KALAM, P-ISSN: 0853-9510, E-ISSN: 2540-7759
http://ejournal.radenintan.ac.id/index.php/KALAM
DOI: http://dx.doi.org/10.24042/klm.v16i2.8688
Volume 16, No. 2 (2022), p. 131-156

Islamic Cosmology in Seyyed Hossein Nasr, Zaghloul al-Najjar, and Nidhal Guessoum's Perspective

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Abstract : *The development of modern science not only provides an influence in terms of the development of science and technology scientifically but also gets a response from academicians who tried to integrate religion and science. Specifically in this study, the focus of the discourse is directed at the field of cosmology. When interpreted by Islamic thinkers such as Seyyed Hossein Nasr, Zaghloul Al-Najjar, and Nidhal Guessoum, cosmology has added the term to Islamic cosmology. The archeological and genealogical theories of Michel Foucault used in this study attempt to explore further the course of Islamic cosmological discourse developed by the three figures. Archeological and genealogical theories seek the genealogical thinking of those three figures. So, we could find the pattern in every methodology they used and the people who influenced them. The research results show that Islamic cosmology discourse is one of the efforts to Islamize science that is unprecedented in the development of Islamic civilization.*

Keywords : *Cosmology, Islamic Cosmology, Contemporary Muslim world*

Abstrak : *Perkembangan sains modern tidak hanya memberikan pengaruh dalam hal perkembangan ilmu pengetahuan dan teknologi secara ilmiah, namun juga mendapat respon dari kalangan akademisi yang mencoba mengintegrasikan antara agama dan sains. Secara khusus, dalam penelitian ini fokus diskursus diarahkan pada bidang kosmologi. Kosmologi mendapat penambahan istilah menjadi kosmologi Islam ketika ditafsirkan oleh para pemikir Islam seperti Seyyed Hossein Nasr, Zaghloul Al-Najjar dan Nidhal Guessoum. Teori arkeologi dan geneologi Michel Foucault yang digunakan dalam penelitian ini mencoba menelusuri lebih jauh perjalanan wacana kosmologi Islam*

yang dikembangkan oleh ketiga tokoh tersebut. Teori arkeologi dan genealogi melacak pemikiran genenologi dari ketiga tokoh tersebut. Dengan demikian, dapat ditemukan pola dari setiap metodologi yang digunakan oleh mereka dan juga tokoh-tokoh yang berpengaruh. Hasil penelitian menunjukkan bahwa wacana kosmologi Islam merupakan salah satu upaya islamisasi ilmu pengetahuan yang belum pernah terjadi dalam sejarah perkembangan peradaban Islam.

Kata Kunci : *Kosmologi, Kosmologi Islam, Dunia Islam Kontemporer*

A. Introduction

Cosmology is the oldest scientific field. Before it reached its modern form, cosmology through a long journey that was not only developed by one civilization, including Arab or Muslim civilizations. Classical Muslim civilization noted the many figures who devoted themselves to the study of cosmology. As with science in general, studies of the cosmology of the Islamic world at this time were not formed directly from within the lives of Muslims themselves, but originated from other previous civilizations and the main references most often used are works from Aristoteles and Ptolemy. Abstraction from various other civilizations as well as from the Greek philosophical mindset made the cosmology they developed very multicultural and nuanced without the use of Islamic cosmology.

But different things are displayed in Islamic thought in the current era which views the existence of an Islamic cosmological concept that has even existed since classical Islamic civilization. Before delving further into the whole concept of cosmology by thinkers such as Seyyed Hossein Nasr, Zaghloul Al-Najjar, and Nidhal Guessoum, it will be seen first how the concept of Islamic cosmology is intended by them.

Academic works in the form of theses and dissertations as well as in articles published in national and international journals, many studies have been carried out on two figures, Nidhal Guessoum, and Seyyed Hossein Nasr, but for Zaghloul Al-Najjar, the only research that was obtained is an article written by Ishak Sulaiman. The article discussed Al-Najjar's method in his approach to harmonization of the verses of the Qur'an and Hadith with scientific invention in various branches of science such as biology, astronomy, and physics. Moreover, studies on the three

 DOI://dx.doi.org/10.24042/klm.v16i2.8688

figures at the same time on natural science have not yet been found. Many articles only discuss one or two figure and their thought.

Almost all of the studies of the characters above focus on general discussions of the thoughts that the characters want to convey, such as the concept of man according to Nasr, or the quantum approach of Nidhal Guessoum. While in this paper, we will discuss one object of discussion from the characters, Islamic Cosmology, and how they approach it. Then will be analyzed by Michel Foucault's theories which will dig deeper into their views on Islamic Cosmology. Then we will see academic environmental factors that shape their thinking and also the results of their thoughts that create challenges to the discourse of the Islamic approach to Cosmology in the Arab world.

B. Cosmology In Islamic World

In his book Islamic Sciences, Nasr provides a definition of Islamic cosmology that is directly related to the principles of revelation to metaphysics which contain esoteric messages from the Qur'an and in-depth teachings from the prophet as a complement.[1]

Nasr relied on Islamic cosmology by referring to the principles of revelation and the teachings of the prophet. At the same time, he also presented the works of classical cosmologists such as the cosmos hierarchy and their correspondence with several aspects such as members of the human body, astrological and cosmological signs, and others according to figures such as Ibn Arabi, Sayyid Haydar al-Amuli and Ikhwan al-Shafa.

On the other hand, there is al-Najjar, as one of those who contributed to the discourse of modern science and Islam, al-Najjar's view of the concept of cosmology is important to be elaborated. Even so, it is rather difficult to give a clear description of the conception of Islamic cosmology by al-Najjar because it uses a different method from academics in general that systematically outlines the subject matter. For this reason, the conception of al-Najjar here is the result of abstraction from the author himself who saw the perspective of al-Najjar related to Islamic cosmological discourse.

[1] Seyyed Hossein Nasr, *Islamic Science: an illustrated study*, (England: World of Islam Festival Publishing Company Ltd, 1976), 23

One of the most popular books of al-Najjar and getting more attention is *Al-I'Jaz al-'Ilmiy fi al-Sunnah al-Nabawiyyah* which is translated into Indonesian with the title "Pembuktian Sains dalam Sunna", the book is available in three volumes. In his book, there are 11 themes related to cosmology. Further explanation will be explained in the next discussion, but what can be abstracted from al-Najjar's thinking is that the concept of cosmology in modern science is related to the traditions narrated by various narrators. Thus he assumed that basically, Islam had long before the emergence of modern science could predict the state of the universe and become a legitimate source.

