravitational force pulls ocean water toward it, creating waves and water movements that are very important for the marine ecosystem.<sup>43</sup>

Imam Tantawi explained that the moon plays a role in maintaining the balance of nature through its influence on the movement of water in the ocean, which is very useful for maintaining the survival of marine creatures and even influencing the global climate. In addition, the moon is also used as a measuring tool in the Hijri calendar system that regulates the social and religious life of Muslims.

#### **4. Travelling through the Earth and the Sky**

Talking about exploration to the core of the Earth, modern knowledge reveals that the diameter of the Earth is around 12,756 km at the equator and around 12,713 km at the poles.<sup>44</sup> However, going through the Earth's core through its diameter is impossible for humans. This is due to the significantly increased pressure and temperature towards the center of the Earth, which is far beyond the capacity of humans and the advanced technology currently available.

Scientifically, it has been proven that the Earth's temperature increases gradually from its surface towards the core, until it reaches a temperature estimated to be equivalent to the temperature of the sun's surface, which is around 6,000 degrees Celsius, according to

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<sup>43</sup> al-Jauhari, *Al-Jawahir Fi Tafsir al-Qur'an al-Karim*, Jilid 7, 50.

<sup>44</sup> Hasria and Sara Septiana, *Geologi Dasar Edisi Pertama* (Yogyakarta: Deepublish, 2024), 30–31.

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some estimates.<sup>45</sup> These extreme conditions make it impossible for humans to reach the Earth's core. If humans want to go through Earth's core, technology is needed that can withstand the extraordinary temperatures and pressures to penetrate the Earth's fundamental layers. Until now, this challenge remains one of the unsolved limitations of scientific exploration.

Traveling through the sky, especially out of the galaxy, requires a means of traveling at the speed of light. This is due to the size of our galaxy, the Milky Way, which has a maximum diameter estimated at about 100,000 light years (equivalent to about 9.5 million km per light year, or about 950 quadrillion km in total). Assuming continuous movement and speeds approaching the speed of light, it would take about 100,000 years to travel across this galaxy.<sup>46</sup> Using our time scale, this challenge shows how great the distances are and how difficult it would be to venture out into the galaxy in the context of current human technology.

This phenomenon reveals the limitations of humans in exploring the depths of the Earth and the vastness of the universe. In the Qur'an, Allah says in Surah Ar-Rahman verse 33: "*O assembly of jinn and humans! If you can penetrate beyond the realms of the heavens and the earth, then do so. 'But' you cannot do that without 'Our' authority.*" This verse confirms that the ability of humans to cross the boundaries of the Earth and the sky is very dependent on the permission and power of Allah SWT, as well as the skills He has bestowed.

This verse provides a very deep picture of human limitations in penetrating the heavens and the earth. Imam Tantawi explains that this verse contains the meaning that even though humans have extraordinary abilities in science and technology, there are limits that cannot be exceeded by human power without the permission of Allah SWT. Tantawi relates this verse to the advancement of human technology that can explore outer space, but remains limited by the laws of nature that Allah SWT created.<sup>47</sup>

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<sup>45</sup> Rohmat Hariyadi, *Jejak Kehidupan di Planet Lain* (Jakarta Selatan: Turos Pustaka, 2013), 93.

<sup>46</sup> Khamim, *Seri Sains Bintang* (Jawa Tengah: Alprin, 2020), 19.

<sup>47</sup> al-Jawhari, *Al-Jawahir Fi Tafsir al-Qur'an al-Karim*, Jilid 12, 200.

In a scientific context, this verse can also be connected to human space travel which has been able to send spacecraft to penetrate the atmosphere and even reach other planets. Although technology continues to develop, humans are still unable to control the entire universe. This limitation reflects that even though humans have the power of reason and advanced technology, they remain under the power of Almighty God, who created natural laws that cannot be violated.

Technological advances have enabled humans to explore space to the Moon and study the internal structure of the Earth to a certain depth. However, physical limitations such as extreme temperatures, high pressure, great distances, and long periods of time remain major obstacles that are difficult to overcome. This verse conveys an important message for humans to realize their limitations before the power of Allah and to continue to reflect on His greatness.

With the spirit of exploration based on gratitude and responsibility, humans are invited to not only focus on achieving scientific knowledge, but also to strengthen faith in the Creator. In addition, humans are reminded to maintain the balance of the universe that has been perfectly arranged by God, so that the achievement of science does not sacrifice the harmony of life.

Referring to the various explanations above, the scientific signs in Surah Ar-Rahman illustrate the greatness of Allah SWT. in creating the universe with extraordinary balance. Imam Tantawi, in his interpretation, links this natural phenomenon with modern science, which teaches Muslims to reflect on the creations of Allah SWT as a means of strengthening faith while exploring knowledge. Phenomena such as the balance of the sky, the benefits of the sun and moon, and the concept of penetrating the earth and sky are scientific signs that show that Divine revelation and science are not separate, but complement each other. All of these creations are real evidence of the greatness of Allah SWT., through the understanding of science; humans can further explore the mechanisms of the universe, know His wisdom, and strengthen their faith in the Creator.

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Tantawi's interpretation of Surah Ar-Rahman emphasizes the importance of cosmic balance and the benefits of heaven and earth for human life. With a deep scientific approach, he explains that the verses of the Qur'an not only have spiritual relevance, but also contain applicable scientific lessons. This interpretation is proof that the Qur'an is a book of guidance that is able to answer the challenges of science while providing guidance for maintaining the balance of nature and life. Tantawi also reminds us that understanding the *kauniyah* signs in the Qur'an can encourage humans to be more grateful, responsible for the environment, and utilize science for the benefit of the community.

### F. Conclusion

The scientific signs in Surah Ar-Rahman, according to Tantawi Jawhari's perspective in *Tafsir al-Jawahir*, show the connection between the verses of the Qur'an and scientific phenomena that exist in the universe. Tantawi emphasizes that verses such as those about the balance of the sky, the movement of the sun and moon, and the benefits of the heavens and the earth, reflect the cosmic order created by Allah with precision. The scientific approach in this interpretation reveals that the Qur'an is not only a book of spiritual guidance, but also a source of scientific inspiration that encourages humans to reflect on Allah's creation. Tantawi connects these phenomena with modern scientific concepts, such as gravity, sea tides, and energy cycles, all of which teach humans to be grateful, maintain the balance of nature, and utilize science responsibly for the benefit of the community. This finding confirms that divine revelation and science complement each other in guiding humans towards a more harmonious life.

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