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Between Theology and History: Re-evaluating the Solar Eclipse Narrative in the Karbala Tragedy through Islamic Historiography and Astronomy

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Abstract

This study critically examines the widely circulated claim that a solar eclipse occurred on the day of Ḥusayn ibn ʿAli's martyrdom during the Karbala tragedy (10 Muḥarram 61 AH / 10 October 680 CE). While the narrative appears in classical sources such as Tārīkh al-Khulafā' by al-Suyuthi, it has rarely been subjected to rigorous interdisciplinary verification. This research addresses that gap by integrating historical-textual criticism with astronomical data analysis. Using a qualitative library-based approach, the study evaluates the reliability of the narrative through isnād and matn criticism, while cross-referencing it with NASA eclipse records and Stellarium simulations. The findings demonstrate that no solar eclipse occurred or was observable in the region on the stated date, thereby contradicting the historical claim. This suggests that the eclipse narrative functions primarily as a symbolic and theological construct rather than an empirical event. The study contributes to Islamic historiography by emphasizing the importance of methodological integration between traditional scholarship and modern scientific tools, offering a clearer distinction between symbolic religious narratives and historically verifiable facts.
***Keywords**: Solar Eclipse; Karbala Tragedy; Islamic Historiography.*

Abstrak

Penelitian ini secara kritis mengkaji klaim yang banyak beredar bahwa terjadi gerhana matahari pada hari wafatnya Ḥusayn ibn ʿAli dalam tragedi Karbala (10 Muḥarram 61 H / 10 Oktober 680 M). Meskipun narasi tersebut muncul dalam sumber klasik seperti *Tārīkh al-Khulafā'* karya al-Suyuthi, klaim ini jarang diuji melalui verifikasi interdisipliner yang ketat. Penelitian ini bertujuan mengisi kesenjangan tersebut dengan mengintegrasikan kritik historis-tekstual dan analisis data astronomi. Dengan menggunakan pendekatan kualitatif berbasis studi kepustakaan, penelitian ini menilai keandalan narasi melalui kritik isnād dan matn, serta mengujinya dengan data gerhana dari NASA dan simulasi menggunakan Stellarium. Hasil penelitian menunjukkan

bahwa tidak terjadi gerhana matahari, maupun yang dapat diamati di wilayah tersebut, pada tanggal yang dimaksud, sehingga bertentangan dengan klaim historis yang ada. Temuan ini mengindikasikan bahwa narasi gerhana lebih berfungsi sebagai konstruksi simbolik dan teologis daripada peristiwa empiris. Penelitian ini berkontribusi dalam kajian historiografi Islam dengan menekankan pentingnya integrasi metodologi antara tradisi keilmuan klasik dan perangkat ilmiah modern, serta menawarkan pemisahan yang lebih jelas antara narasi keagamaan simbolik dan fakta sejarah yang dapat diverifikasi.
Kata Kunci: Gerhana Matahari; Tragedi Karbala; Historiografi Islam.

INTRODUCTION

The Tragedy of Karbala stands as one of the most heartbreaking and monumental events in Islamic history. Occurring on 10 Muharram 61 AH (October 10, 680 CE), the incident involved the killing of the Prophet Muhammad's grandson, Husayn ibn Ali, along with his companions, by the forces of the Umayyad caliphate on the plains of Karbala, in present-day Iraq.[1] This event is remembered as a historical wound and a powerful symbol of resistance against injustice and tyranny. Karbala is commemorated annually, particularly by Shia Muslims, as a moment of mourning and a source of moral inspiration in the struggle to uphold truth and righteousness.[2]

Over time, this tragedy has evolved into a narrative enriched with theological, spiritual, and even cosmological meanings. One of the claims found in several works of Islamic historiography is that a solar eclipse occurred on the day of Husayn's martyrdom. This phenomenon has often been interpreted as a sign of cosmic mourning over the unjust killing of the Prophet's grandson, thereby reinforcing the symbolic and mythological dimension of the Karbala narrative.[3]

One of the classical sources that explicitly records this claim is *Tārīkh al-Khulafā'* by al-Suyuthi. In this work, it is mentioned that the sun darkened on the day of Husayn's death and that the sky remained red for an extended period. This account has been widely cited in later

[1] Syaifullah, "10 Muharram Dan Tragedi Karbala, Terbunuhnya Cucu Nabi Muhammad," jatim.nu.or.id, 2022, https://jatim.nu.or.id/rehat/10-muharram-dan-tragedi-karbala-terbunuhnya-cucu-nabi-muhammad-Htfey.

[2] Nadirsyah Hosen, "Tragedi Karbala, Kisah Husein Cucu Nabi Terbunuh Tragis Pada 10 Muharram," jatim.nu.or.id, 2023, https://jatim.nu.or.id/rehat/tragedi-karbala-kisah-husein-cucu-nabi-terbunuh-tragis-pada-10-muharram-GZ0hL.