Furthermore, the last conception of Islamic cosmology is raised here, which is stated by Guessoum. The concept of cosmology offered by Guessoum appears at the end of his explanation of Islam and cosmology. He concluded that Islamic cosmology could not limit itself to pseudo-scientific interpretations of sacred texts. Then he added, modern Islamic or theological cosmology which is fully compatible with science is one thing that is very possible to be built by intellectuals whose thinking is open, creative, and flexible in the knowledge that is both theistic and scientific.[2]

The three figures above either implicitly or explicitly always offer a conception of Islamic cosmology based on the proposition derived from the Qur'an and the Sunnah. But the three of them did it with a different approach, the difference in the approach will be studied further by using the archeological and genealogical analysis from Foucault. But before that, the discussion will be directed first to the conception or definition of Islamic cosmology that has been described by the three figures above and will be compared with the conceptions of cosmology in the classical Islamic era with which the comparison will be known within the modern era produced by the three figures.

In general, cosmology has a close relationship with astronomy. Cosmology is a study dealing with things such as the origin of the universe, its existence, development, and extinction, as well as its entirety as its history, and is usually based on astronomy and along with religious and social beliefs.[3]

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[2] Nidhal Guessoum, *Islam dan Sains Modern: bagaimana mempertemukan Islam dan sains modern,* terj. Maufur (Bandung: Mizan, 2014), 371.

[3] Ali Mohammad Bhat, "Philosophical Paradigm of Islamic Cosmology", *Academic Journal: Philosophical Papers and Reviews,* Vol. 7 No. 2 (2016), 13-21.

 DOI://dx.doi.org/10.24042/klm.v16i2.8688

The study of cosmology related to astronomy then shows that the term cosmology or the astronomical footprint with the addition of Islam back in the modern era, a combination of two words cosmology with Islam or astronomy with Islam was done by Western scholars who began to study Islam. These names are used in the study of the history of science or philosophy of the world in which there is a classical Islamic civilization that also contributes. The study can be found in some examples of literature such as Islamic Astronomy and Medieval Spain written by Julio Samso in 1984 and Islamic Astronomy and Geography by David A King in 2012.[4]

Additional Islam behind the subject of knowledge was also often replaced by Western scholars with other terms such as Arabic. As Toby E Huff wrote in his book The Rise of Early Modern Science: Islam, China, and the West, mentions the existence of the Arabic Science and Islamic World. The same thing has happened in books on the history of science such as The History of Science and Technology and Encyclopedia of the History of Arabic Science. George Sarton's books show the same way, writing them in Arabic Science, along with references to other civilizations such as Greek Philosophy, Alexandrian Science, or European Mathematics.

The aforementioned literature shows that the terms Islamic cosmology, Islamic astronomy, and Islamic science are used to refer to the classical Islamic period. Not to show that a principle that is a cosmological/ astronomical or general science developed has a specificity in character or character.

Whereas the term Islamic cosmology formulated by three figures (Nasr, al-Najjar, and Guessoum) has included the term Islamic cosmology as a cosmology having the basic tenets of Islam. This new trend of naming Islamic cosmology later influenced the development of other literature that sought to dig into Islamic principles in the thinking world of Muslim scholars in the classical period, one of which was conducted by William C Chittick in his book Science of the Cosmos, Science of the Soul: The Pertinence of Islamic Cosmology in the Modern World.[5]

For that reason, the next problem is how the direct views of other Muslim scientists in classical times give names or terms about matters

[4] Arwin Juli Rakhmadi Butar-Butar, *Khazanah Astronomi Islam Abad Pertengahan,* (Purwokerto: UM Purwokerto Press, 2018), 44.

[5] William C Chittick, *Science of the Cosmos, Science of the Soul: the Pertinence of Islamic Cosmology in Modern World,* (Oxford: A Oneworld Book, 2007), xi.

related to cosmology as they are often used as references. Cosmology is a term that does not exist when the development of Islamic thought about the origin of the universe, therefore there will not be found classical Muslim work that is literally about cosmology, as well as astronomy, better known as *'Ilm al-Nujum* and *Hai'ah,*[6] except if the works have been translated and interpreted by the later reviewers. Cosmology also always overlaps with astronomical studies in these three terms.

Unlike the field of astronomy which has more clarity in terms of naming, the field of cosmology is an integrated study with the other fields. Contemporary thinkers must sort out things themselves which are related to cosmology in the thinking of classical Islamic figures. As Nasr in his book Islamic Cosmological Doctrines mentioned three prominent figures (Ikhwan al-Shafa, Ibn Sina, and al-Biruni) as the main reference in viewing Islamic cosmological doctrines. Nasr explored the thoughts of the two figures and a group of scientists in his books which have various studies in them.

Even more complicated when meeting the fact that one character does not only master one field with a variety of approaches, such as religious, philosophical, and scientific approaches. In addition, according to Alnoor Dhanani, the seeds of the emergence of cosmology have been present when the thinker Kalam or mutakallimun debated various questions about the universe. At least there are several doctrines related to cosmology, which of these doctrines have their respective adherents and the most popular is the doctrine held by kalam experts (kalam discipline is usually considered equivalent to theology) which is further divided into four groups.[7]

In addition to that, it is also important to note that the study of classical Islamic cosmology developed by Muslim figures is the result of their study of Greek works, one of which is Almagest. Damien Janos in his dissertation on al-Farabi stated that some of al-Farabi's theories did not fit into the traditional Islamic understanding of the universe and God's relationship with his creation. But at the same time Dhanani also stressed

[6] Arwin Juli Rakhmadi Butar-Butar, *Khazanah Astronomi Islam…*, 48

[7] Alnoor Dhanani, *The Physical Theory of Kalam: Atoms, Space, and Void in Basrian Mu'tazili Cosmology,* (Leiden, New York, Koln: E.J Brill, 1994), 5.

 DOI://dx.doi.org/10.24042/klm.v16i2.8688

that although al-Farabi was not interested in the cosmology of the Qur'an, it did not mean that Islamic theology did not influence it.[8]

A search of the term Islamic cosmology shows that the term Islamic cosmology that exists today is formulated by Nasr, al-Najjar, and Guessoum as a new interpretation of the field of study conducted by classical Muslim figures. Islamic cosmology or Islamic astronomy was initially introduced by Western scholars in their work related to the history of science in general, but the use of this term only refers to the period when cosmology or science was developed by one civilization, one of which is Islam.

