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THE HEAVENLY PHENOMENA: A STUDY OF ABU'L BARAKĀT AL-
BAGHDĀDĪ'S *KITĀB AL-MU 'TABAR*

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BY:

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APPROVAL PAGE (For Master's degree)

I certify that I have supervised and read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a thesis for the degree of Master of **Islamic Science**.



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This dissertation was submitted to the Kulliyah of **ISTAC** and is accepted as partial fulfillment of the requirements for the degree of Master of **Islamic Science**.

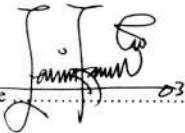


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**THE HEAVENLY PHENOMENA: A STUDY OF ABŪ'L BARAKĀT AL-BAGHDĀDĪ'S
KITĀB AL-MU'TABAR**

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Dedicated to,

My Beloved Children Maisarah, Muhammad Adam and Munirah

بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ

.....So, verify, with every difficulty, there is relief: Verily with every difficulty

there is relief:.....

(Surah Alam-Nashrah: 5-6)

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ABSTRACT

The aim of this thesis is to study four chapters of the second part of volume two of al-Baghdādi's *Kitāb al-Mu'tabar*. The book was written in Baghdad and was known as the book about what has been established by Abū'l Barakāt personal reflection. The work shows that this *Kitāb* represents a non-Aristotelian trend in Islamic philosophy and Abū'l Barakāt idea is remarkable and original. The chapter that we have selected covers topics such as the supposed impenetrability of the heaven, the question out of which material the heaven is made, the fact that there is no change in the heaven and finally the principles and properties of the terrestrial elements.

INTRODUCTION

I. A Survey of Cosmological Doctrines in Antiquity

Cosmology deals with the ultimate causes of the Universe, its origin, constitution and qualitative content. In traditional doctrines, particularly Greek and Islamic, cosmology is always concerned with the application of universal principles, which are sometimes of a metaphysical nature.¹ Knowledge of the early background to cosmological thought is necessary to recognize the achievements of the ancient Near East in Mesopotamia, Egypt and the Semitic cultures, their innovations and theoretical advances; the work was carried on by the Presocratic Greeks in the sixth and fifth century BC and after that by Plato and Aristotle in the fourth century BC.²

The Presocratics faced many key questions and introduced most of the major themes when they initiated the study of the elements of which the whole would be composed, the sources of its movement, the explanation of time and change and the underlying mathematical principles. They were particularly interested in the emergence of the orderly arrangement from disorder at the generation of the cosmos and in the analysis of the resulting construct insofar as it was open to human observation and reason. They questioned where and how the end of the cosmos may come, what place humanity had in the whole, whether life and reason may exist

¹ Seyyed Hossein Nasr, *Islamic Life and Thought* (London: George Allen & Unwin LTD., 1981), 83 hereafter cited as *Islamic Life and Thought*

² M R Wright, *Cosmology in Antiquity* (London: Routledge, 1995), 11 hereafter cited as *Cosmology in Antiquity*

elsewhere, and in general how to find the simplest explanations for the diversity of phenomena, for order emerging from obscurity and for permanence underlying cosmic change.³

These debates were carried forward and tackled with greater sophistication, combined with creative imagination and ruthless logic, by Plato and Aristotle. Plato's response to the presocratic doctrines is found in his *Republic* and *Phaedo*.⁴ His *Timaeus* reveals his interest in the world of nature.⁵ Plato referred to the content of *Timaeus* as a 'likely story' in which the whole of nature is depicted as initiated by a divine creator, called the "Demiurge" (the Geek word for 'craftsman'), who seeks, to the best degree possible, to imitate through physical copies the ideally perfect structures of true being. In this way he institutes the visible cosmos, that is, the ordered domain of things that are susceptible of process and change. The Demiurge himself only assembles the supreme model of the cosmos, the 'world soul', and then delegates his divine subordinates to fit out the detailed structures of the parts of the cosmos. It follows that the whole cosmic system is pervaded with analogical structures, most notably, the human form, which becomes a copy of the whole - a microcosm, as it were - by virtue of the activity of these divine subordinates. All phenomena of nature can be described as an interplay between the two forces of reason and necessity. He represents reason as constituting the world soul. The material medium (the four elements earth, air, water and fire) is introduced as the 'receptacle'

³ Ibid., 7-8

⁴ David C. Lindberg, *The Beginning of Western Science* (Chicago: The University of Chicago Press, 1992), 39

⁵ *Cosmology in Antiquity*, 25

representing the domain of necessity. ⁶ The *Timaeus* was innovative and fertile in ideas, and had a great influence on later cosmological thinking.