[3] Syamsuri Rifai, "Peristiwa-Peristiwa Alam Saat Dan Sesudah Imam Husein (as) Terbunuh," Portal Informasi Profesor Hossein Ansarian, accessed July 25, 2025, https://erfan.ir/indonesian/80386.html.

historical and popular writings, contributing to the perception of a celestial connection to the tragedy.[4]

Despite its popularity, however, the eclipse narrative has not been systematically examined through an integrated approach combining hadith criticism and modern astronomical verification.[5] his lack of interdisciplinary scrutiny reveals a significant research gap within Islamic studies, particularly in distinguishing between symbolic narratives and empirically verifiable historical events.

This study, therefore, seeks to address the following research questions: (1) Did a solar eclipse actually occur on 10 Muharram 61 AH according to astronomical records? (2) How reliable is the narration found in *Tārīkh al-Khulafā'* when examined from a historiographical and hadith criticism perspective? (3) Should the eclipse narrative be understood as a symbolic expression or as a historical event?

The purpose of this article is to critically re-evaluate the eclipse claim through both historical and astronomical approaches.[6] The historical method is used to trace the origin of the narrative, analyze its transmission through isnād and matn criticism, and assess its credibility within the broader framework of Islamic historiography. Meanwhile, the astronomical approach reconstructs the celestial conditions on the specified date using modern astronomical data and simulation tools, allowing for an objective verification of the claim.

This study offers a novel interdisciplinary contribution by integrating Islamic historiography, hadith criticism, and astronomical science into a single analytical framework. Such an approach not only enables a more rigorous evaluation of historical claims but also provides a clearer distinction between symbolic religious narratives and historically verifiable facts.

Ultimately, this research aims not to undermine the spiritual significance of the Karbala tragedy, but rather to clarify the epistemological boundaries between faith-based symbolism and

[4] Jalaluddin Al-Suyuthi, *Tarikh Al-Khulafa* (Qatar: Idarah al-Syuun al-Islamiyyah, n.d.), 342; Jalaluddin Al-Suyuthi, *Tarikh Al-Khulafa Terjemah Bahasa Indoneisa* (Jakarta: Pustaka Al-Kautsar, 2000), 245.

[5] Syarifuddin Syam Muhammad Syukri Albani Nasution Faisar Ananda Arfa, *Metode Studi Islam: Jawa Tengah Mencari Islam* (Depok: PT. Raja Grafindo Persada, 2015), 133-134; Kaelan, *Metode Penelitian Agama Kualitatif Interdisipliner Dengan Ilmu Lain* (Yogyakarta: Paradigma, 2010), 177-178.

[6] Li'izza Diana Manzil, "Korelasi Historisitas Ilmu Hisab Rukyat Dengan Perkembangan Peradaban Islam," *Al Istinbath: Jurnal Hukum Islam* 3, no. 2 (2018): 185–206, https://doi.org/10.29240/jhi.v3i2.432.

empirical historical reality. By doing so, it contributes to a more nuanced understanding of Islamic historical narratives and encourages the application of interdisciplinary methods in the study of classical Islamic sources.

RESEARCH METHODS

This study is a library-based research[7] employing an interdisciplinary qualitative approach that integrates historical criticism (*naqd al-tārīkh*) and scientific verification through astronomical analysis. This approach is adopted to rigorously examine historical claims, particularly the narrative of a solar eclipse associated with the Karbala tragedy. The analytical framework includes isnād criticism (chain of transmission evaluation), matn criticism (content analysis), comparative historiography, and astronomical simulation, ensuring that the study is not merely descriptive but analytical and verifiable.[8]

The data sources consist of both primary and secondary materials. The primary source is the classical text *Tārīkh al-Khulafā'* by Jalaluddin al-Suyuthi, which explicitly reports the occurrence of a solar eclipse and a change in the color of the sky on the day of Ḥusayn's martyrdom. Secondary sources include works on Islamic historiography, modern academic studies, and astronomical datasets from NASA, particularly the catalog of solar eclipses in the 7th century CE. In addition, the Stellarium software is utilized to simulate the sky conditions on 10 Muḥarram 61 AH (approximately October 10, 680 CE) in the region of Karbala, enabling both computational and visual verification of the eclipse claim.

Data collection is conducted through systematic library research using documentation and source classification techniques.[9] The data are

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[7] Penelitian kepustakaan merupakan penelitian yang banyak menggunakan buku, artikel ilmiah, dokumen, dan catatan sebagai sumber penelitian . Baca Bungaran Antonius Simanjuntak dan Soedjito Sosrodihardjo, *Metode Penelitian Sosial* (Jakarta: Yayasan Pustaka Obor Indonesia, 2009), 8; Nyoman Kutha Ratna, *Metodologi Penelitian: Kajian Budaya Dan Ilmu Sosial Humaniora Pada Umumnya* (Yogyakarta: Pustaka Pelajar, 2010), 244.