A further search of the works of classical Muslim scientists shows that the study of cosmology is not an independent field but is integrated with other fields and with an approach in which philosophical, religious, and scientific reasoning is used. The sources referred to by Islamic scientists are also mostly derived from Greek philosophy and one of the figures, al-Farabi even tends to carry out systematic research through the logic of Greek philosophy and some do not fit with cosmology which is considered to be Qur'anic.

Thus, the concept or definition of Islamic cosmology has differences in three periods of time, namely the classical Islamic period, the modern period of study by Western scholars, and finally contemporary Islamic thinkers. The next question is how exactly Nasr, al-Najjar, and Guessoum produced a concept of Islamic cosmology. To analyze it further, it is necessary to extract data through archeological and genealogical analysis.

The concept of Islamic cosmology in the contemporary era which was formulated by Nasr, al-Najjar, and Guessoum as an effort to Islamize branches of science has a close relationship with ideological battles in the past. The previous chapter briefly described the chain of events including colonialism and the 1979 Iranian revolution which triggered the presence of the idea of Islamization. However, it should be remembered that the events that took place in the Middle East were treated differently depending on a particular region that had a set of rules that became its characteristic.

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[8] Damien Janos, *Method, Structure, and the Development in Al-Farabi's Cosmology*, (Leiden, Boston: Brill, 2012), 29.

C. Nasr, al-Najjar, and Guessoum's Islamic Approach to Cosmology

1. Nasr and romanticism of classical cosmology

The previous discussion has explained the initial definition meant by Nasr and two other figures about Islamic cosmology, the next discussion will lead to the elements contained in Nasr's thinking about cosmology and why he got the thought in such a way that formulated an Islamic cosmology.

Nasr was one of the leading Muslim thinkers who directed his focus on the issue of religious and scientific relations, especially the cosmological discourse in the 1960s. The study of the relationship between religion and science, in general, is included in the discussion of the philosophy of science. The wealth of the philosophical tradition of Nasr's home country, Iran, became a supporting factor for the discourse[9], which in turn led to Nasr's thoughts on cosmology

Cosmology in Nasr's view can be seen from two sides, as a paradigm of reality and as a scientific branch that clearly shows the cosmology of Islam in the classical period. The two Nasr views are like two currencies that can not be separated in the way Nasr views cosmology.

Islamic cosmology as a paradigm against reality is based on Nasr's thoughts on Ibn Arabi.[10] The cosmos in the material world is a final manifestation of a hierarchical God. Ibn Arabi's concept of these manifestations is *Hahut, Lahut, Jabarut, Malakut, and Mulk.*

Nasr's interest in the Sufi world of Ibn Arabi made him formulate a view of the reality of the world which has a connection with the metaphysical world. Nasr's efforts were classified as a new perspective when he took Ibn Arabi's thoughts as a basic conception. Even so, the thought of Ibn Arabi was not new to Nasr because in his work The Three Muslim Sages, Nasr generally explained everything about him.

Next, Nasr also developed the term Islamic cosmology in the context of science. Traditional Islamic cosmological civilization has a close relationship with revelation. This is in line with his statement:

> In classical Islamic civilization, it (cosmology) is attractive to natural scientists, geographers, and historians as well as

[9] Husein Heriyanto, *Revolusi Saintifik Iran,* (Jakarta: UI Press, 2013), 206.

[10] Ach Maimun, *Seyyed Hossein Nasr: pergulatan sains dan spiritualitas menuju paradigma kosmologi alternatif,* (Yogyakarta: IRCiSoD, 2015), 128.

 DOI://dx.doi.org/10.24042/klm.v16i2.8688

> theologians, philosophers, and gnostics. All cosmological studies, which are technically considered cosmological sciences, are within the framework of Islamic cosmology to draw on fundamental principles derived from the Qur'an.[11]

Nasr's definition of Islamic cosmology states that scholars who uphold the cosmological principles derived from the Qur'an are inaccurate when looking at Nasr's reference figures (Ibn Sina, al-Biruni, and the Brotherhood of al-Shafa). People from different disciplines focus on science, studying cosmology with a scientific approach. Such is the thought of the Al-Shafa Brotherhood that not only influenced Islam but also other beliefs.[12] Even al-Biruni openly criticized the Islamist view of classical times. He was disappointed with Muslim writers who studied India subjectively and were more judgmental.[13]

For Nasr, starting with the third thought of the figure, Islamic cosmology will flourish, the selection of the third figure as a figure introducing Islamic cosmology as their thinking will be a source of reference to Islamic cosmology in the future, apart from the cosmology in their concept also representing the thought in his day.[14]

In the book Islamic Cosmological Doctrine, Nasr describes the early days of Islam in the face of the evolving science and philosophy of science and its origins. The attitude of Islam in accepting these ideas was quite open, and even in some of the reigns of the Abijah era, the knowledge that originated outside of Islam was widely studied, as seen in many commentary books on the works of European philosophers, such as Aristotle, Pythagoras. The form of government support for the advancement of knowledge is also seen in the magnificent temple of al-hikmah as a center of study and translation of works by thinkers from various regions. Currently, Islam absorbs this knowledge and integrates it with Islamic teaching.

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[11] Seyyed Hossein Nasr, *Science and Civilization in Islam,* (Chicago: ABC International Group, 2001),92.

[12] Ian Richard Netton, *Muslim Neoplatonist: an Introduction to the Thought of the Brethern of Purity (Ikhwan Al-Safa),* (Edinburgh: Edinburgh University Press, 1991), 78

[13] M. Kamiar, *Brilliant Biruni: A Life Story of Abu Rayhan Mohammad Ibn Ahmad,* (United States of America: Scarecrow Press, 2009), 169.

[14] Seyyed Hossein Nasr, *An Introduction to Islamic Cosmological doctrines,* (Great Britain: Thames and Hudson, 1978),

The Islamic world's fascination with such external ideas continued until the 4th and 5th centuries, this time with mathematics and natural sciences as the central focus or the most studied field. The method of application in the study of this field of knowledge also influences the pattern or rules as applied by the source of the knowledge. It is during these times that many of the great thinkers of the Islamic world have been born, such as the Brotherhood of Shafa, al-Biruni, and Ibn Sina, whose thinking encompasses all important perspectives of cosmological science in Islam.

Nasr's view of cosmology always refers to Islamic thinkers in the Middle Ages, as mentioned earlier, namely Ibn Arabi, Ikhwan al-Shafa, Ibn Sina, and al-Biruni. Some of Nasr's chosen personalities have one line in common, namely Ibn Arabi who was influenced by Ibn Sina.[15] Both are classified as Neoplatonists who get a strong influence from the father of Neoplatonists in Islam, al-Farabi.