Aristotle, a member of Plato's academy also developed detailed and influential theories regarding an enormous range of natural phenomena. His cosmology dominated thought in the Western World for more than 2,000 years and its overthrow is arguably the major achievement of Renaissance science. The book by Aristotle most relevant to cosmology are parts of the *Physics*, for the principles of mathematics, causation, change and movement, *On Generation and Corruption*, on the elements, the three books of *Meteorology* and in particular the specialist work known as *De Caelo*, which presents his view on the organization and structure of the universe.⁷

De Caelo contains some of the basic considerations about motion. All locomotion is either straight, circular, or a combination of the two; and all bodies are either simple (i.e., composed of a single element, such as fire or earth) or compound. The element fire and bodies composed of it have a natural movement upward: bodies composed of earth have a natural movement downward (i.e., toward the center of the universe which is the earth). Circular movement is natural to a substance other than the four elements, called ether, and this substance is considered more divine than the four elements (since circular motion is believed to be prior to straight movement). Aristotle viewed the universe as two concentric spherical regions namely the celestial region and the terrestrial one. He believed that there is a separate set of physical laws for each of the two regions, since they are composed of different types of matter. Aristotle

⁶ Larry J. House, *Historical and Philosophical Development in Cosmology* ("n.p.": "n.p.", 1994), 1-2
Hereafter cited as *Historical and Philosophical Development*

⁷ *Cosmology in Antiquity*, 27

argued that the universe is not infinite because it moves in a circle. If the universe were infinite, its 'circumference' would be moving through an infinite distance in a finite time, which is impossible. Aristotle claimed also that there was only one world. If there were more than one world, each world with a center as the natural place for earthy material to move to and a circumference for fire to move to, then the earth could move toward any of the centers and fire toward any of the circumferences. Chaos would ensue. Since we observe order instead of chaos, there must be only one world. Aristotle also showed that the heavens rotate and that the earth is spherical, stationary and in the center of the heavenly sphere.⁸

In summary, in Aristotle's view of the cosmos, the earth as an heavy element is located at the centre of the Universe and is surrounded by a series of concentric spheres, containing water, air and fire. Then the realm of the heavens is reached, where only the eternal and unchanging ether is present. The whole system moves around an axis which is *axis mundi*, all motions can be retraced through intermediate causes to the Prime Cause, which is the Unmoved Mover. The symbolic quality of this scheme can be seen when looked at in its totality, and there is little wonder that it serves as the cosmological pattern for the *Divine Comedy* where each sphere corresponds to a grade of being and an inner state of the adept who is undertaking the spiritual journey.⁹

⁸ *Historical and Philosophical Development*, 2

⁹ *Islamic Life and Thought*, 88

2. A Survey of Cosmological Doctrines in Islam

The study of the cosmos and its parts takes in a vast panorama which is covered by many scientific disciplines. In classical Islamic civilization, it was of interest to the natural scientists, the geographers, and historians as well as to the theologians, the philosophers and the Gnostics. All such studies, dealing with various parts of the cosmos, took place within the framework of Islamic cosmology, whose basic tenets are derived from the Qur'ān. The principles of all the cosmologies developed in Islam are essentially concerned with the unity and gradation of being—with the assertion that metaphysical reality is ultimately one and not many,¹⁰

In Islam, as in other traditional civilizations, cosmological sciences came into being within the traditional conception of the cosmos and were molded and conditioned by the principles of Islamic revelation. The heritage of the various sciences came into the hands of the Muslims from diverse sources during the first three centuries of Islamic history, and then gradually all these elements became integrated and absorbed into the unitary perspectives of Islam. During the fourth and fifth centuries, interest in natural and mathematical sciences reached its peak and the cosmological sciences became formulated in a manner that was to have a lasting influence upon the whole of Muslim history. The writers of this period laid the