This line is seen in Ibn Arabi's thoughts about the five manifestations above and the thought of emanation by Ibn Sina, both of which are inherited from the emanation of al-Farabi's thought. The idea of cosmology that Nasr was focused on was the idea of the creation of the universe that the two figures developed in his time.

The questions about the origin of the universe are the realm of the world of philosophy and kalam in medieval times, both fields require the existence of logical reasoning to answer it. For this reason, medieval Muslim philosophers who were familiar with the method of thinking from Greek philosophy helped elaborate on the problem and one branch of Greek philosophy that received more attention was neo-platonic.

One of the neo-platonic ideas used as a reference is an attempt to bridge the gap between the material world on the one hand and the immaterial world where the "one" or main principle, the gap is filled with a long process that occurs diffusely to produce what is called intellect, soul and finally the natural world.[16]

In addition to figures such as Ibn Sina and Ibn Arabi, a group of thinkers who are members of the Ikhwan al-Shafa also get the influence of thinking about emanation, but in the Ikhwan al-Shafa's version, there are

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[15] Seyyed Hossein Nasr, *Three Muslim Sages: Avicenna – Suhrawardi – Ibn 'Arabi* (New York: Caravan Book, 1997), 101.

[16] Majid Fakhry, *Al-Farabi: Founder of Islamic Neoplatonism: his life, works and influence*, (Oxford: Oneworld, 2002), 78.

 DOI://dx.doi.org/10.24042/klm.v16i2.8688

some additions. The Ikhwan al-Shafa categorized the process of emanation in two ways, the creation at once and the creation in stages. Creation as well as the creation of the spiritual realm such as the active mind, universal soul, first matter, and active mind, whereas gradual creation occurs in the physical or material realms such as planets from which elements such as air, fire, water, etc. so. After that emerged plants and animals, and the process continues evolutionarily.[17]

2. Al-Najjar and *i'jaz al-Qur'an* as new trends

The concept of al-Najjar's thought differs greatly from Nasr's philosophical nuance through the exploration of the ideas of classical Islamic figures so that the concept of Islamic cosmology is found. Besides that al-Najjar also did not explicitly explain the concrete form of Islamic cosmology, his thoughts on this matter could only be known through the abstraction of the themes of modern science and its relationship with the proposition he took.

Further study of al-Najjar's thoughts can be traced through figures who have methods of thinking similar to al-Najjar such as Maurice Buccaille, one of which can be seen in his poems in France,[18] and Harun Yahya who identify scientific facts that exist in the Qur'an 'an.[19] This reliance on similar thinking is due to al-Najjar not using the concept of thought of previous figures as a method of analytic thinking but through his own speculative reasoning.

Al-Najjar's thoughts related to cosmology are found in his book *Al-I'Jaz al-'Ilmiy fi al-Sunnah al-Nabawiyah al-Juz'u al-Awwal* translated into Indonesian under the title "Proof of Science in the Sunna", the book available in three volumes. In total, the three volumes of the book contain 73 topics divided into 28 topics in the first book, 25 topics in the second book, and 20 topics in the third book. From the results of sorting topics, 11 topics can be categorized in the major cosmological themes contained in books in volumes 1 and 2. Following these 11 themes:

a. Stars in the sky

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[17] Fuad Mahbub Siraj, "Kosmologi dalam Tinjauan Failasuf Islam", *Jurnal Ilmu Ushuluddin*, Vol. 2 No.2 (2014), 109-124.

[18] Maurice Bucaille, *The Qur'an and Modern Science, ed. A. A. A. B Philips*, (UAE: Islamic Information Center Dubai, 1995)

[19] Harun Yahya, *Signs From the Qur'an*, trans, Julia Konmaz (New Delhi: Goodword Books, 2006), 8.

b. Eclipse
c. Rain as a blessing from Allah
d. The folding sky
e. Cleavage of the moon
f. Mountain as an earth pillar
g. Sunrise from west
h. Seven layers of the earth
i. The round earth
j. The process of formation of the earth
k. The Rainfall

Al-Najjar's presentation on each topic has the same pattern or steps:

a. Citing one hadith, on several topics, al-Najjar also featured one of these hadiths from various histories
b. Provide a review of the hadith by displaying scientific data or scientific theories related to the topic
c. Linking the hadith cited earlier with the scientific findings explained earlier as an argument that what was discovered by scientists in the 20th century had already existed in the hadith.
d. Provides a summary of the truth of the prophetic message directly related to the revelation of God.

One example of the topic raised by al-Najjar is the celestial coating.[20] The steps he uses in explaining, as described above, he directly quotes the hadith and on this topic, he quotes the hadith narrated by a Muslim priest in the Book of *Shifat al-Qiyamah wa al-Jannah wa an-Nar*, from Abu Bakar bin Abu Syaibah: We have hadith from Abu Usamah, from Umar bin Hamzah, from Salim bin Abdullah: I have heard from Abdullah bin Umar, he said: Allah's Messenger (may peace be upon him) said (translated):

On the Day of Resurrection Allah will fold the heavens, and then He will take the heavens with His right hand and say: "I am the king, where are the proud?" where are the arrogant ones? Then he folded the earth in

[20] Zaghloul Al-Najjar, *Pembuktian Sains dalam Sunnah,* trans. A. Zidni Ilham Faylasufa (Jakarta: Amzah, 2007), 189.

 DOI://dx.doi.org/10.24042/klm.v16i2.8688

his left hand, saying: "I am the king, where are the proud?" Where are the arrogant people?

Then al-Najjar still displays the same hadith from various narrators such as Abu Dawud and Ibn Majah. In the next step, he displays a review of the hadith and focuses on the word "folding of the sky" to be elaborated further with scientific theories about the expansion of the universe or a state when galaxies in the universe move away from each other at the speed of light.

Based on this theory, scientists also found that in the universe there is a meeting of all kinds of matter, energy, place, and time in a single point with a small size that contains a large energy period. Thus, the folding of the sky as meant by the previous hadith is relevant to scientific findings. Until finally al-Najjar concluded that the hadith of the Prophet 1400 years ago could only be imagined in the present. Al-Najjar added here the importance of cosmological cues in the Qur'an and Sunnah in the era of scientific progress and the Qur'an.

The method used by al-Najjar in studying hadith through modern science is a new phenomenon. In his book, Nidhal Guessoum examines several things related to the approach taken by al-Najjar, which he then groups to the I'jaz al-Qur'an approach.[21] The grouping he did because the approach made by al-Najjar was not the only one, but had become a trend in connecting science and Islam.

Guessoum mentioned similar figures such as Yusuf al-Hajj Ahmad, Mansour Hassab Elnaby, Kamel Ben Salem, Malek Bennabi, Marwan al-Taftanazi, and the most famous Maurice Buccaille. This approach was reviewed by Guessoum by mentioning the defects contained in their writings. But here will not be discussed about deficiencies exist in the approach because the aim is to see archeological thinking using approaches such as al-Najjar.

Al-Najjar's approach is close to the method of interpretation, but the interpretation he uses is through findings in modern science. The distinctive feature of this approach is not to focus only on one topic and then conduct an in-depth study, for that one book often contains various

[21] See Stefano Bigliardi, *Strange Case of Dr. Bucaille: Notes for a Re-Examination* (Oxford: The Muslim World, 2012).

topics such as geography, biology, geology, astronomy, and other sciences. so the topic of cosmology is only a small part of the various discussions.

There are several forms of scientific interpretation of the Qur'an and Hadith. One such distribution model, according to al-Najjar, is distinguished in two forms, the scientific I'jaz, and the scientific Interpretation. I'jaz ilmi is evidence that shows that the Qur'an precedes modern science in explaining facts such as the cosmos, while *tafsir ilmi* is a human effort to have a good understanding of the Qur'anic verses.[22]

Differentiation between the two forms of interpretation that uses scientific findings makes the background of the emergence of the two that are distinguished. The appearance of scientific interpretation is related to the book *The Unveiling of the Luminous Secrets of the Qur'an* written by a doctor in Egypt, Muhammad Ibn Ahmad al-Iskandarani. The book, published in 1880, discusses the universe, planets, animals, plants, and metals.[23]

As for I'jaz ilm, the claim of the followers of this theory states that the approach that they used is in line with what is done by Salaf scholars like al-Suyuti and al-Ghazali, but an article later opposes that argument. Most other writers argue that the originator of this approach was Maurice Buccaille.[24]

In addition to the two categories of scientific interpretation mentioned by al-Najjar above, other recent research which is more academic in nature is related to the forms of interpretation approach written by Hussein Abdul-Raof. He categorized there are four typologies of interpretation, including rational exegesis (interpretation of *bil ra'yi*), linguistic inimitability of the Qur'an (*I'jaz al-Qur'an*), Scientific interpretation (*al-Ta'wil al-Ilmi*), and thematic (*Mawdhu'i*). Raof defines scientific interpretation as a modern approach, a thematic interpretation that is selective in nature (only in the verses relating to scientific findings),

[22] Nidhal Guessoum, "Islam dan Sains Modern..., 260.

[23] Khalid Yahya Abu Milha, *Scientific Issues in the Holy Qur'an: the Meaning and Translation of Verses Relating to the Creation of the Universe*, (Doctoral Thesis: Durham University, 2003), 36.

[24] Nidhal Guessoum, "Islam dan Sains Modern..., 261.

 DOI://dx.doi.org/10.24042/klm.v16i2.8688

and sees that the Qur'an and hadith have a harmonious relationship with modern science.[25]

Scholars around I'jaz Qur'an established the "International Commission for Scientific Miracles of the Qur'an and Sunnah" in Saudi Arabia by the Muslim League, by setting six goals. The Commission successfully held an international conference that ran for 13 years from 1987-2000 in various countries.[26] The conference continued until 2007, Al-Najjar became the keynote speaker at the opening of the conference which was held in Abu Dhabi.

Until the latest data was found, the conference was still held until 2011 by bringing up 33 research titles. This international commission also publishes history books and guidelines on the *I'jaz Qur'an* and *Sunnah*. In this book, they also try to distinguish between the interpretation of science and *i'Jaz ilm*, as conveyed by al-Najjar, in addition, according to them *i'jaz ilm* is limited to finding a determination between Islamic textual truth and truth in nature, and also study *I'jaz ilm* has been accepted by scholars of interpretation.[27]

3. Guessoum and *Natural Theology*

Guessoum's view of Islamic cosmology is summarized in two criteria[28]:

a. Formulate several new theologies that can be consistent with modern science even though modern science is not in line with literal beliefs and sacred texts.
b. Building a cosmology that is not too materialistic to allow the discovery of some meaning and spirit in the universe and its existence.

One chapter on Islamic cosmology devoted by Guessoum is a summary of the thoughts of scientists and contemporary philosophers such as Nasr, Sardar, Mehdi Golshani, Ismail Raji Al-Faruqi, and others.

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[25] Hussein Abdul Raof, *Theological Approaches to Qur'anic Exegesis: a practical comparative-contrastive analysis*, (London & New York: Routledge, 2012), 138.

[26] Muzaffar Iqbal, *Science and Islam*, (London: Greenwood Press, 2007), 163.

[27] Abdullah Ibn Abd al-Azis al-Muslih, "History and Guidelines: Scientific Miracles in the Qur'an and Sunnah", accessed from https://islamhouse.com/en/category/729028/showall/showall/1

[28] Nidhal Guessoum, *Islam dan Sains Modern...*, 370.

Furthermore, he explained the scientific cosmology today and also the development of Western thought about cosmology which has theistic nuance. In the end, he proposed a synthesis that should have been used to shape Islamic cosmology.

Guessoum, who published his book in 2011, tries to portray the state of Islamic and scientific discourse in contemporary Muslim minds. In the process of observation, Guessoum encountered a variety of irregularities committed by those who formulated their thoughts seriously about this discourse.

If Nasr's mind can be pulled back and it can be found how the preparation of the method and the Al-Najjar can be seen in the development of its I'jaz method. So in Guessoum's thought which responds to the developing discourse, which can be done to examine the back of his thinking can only be done by looking at things that are the basis of his method which in this case can be seen from two principles, the state of the discourse of religious and scientific relations in the era Guessoum's intended contemporary and second openness to modern western thought, both from scientific findings and western philosophy in combining physical and metaphysical elements.

Specifically in Guessoum's thoughts on cosmology, he advocated a new theological formula. This suggestion is none other than the state of old theology that has not been able to fulfill or balance itself with the findings of modern science. Based on this, Guessoum often explained in advance the methods used by thinkers in raising this theme and pointing out their respective weaknesses.

It can be understood how Guessoum's anxiety over the absence of general standards regarding the discourse of religious and scientific relations, because for decades this discourse has run, he has not produced a tangible product that makes the Islamic world can adapt well to the outside world.