¹⁰Seyyed Hossein Nasr, *Science And Civilization In Islam* (Cambridge: Harvard University Press, 1968; repr., Shah Alam: Dewan Pustaka Fajar, 1984), 92-93 (page reference is to the reprint edition) Hereafter cited as *Science and Civilization in Islam*

foundation for the study of the sciences and determined the direction which various schools of Islamic philosophy and science were to follow during the later centuries.¹¹

Scholars of this most prolific and fruitful period, who played an important role in the creation of the Islamic arts and sciences and of more particular interest, in the cosmological sciences are Abū Naṣr al-Fārābī, Abū'l-Ḥasan al-Mas'ūdī, Yahyā b. 'Adī, Ibrāhīm b. Sinan, Abū'l-Faraj al-Iṣfahānī, Abū'l Ḥasan al-'Āmirī, the Ikhwān al-Ṣafā, al-Birūnī, Abū'l-Barakāt al-Baghdādī, Ibn Sīnā, Abū Sulaimān al-Mantiqī, and Abū Ḥayyān al-Tawhīdī. Those are scholars of the fourth century. Ibn al-Haithām, 'Alī b. 'Isā, 'Umar Khayyām, al-Ghazzālī, Abū Ishāq al-Zarqālī, Nāṣir-i Khusraw, and Abū'l-Ḥasan b. Marzbān Bahmanyār are scholars of the fifth century.¹²

Among these scholars, the Ikhwān al-Ṣafā, al-Birūnī and Ibn Sīnā represent nearly all the important perspectives followed in the cosmological sciences in Islam. The Ikhwān al-Ṣafā, whose perspectives may be identified with the general shi'ite view and more specifically with Ismā'ilism, and whose cosmological doctrines are shared by many later Sufis, present the study of nature as a part of a more general program for the education of mankind. Through considerations of a metaphysical order they relate their vision of the cosmos to its Divine Origin and consider the study of the universe and its parts as a valid and necessary step toward the knowledge of Divine realities¹³

Al-Birūnī was a very competent scientist, historian, and general observer and commentator on the civilizations of mankind as well as a mathematician and

¹¹Seyyed Hossein Nasr, *An Introduction to Islamic Cosmological Doctrines* (London: Thames and Hudson Ltd, 1978), 275 Hereafter cited as *Islamic Cosmological Doctrines*

¹²Ibid., 12-13

¹³*Islamic Cosmological Doctrines*, 275

Astronomer. He approached the study of nature as a devout Muslim who saw the world as the handiwork of God and considered the observation and study of nature as a religious duty. In his writings, certain elements of the Hindu cosmological sciences, especially concerning the concept of time and cosmic cycles, become combined with knowledge derived from Greek sources, and the whole is viewed in the light of the Muslim attitude toward nature as a purposeful domain in which the power and wisdom of the creator is manifested.¹⁴

Ibn Sīnā's philosophy is based on an ontological foundation in which God, the Necessary Being (*wajīb al-wujūd*), is the only being which is pure and the source of all existence. Everything else derives its being (*mahiyya*) and its existence (*wujūd*) from the Necessary Being and hence is contingent upon God. Many of his works are concerned with cosmology, some directly and some only indirectly. These include not only such philosophical works as *al-Shifā'* (The Book of Healing), the *al-Najāt* (The Book of Salvation) and the *Ishārāt wa-Tanbihāt* (The Book of Directives and Remarks) but also his medical works, especially the *al-Qāmūn fi'l-ṭibb* (Canon of Medicine). Also his symbolic recitals contain a mystical cosmology of great depth and significance.¹⁵

A summary picture of Ibn Sīnā's cosmology, at least in its peripatetic version, is to be found in the *Najāt*. There he describes the hierarchy of the multiple states of being with Allah at the summit, who brings into being the Pure Intelligence which is called

¹⁴ Ibid., 275-276

¹⁵ *Islamic Life and Thought*, 91

the Primary Cause. From this Cause come the souls and bodies of the spheres, and the intelligences. From the intelligences proceed Saturn and so forth, down to the lowest sphere, which is the moon. With this last planet, the moon, is connected the tenth and last pure intelligence, which is the active intelligence (*al-'aql al-fa''āl*). The soul of the spheres acts as an intermediary between the intelligences and the heavenly bodies¹⁶.