The history of the birth of the discourse of religious and scientific relations with various approaches comes at almost the same time because the main trigger is the same, modern science. The figures present responded to modern science through their scientific backgrounds and philosophies. Among the many figures who try to approach the discourse, some figures act as leaders of each approach. Some of these figures also tried to give a classification to them.

 DOI://dx.doi.org/10.24042/klm.v16i2.8688

Stenberg in his book classifies this approach through the thinking of four figures, Ziauddin Sardar (1951) with Ijmali, Seyyed Hossein Nasr (1933), Ismail Raji al-Faruqi (1921-1986) with IIIT, and Maurice Buccaille (1920-1998). The background to the discourse between science and Islam for Stenberg was seen when Ernest Renan argued that Islam and Arabic were instinctively hostile to science. Muslim scholars such as Jamaludin al-Afghani with his Islah movement and his successor Muhammad Abduh responded to the accusation and called on Muslims to rise.

In the 1900s the colonial era began to take place in Middle Eastern countries which later triggered the birth of Islamic movements such as the Muslim Brotherhood. These Islamic movements carry Islamic terms in carrying out propaganda to legitimize their ideology. In the 1950-1960 era, the push to develop ethnicity and Arabic was intensified through the holding of a conference in Rabat, Morocco to reach an agreement on the Arabization of terminology in modern science.[29]

The discourse then progresses with the figures mentioned above, although they both study the discourse of Islamization of science, they have their emphasis on several aspects. Specifically in Guessoum's thoughts on cosmology, he directed it more toward thinking with an approach patterned by Nasr and al-Najjar.

The approach taken by Nasr is classified as Guessoum in the traditionalist or Neo-Sufi approach which still holds tightly to the tradition of classical Muslim scientific thought and is inclined towards philosophical metaphysics. Whereas al-Najjar with its I'jaz method is judged to make a lot of methodological mistakes in interpreting and applying scientific findings that they often claim as a final scientific fact.

Based on the view of Islamic cosmology that he studied, he finally had the view that a new theological order was needed following modern science. Through this idea, Guessoum tried to emphasize that the old discourse with the traditionalist approach which took many ideas from classical thinkers should be improved because science and philosophy have experienced development.[30] At the same time, Guessoum also stressed the

[29] Leif Stenberg, *The Islamization of Science: four Muslim positions developing an Islamic modernity*, (Swedia: Lund University, 1996), 39.

[30] Nidhal Guessoum, "Islam, Science, Methodological Naturalism, Divine Action, and Miracles", in Hasan, U and Osama, A. (Eds) *Islam & Science: Muslim Response to Science's Big Questions*, (Muslim World Scientific Initiative, 2016), 67.

need to use the correct method when trying to harmonize it with Islamic theological doctrine, not by limiting the apparent scientific disclaimer of sacred texts.[31]

The second program, Guessoum was built on Islamic Cosmology from a not materialistic point of view. In this regard, Guessoum goes beyond the thinking of philosophers and Muslim scientists who still depend on classical thought. He provides a space for Muslims to also look at Western scientific studies which are philosophical in nature, not materialistic.

Guessoum did not hesitate to quote the ideas of Western cosmologists like Joel Primack and Nancy Ellen Abrams, Kim Coble. They are not just cosmologists in the sense of modern science who are dealing with numbers but also express their ideas by considering social aspects.

Discourse on the harmonization of social and cultural values with cosmology in the West began to develop, this development coincided with a cosmology that was studied mathematically as presented by Guessoum regarding the estimated age of the earth and the theory of early creation.

Guessoum's approach to cosmology is exactly like one of the concepts of integration classified by Ian G Barbour, natural theology. According to Barbour, this concept has long existed as formulated by Thomas Aquinas. Aquinas argues that some of God's attributes can only be known through revelation in the scriptures, but God's existence itself can be known only by reason.[32]

The main similarity between Guessoum's ideas and the concept of natural theology is science that is read through the interpretation of religion to fill the metaphysical side of science. This Islamic or religious interpretation can change its nature according to modern scientific concepts or theories.

D. Islamic Approach to Cosmology

In the discussion on the historical review of the term cosmology in the Islamic world and the Archeology of Nasr's thought, al-Najjar and

[31] Nidhal Guessoum, *Islam dan Sains Modern…*, 370.

[32] Ian G. Barbour, *Juru Bicara Tuhan: antara Sains dan Agama* trans. E.R Muhammad (Bandung: Mizan, 2002), 81.

 DOI://dx.doi.org/10.24042/klm.v16i2.8688

Guessoum showed that the three of them shared the view of cosmological conceptions with Islamic nuances with their respective approaches.

Then, what is the exact form of Islamic cosmological discourse amid modern Islamic society? Whether the conception existed during the time of classical Islam as elaborated by Nasr, or did it already exist in Islamic arguments as revealed by al-Najjar, or was even actually an Islamic cosmological concept reconstructed by Guessoum.

The three figures above have shown their ability to mix a concept of cosmology which is then integrated with Islamic doctrine into a discourse of Islamic cosmology. Packaging cosmology into an Islamic perspective by the three figures is an effort that can be understood as normalization.

The normalization conducted by Nasr was seen when digging back into the thoughts of the figures he referred to in the concept of Islamic cosmology, the three figures, such as Ikwan al-Safa, al-Biruni, and Ibn Sina. based on their original works, it is true that they are Muslims who study cosmology and in some parts incorporate Islamic elements such as the concept of monotheism which replaces the term Supreme Being in the Neoplatonic idea of being.

But beyond that, most of the discussions in their works can be aligned with modern scientific findings such as those now conducting analyses with precise calculations and with objective observations, such as Rasa'il by Ikhwan Al-Shafa who studies cosmology through numbers and metaphysical interpretations of arithmetic and geometry[33] and when referring directly to the English translation of the original work, the Brotherhood does not show religious tendencies.[34]

In addition, Netton also showed that the thought of the Ikhwan Al-Shafa also gained influence from other religions and beliefs at that time.[35] The thought of Al-Biruni also shows the same thing, even in one of his works, Al-Biruni was disappointed with Islamic writers who researched about India subjectively and were more judgmental.[36]

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[33] Seyyed Hossein Nasr, *An Introduction to Islamic Cosmological doctrines* (Great Britain: Thames and Hudson, 1978), 37.

[34] Ikhwan Al-Safa, *Dispute between Man and the Animal,* trans. J. Platts, (London: W. H Allen, 1869), 34.

[35] Ian Richard Netton, *Muslim Neoplatonist,* 78

[36] M. Kamiar, *Brilliant Biruni…*, 169.