¹⁶ Ibid., 91

3. On Abū'l Barakāt al-Baghdādī and his *Kitāb al-Mu'tabar*

Abū'l-Barakāt Hibat Allāh b. Malkā al-Baghdādī al-Baladī, a distinguished philosopher and physician was honored with the title *Awhad al-Zamān*, i.e. 'a unique figure of his time'. He was born at Balad near Mosul about 470 A.H/1077 C.E at the latest. Jewish by birth¹⁷, he had for his master Abū'l-Ḥassan Sa'īd b. Hibat Allāh, and became a famous physician, serving in this quality the caliphs of Baghdad – where he resided – and the Saljuq sultans. The anecdotes related by the biographers reveal his often difficult relations with his various patrons and their courts. At an advanced age he was converted to Islam.¹⁸ He became blind at the end of his life and died in Baghdad in the year 560/1164-1165 at the age of 80 or 90.¹⁹

Abū'l Barakat's writings include a philosophical work *Kitāb al-Mu'tabar*, a philosophical commentary on the Ecclesiastes, written in Arabic in Hebrew characters; and the treatise "On the Reason Why the Stars Are Visible at Night and Hidden in

¹⁷His Hebrew name was Nethanel al-Fayyumi. See Arthur Hyman, "Jewish Philosophy in the Islamic World," in *The History of Islamic Philosophy*, ed. Oliver Leaman and Seyyed Hossein Nasr (London: Routledge, "n.d"), 1:685

¹⁸The knowledge of Abū'l-Barakāt al-Baghdādī's conversion to Islam derives solely from Muslim sources. There are four reports extant concerning Abū'l-Barakāt's conversion to Islam. All four recount that he became a Muslim at very advanced age, and that the recognition of Muhammad's prophet hood was not a factor in his decision. Two of the reports connect his conversion to a craving for honor and the respect due a court physician so long as he remained Jewish. According to Ibn Abi Usaybi'ah, Abū'l-Barakāt's was enraged when the Chief Justice (*qadī al-quḍāt*) remained seated before him and did not rise out of respect. Ibn al-Qifti recounts that Abū'l-Barakāt's was insulted by satiric ditty composed against him by Ibn al-Aḥḥad. The other two reports indicate that the elderly philosopher converted to Islam out of fear for his life: in this connection Ibn al-Qifti mentions a royal patient who died in Abū'l-Barakāt's care, while al-Bayhaqi records that the decisions to convert came when Abū'l-Barakāt's was in captivity. From all of these accounts a self-evident conclusion emerges, viz. that under an Islamic regime it was much more pleasant and secure to be a Muslim. For more information refer Sarah Stroumsa, "On Jewish Intellectuals Who Converted," in *The Jew of Medieval Islam Community, Society and Identity*, Ed. Daniel Frank (Leiden, E.J Brill, 1995), 186-188

¹⁹Shlomo Pines, "Abū'l Barakāt" in *Encyclopaedia of Islam*, new ed. (1991), i:111 Hereafter cited as EI

Daytime"²⁰. His main work is the *Kitāb al-Mu'tabar* which deals with logic, natural philosophy (including psychology) and metaphysics.²¹ The book was edited in three volumes by Serefettin Atkaya (Hyderabad, 1357-1358 A.H); the third volume contains (pp 230-252) a paper by Sulayman al-Narwī, dealing with Abū'l Barakāt's biography and with references to him and to his doctrine found in the works of later Muslim writers. It is claimed that this book was composed in Baghdad. Pines suggests that *Kitāb al-Mu'tabar* may be best translated as "the book about what has been established by personal reflection". This implies that he, by no means, regarded himself as a mere faithful transmitter and interpreter of the antique philosophical tradition. On the other hand, it was in no way part of his intention to disparage that tradition.²²

According to Abu'l-Barakat's own account, *Kitāb al-Mu'tabar* consists of critical remarks jotted down by him over the years while reading philosophical texts and published, at the insistence of his friends, in the form of a philosophical work. According to his own statement, he inserted nothing that had not been established by his personal reflections, no traditional authority carrying any weight in such matters. In Pines opinion, the genesis of *Kitāb al-Mu'tabar* as an accumulation of notes may account for various doctrinal inconsistencies in the work; Abū'l-Barakāt's many bold deviations from Ibn Sina's physics and metaphysics appear to be at variance with his complete acceptance of considerable portions of his predecessor's views.²³

²⁰ Shlomo Pines, "Abū'l Barakāt al-Baghdādī," in *Dictionary of Scientific Biography* (New York: Charles Scribners Sons, 1973), 1:26 Hereafter cited as *Dictionary of Scientific Biography*