Based on a retrieval of the thoughts of the figures who became Nasr's foundation, they showed more objectivity than showing Islam as Nasr showed, only because they were oriented to the philosophy of Aristotle and Neoplatonists, so he used a lot of reasoning.

In the case of al-Najjar's thinking, normalization efforts are more clearly visible, he uses scientific findings about cosmological events such as explanations of stars, solar and lunar eclipses, rain, folding of the sky, division of the moon, rising of the sun and moon. The realm that was supposed to be in the realm of pure natural science then he shifted it into a part in the explanation of the hadith. Even in modern cosmology that Al-Najjar refers to, there has been a formula that confirms that its realm is a purely scientific study, as NASA asserted, cosmology is a scientific study of the universe on a large scale as a whole, which uses scientific methods to understand its origin, evolution, and the great destiny of the entire universe.[37]

As for Guessoum, he did not normalize as Nasr and al-Najjar did, but he showed his fidelity to the concept of theistic cosmology which was certainly Islamic. He openly said that the ideal concept of Islamic cosmology according to him is a concept that developed in the medieval era of classical Islam with Ibn Rushd as the main role model.

Then after his conclusions regarding Islamic cosmology, Guessoum also said that an alternative that could be taken as a model of Islamic cosmology was the neo-Sufi concept.[38] The choice of conception in the neo-Sufi viewpoint is due to the view that is considered to be the most adequate in answering the problems faced by today's cosmology which is dry about metaphysical principles.

Guessoum is indeed unlike previous figures who took the path of holding to a clear conception by holding on to one definite view, he had far more moderate views than his predecessor, this was seen when he also referred to many contemporary Western works that were mostly critical of science modern, like Primack and Abrams's work. The pattern that combines the conception of classical Islamic cosmology, especially Ibn

[37] NASA: Wilkinson Microwave Anisotropy Probe, "Cosmology: The Study of the Universe", accessed from https://map.gsfc.nasa.gov/cosmology/cosmology.html

[38] Nidhal Guessoum, *Islam dan Sains Modern…*, 370.

 DOI://dx.doi.org/10.24042/klm.v16i2.8688

Rushd, and opening up to the Western view, is an affirmation of his role in the discourse of the Islamization of science.

Nasr and al-Najjar made a normalization effort that had their characteristics with their approach based on different educational backgrounds and environmental thinking paradigms, besides that the development of discourses was widened as well as a gap for each of them to participate in shaping this discourse and bringing it into the direction they think is ideal.

In addition, the understanding of each character of the discourse is also caused by historical events that have been running in the Muslim world in the Middle East. Nasr who tried to revive ideas such as the Ikhwan al-Shafa, al-Biruni, and Ibn Sina can be understood as his efforts to show that Islam has its peculiarities when developing cosmology, which through its specificity Nasr wants to resist the dominance of modern science which, according to Nasr has strayed far from the principles of science as in classical Islamic times.

While al-Najjar, with the same enthusiasm as shown by Nasr, tried to explore the propositions in Islam and juxtapose them with modern science, then at the end he explained that Islam knew the scientific findings first.

Finally, Guessoum as a contemporary figure was present to conduct introspection in the discourse of Islamization that has been rolling for decades. He tried to realize the shortcomings that exist when Muslims discuss the integration between Islam and science.

Among the three, there is no attempt here to find which ideal concept. But from the thought of the three that can be taken as a lot of learning, the extent of the efforts of Islamic thinkers in developing this concept. The normalization efforts undertaken by Nasr and al-Najjar as well as criticism from Guessoum also showed their power in holding control of the revolving discourse.

Another important thing that began to be seen when studying the three figures is what ideas or patterns should be done for the future in the Muslim world. It cannot be denied that they have a tendency towards certain thoughts such as Nasr with the dominance of philosophical Sufism and Shi'ite thoughts, but as Michel Foucault said that the distinction between pure knowledge (free of power) and ideological knowledge (which is biased for power) is only an illusion because knowledge and

power are elected in a single unity, especially when the knowledge or knowledge is in the social world.

The idea of Islamization was also widely developed by other figures who were not only in theoretical discussions but had been implemented in practical studies like those of Ismail R Al-Faruqi, but the discussion in this section only discussed theoretical problems in cosmology.

The discussion which pursued one of these major themes, has given a new perspective according to the author's abstraction, the efforts made by Nasr by always referring to classical Islamic cosmology do look ideal because Islam experiences a period of development of its thinking. But keep in mind that the development of their thinking is not the result of a single interpretation of Islam to the universe, but there is a Greek epistemology and wise advice from other religions and beliefs that also influence his thinking and the efforts made by these thinkers are the latest findings of Islamic thinkers in his day concerning the qibla of knowledge at that time namely Aristotle and Plato.

If you want to align it with the present, then the mecca of knowledge is modern science developed in the West. These classical Islamic thinkers for Nasr have also succeeded in combining Islamic conceptions with Greek logic. But as long as they trace their thoughts, it was found that this was not in the form of integration which showed a perfect integration, but rather a conclusion from their research and also their reliance on the conception of God in creation.

The thought of these classical Muslim figures who included these elements was also considered as a scientific method or paradigm at that time that did not separate belief from the principles of scientific work, but even so, Islamic thinkers were not people who arbitrarily combined them, so that it could be said to be the objectivity of their thoughts equivalent to the way modern science. This might be a point of emphasis for contemporary Muslim thinkers, Muslim identities who have a passion and serious effort in developing science without sorting out the source as long as it does not conflict with scientific principles.

Al-Najjar with its simplistic interpretation by using scientific findings and combining them with hadith can be a weapon that turns around to attack him. As we know that scientific inventions are always developed, reconstructed, and revised. The theoretical concepts of nature found in the 80s are different from those in the 90s. If al-Najjar's

 DOI://dx.doi.org/10.24042/klm.v16i2.8688

methodology interpretation continued to be used it will look inconsistent with the meaning of the hadith or verse and Islamization which is considered to show compatibility with modern science. At last, his methodology will depend only on scientific invention.

As for Guessoum's critique of a cavity that has not been filled with modern cosmology with a positivistic nuance and filled with Islamic thought that can bridge between the physical and metaphysical worlds to form a holistic view of the universe, it still has to face a long way to be able to represent the entire school and Islamic groups so that formed the concept of cosmology that is central. His idea of bringing back Ibn Rushd's thoughts also requires a deep study because most of his thoughts were absorbed by Aristotle.