²¹ EI, 1:111

²² Shlomo Pines, *Studies in Abū'l Barakāt al-Baghdādī Physics and Metaphysics* (Jerusalem: The Magnes Press, 1979), 262

²³ *Dictionary of Scientific Biography*, 1:26

At Abū'l Barakāt's time the dominant philosophy was that of Ibn Sīnā, and he more or less followed the plan of the *Shifā'*. Its composition closely followed that of the Logic, Naturalia, and Metaphysics of Ibn Sīnā's voluminous *Kitāb al-Shifā'*. He accepted several theses contained in it, rejected many others, even the very important ones, and examined them in the light of his personal reflection. This does not mean that Abū'l-Barakāt never used other ancient or contemporary doctrines; he adopted a certain number of neoplatonic notions and others that belonged to the *kalān*, but the fact remains that some ideas are strictly his own. They are not always logically arranged, sometimes only juxtaposed, and his philosophical system is not always coherent.²⁴

One may say that, al-Baghdādī's thought is part of the Aristotelian current of thought, for he used Aristotelian ideas. But he used them in a very non-Aristotelian way.²⁵ Hossein Ziai considers al-Baghdādī's *Kitāb al-Mu'tabar* as a major anti-Aristotelian philosophic encyclopedia, in which he develops an alternative structure for a foundation of philosophy, especially of epistemology.²⁶ It is shown by Shlomo Pines in his many detailed studies that al-Baghdādī also treats certain problems of physics from a distinctly non-Aristotelian perspective. According to him, Al-Baghdādī's intent was not to reject Avicennan philosophy, nor to prove its incoherence, but to improve the existing structure and rectify the perceived logical and metaphysical inconsistencies of the previous texts. Furthermore, he is the first to have

²⁴ Collette Sirat, *A History of Jewish Philosophy in the Middle Ages* (New York: Cambridge University Press, 1985), 133

²⁵ *Ibid.*, 131

²⁶ Hossein Ziai "The Illuminationist tradition" in *The History of Islamic Philosophy*, 466-467

refuted the basic principle of Aristotelian dynamics according to which a constant force produces a uniform movement whose velocity is proportional to the force causing motion. Rather, he asserted that a constant force which produces natural motion causes accelerated motion. The *al-Mu'tabar* therefore is the first evidence of a non-Aristotelian trend in Islamic philosophy which was later systematized by Suhrawardi in his illuminationist reconstruction of philosophy.

Al-Baghdadi through his *Kitāb al-Mu'tabar* has continued John Philoponus' (a sixth century (A.D) Christian philosopher) criticism of the Aristotelian theory of motion and adopted the view of Philoponus but disagreed with Avicenna on the perpetual continuity of motion in the void. He also studied the question of the accelerated motion of a falling body.²⁷

We may conclude that al-Baghdadi's *al-Mu'tabar* represents a non-Aristotelian trend in Islamic philosophy. To give further evidence for this conclusion demands an in-depth study of those parts of *Kitāb al-Mu'tabar* that remained unstudied up to now. Therefore our focus will be the study of four chapters of the second part of volume two of al-Baghdadi's *Kitāb al-Mu'tabar*, which deals with heavenly phenomena.²⁸

The second part of volume two of this *Kitāb al-Mu'tabar* is divided into ten chapters. We intend to study four of these chapters. The topics which these chapters cover may be known from their titles. The third chapter is entitled "Discussion of the supposed impenetrability of the heaven and determination of the true doctrine about

²⁷ *Science and Civilization in Islam*, 314-315

²⁸ The 7th chapter of this part (Hyderabad edition vol II, pp 141-147) has been studied by Pines. It discusses various points concerning the motions of the heavenly bodies or motion in general. This second part of the second volume of *Kitāb al-Mu'tabar* deals with matters discussed in Aristotle's *De Caelo*

it". The fourth chapter is entitled "Inquiry into the question whether the heaven is natural or whether it [consists of] other natures different from these natures or whether it is one of them or is composed of [several of] them". The fifth chapter is entitled "On the fact that the heaven does not have an contrary and that transformation and corruption do not occur in them". The eighth chapter is entitled "On the principles and the powers of motion and rest of the bodies which are inside the celestial sphere".