The term Islam in Islamic cosmology must be seriously considered. So, it does not only become a fully adopted field of modern science which is extracted with a particular Islamic thought or takes full science in the Islamic classical period. Then, to achieve a degree that is equivalent to modern cosmology with its mature scientific base as it is now, renewal must be carried out thoroughly from the root of scientific epistemology.

E. Concluding

Archaeological Search of the term Islamic cosmology shows that the term addition of the new Islamic word received philosophical interpretation in the 20th century. Previously there had been Western literature that mention the relics of medieval Islamic civilization by giving Islamic identity the same as the term Greek philosophy, but this is only an attempt to show information about the place where the scientific branch develops does not mean that there are certain characteristics that are given by the description of the place. Islamic cosmology addressed by the three scholars has different points of view. Nasr saw Islamic cosmology by referring to the thought of classical Islamic figures such as Ibn Sina, al-Biruni, and the Ikhwan al-Shafa. Al-Najjar translates Islamic cosmology through the translation of modern cosmology which he associates with the hadith which according to him there is one relevance. Guessoum proposed the prerequisites for the formation of Islamic cosmology. All three have different thoughts based on various political events in the Islamic world such as colonialism and the Iranian revolution in 1979. In addition, the environmental background of the three figures also had an influence on

their Islamization efforts, Nasr with his late Iranian Shi'a was always surrounded by the atmosphere of philosophical studies, al-Najjar academics who flourished in Saudi Arabia who always referred to Islamic propositions directly, and Guessoum as contemporary academics who were open to Western thoughts. Thus, the Islamization of cosmology which was formulized by the three figures are the response to their thoughts on cosmology ascribed to the West, in conditions that experienced a period of colonialism, Islamic cosmology was present as an effort to show that Islamic identity did not fully decline. [.]

References

al-Muslih, Abdullah Ibn Abd al-Azis, "History and Guidelines: Scientific Miracles in the Qur'an and Sunnah", accessed from https://islamhouse.com/en/category/729028/showall/showall/1

al-Najjar, Zaghloul, *Pembuktian Sains dalam Sunnah,* trans. A. Zidni Ilham Faylasufa, Jakarta: Amzah, 2007.

al-Safa, Ikhwan, *Dispute between Man and the Animal,* trans. J. Platts, London: W. H Allen, 1869.

Barbour, Ian G., *Juru Bicara Tuhan: antara Sains dan Agama* trans. E.R Muhammad, Bandung: Mizan, 2002.

Bhat, Ali Mohammad, "Philosophical Paradigm of Islamic Cosmology", *Academic Journal: Philosophical Papers and Reviews,* Vol. 7 No. 2 (2016), 13-21.

Bigliardi, Stefano, *Strange Case of Dr. Bucaille: Notes for a Re-Examination,* Oxford: The Muslim World, 2012.

Bucaille, Maurice, *The Qur'an and Modern Science, ed. A. A. A. B Philips,* UAE: Islamic Information Center Dubai, 1995.

Butar-Butar, Arwin Juli Rakhmadi, *Khazanah Astronomi Islam Abad Pertengahan,* Purwokerto: UM Purwokerto Press, 2018.

Chittick, William C, *Science of the Cosmos, Science of the Soul: The Pertinence of Islamic Cosmology in Modern World,* Oxford: A Oneworld Book, 2007.

 DOI://dx.doi.org/10.24042/klm.v16i2.8688

Dhanani, Alnoor, *The Physical Theory of Kalam: Atoms, Space, and Void in Basrian Mu'tazili Cosmology,* Leiden, New York, Koln: E.J Brill, 1994.

Fakhry, Majid, *Al-Farabi: Founder of Islamic Neoplatonism: his life, works, and influence,* Oxford: Oneworld, 2002.

Guessoum, Nidhal, "Islam, Science, Methodological Naturalism, Divine Action, and Miracles", in Hasan, U and Osama, A. (Eds) *Islam & Science: Muslim Response to Science's Big Questions,* Muslim World Scientific Initiative, 2016.

_____, Nidhal, *Islam dan Sains Modern: bagaimana mempertemukan Islam dan sains modern,* terj. Maufur, Bandung: Mizan, 2014.

Heriyanto, Husein, *Revolusi Saintifik Iran,* Jakarta: UI Press, 2013.

Iqbal, Muzaffar, *Science and Islam,* London: Greenwood Press, 2007.

Janos, Damien, *Method, Structure, and the Development in Al-Farabi's Cosmology,* Leiden, Boston: Brill, 2012.

Kamiar, M., *Brilliant Biruni: A Life Story of Abu Rayhan Mohammad Ibn Ahmad,* United States of America: Scarecrow Press, 2009.

Maimun, Ach, *Seyyed Hossein Nasr: pergulatan sains dan spiritualitas menuju paradigma kosmologi alternatif,* Yogyakarta: IRCiSoD, 2015.

Milha, Khalid Yahya Abu, *Scientific Issues in the Holy Qur'an: the Meaning and Translation of Verses Relating to the Creation of the Universe,* Doctoral Thesis: Durham University, 2003.

NASA: Wilkinson Microwave Anisotropy Probe, "Cosmology: The Study of the Universe", accessed from https://map.gsfc.nasa.gov/cosmology/cosmology.html

Nasr, Seyyed Hossein, *An Introduction to Islamic Cosmological doctrines,* Great Britain: Thames and Hudson, 1978.

_____, *Islamic Science: an illustrated study,* England: World of Islam Festival Publishing Company Ltd, 1976.

_____, *Science and Civilization in Islam,* Chicago: ABC International Group, 2001.

_____, *Three Muslim Sages: Avicenna – Suhrawardi – Ibn 'Arabi,* New York: Caravan Book, 1997.

Netton, Ian Richard, *Muslim Neoplatonist: an Introduction to the Thought of the Brethren of Purity (Ikhwan Al-Safa)*, Edinburgh: Edinburgh University Press,1991.

Raof, Hussein Abdul, *Theological Approaches to Qur'anic Exegesis: a practical comparative-contrastive analysis*, London & New York: Routledge, 2012.

Siraj, Fuad Mahbub, "Kosmologi dalam Tinjauan Failasuf Islam", *Jurnal Ilmu Ushuluddin,* Vol. 2 No. 2 (2014), 109-124.

Stenberg, Leif, *The Islamization of Science: four Muslim positions developing an Islamic modernity,* Swedia: Lund University, 1996.

Yahya, Harun, *Signs from the Qur'an*, trans, Julia Konmaz, New Delhi: Goodword Books, 2006.

 DOI://dx.doi.org/10.24042/klm.v16i2.8688