[8] Muhammad Syukri Albani Nasution Faisar Ananda Arfa, Syarifuddin Syam, *Metode Studi Islam: Jawa Tengah Mencari Islam* (Depok: PT. Raja Grafindo Persada, 2015); Wael B. Hallaq, *Shari'a: Theory, Practice, Transformations* (Cambridge: Cambridge University Press, 2009); Wael be Hallaq, *An Introduction to Islamic Law* (Cambridge: Cambridge University Press, 2009).

[9] Y. S. Denzim Norman K, *Handbook of Qualitative Research* (Yogyakarta: Pustaka Pelajar, 2009); M Win Afgani Wiyandra Vera Nurfajriani, Muhammad Wahyu Ilhami, Arvian Mahendra, Rusdy Abdullah Sirodj, "Triangulasi Data Dalam Analisis

analyzed by integrating textual criticism with astronomical simulation and are validated through triangulation, namely cross-verification between classical historical texts and modern astronomical data.[10] The results of this comparison are synthesized to address the central research question concerning the validity of the eclipse claim. Through this interdisciplinary methodology, the study contributes to clarifying the distinction between symbolic narratives and empirical historical facts within Islamic historiography in a more critical and verifiable manner.

RESULT AND DISCUSSION

Classical Islamic Historiography of Karbala

In the corpus of classical Islamic historiography, the Tragedy of Karbala holds a central position as a traumatic and symbolic event involving the family of the Prophet Muhammad (peace be upon him), particularly his grandson, Husayn ibn Ali. Classical historians such as Abu Mikhnaf (d. 157 AH)[11], al-Tabari (d. 310 AH)[12], and Ibn Sa'id (d. 230 AH)[13] regarded this event as a crucial part of the political and religious narrative following the Prophet's death. Karbala is not merely treated as a historical incident, but also as a moral turning point in the history of the Islamic caliphate, especially in the context of the relationship between the Ahl al-Bayt (the Prophet's family) and the ruling Umayyad dynasty.

The narrative of Karbala in classical historical texts is often conveyed in a poetic and emotional style. This is particularly evident in works such as *Tārīkh al-Rusul wa al-Mulūk* by al-Tabari, where descriptions of Husayn's martyrdom are adorned with excerpts of speeches, weeping, and lamentations.[14] Such a presentation indicates that historical writers were not solely concerned with factual objectivity but also sought to convey the moral and religious weight of the event to their readers.

The book *Tārīkh al-Khulafā'* by al-Suyuthi (d. 911 AH) also memorializes the Tragedy of Karbala as part of the historical succession

Data Kualitatif," *Jurnal Ilmiah Wahana Pendidikan* 10, no. 17 (2024): 826–33, https://jurnal.peneliti.net/index.php/JIWP/article/view/7892.

[10] Kaelan, *Metode Penelitian Agama Kualitatif Interdisipliner Dengan Ilmu Lain*.

[11] Abu Mikhnaf, *Maqtal Al-Husain*, n.d., 1-45.

[12] Abu Ja'far Muhammad bin Jarir Al-Tabari, *Tarikh Al-Tabari: Tarikh Al-Rusul Wa Al-Muluk*, Juz 5 (Mesir: Dar al-Ma'arif, n.d.).

[13] Muhammad bin Sa'id, *Al-Thabaqat Al-Kabir* (Kairo: Maktabah al-Khonji, n.d.).

[14] Al-Tabari, *Tarikh Al-Tabari: Tarikh Al-Rusul Wa Al-Muluk*, 393.

of Islamic caliphs. Although compiled several centuries after the event, al-Suyuti still adopts an emotional and spiritual narrative, including references to natural phenomena such as a solar eclipse, believed to have occurred as a sign of the heavens mourning the death of the Prophet's grandson.[15] This narrative indicates that even within Sunni tradition, the tragedy of Karbala holds a significant place as a pivotal moment in Islamic history.

Several modern historians, such as Hugh Kennedy and Torsten Hylén, note that the Tragedy of Karbala marks the beginning of political and theological polarization within Islam. It served as a foundational moment for forming Shia identity and developing collective mourning practices (*ma'tam*) that go beyond the boundaries of historical narrative, entering into spiritual and performative realms. Therefore, the significance of Karbala cannot be understood solely from a historical perspective; it must also be seen as a social and religious construct that continues to evolve.[16]

Thus, in classical Islamic literature, Karbala is not merely positioned as a political tragedy but rather as a sacralized event that opens a space for religious symbolism and sectarian identity. As a result, narratives surrounding Karbala including claims of cosmic phenomena such as eclipses are often more hagiographic than historiographic. This aligns with the tendencies of early Islamic historiography, which did not strictly separate historical facts from supernatural elements. This phenomenon reflects the worldview (weltanschauung) of early Muslim communities, who perceived a deep interconnection between the heavens and the earth, between cosmic events and human affairs. It is therefore not surprising that many classical Islamic historical texts include accounts of celestial miracles, eclipses, mysterious voices, or blood under stones in the context of major tragedies like Karbala.

Supernatural narratives are also found in other significant events, such as the death of the Prophet Muhammad, which was said to be accompanied by darkened skies and heavenly rumblings, or the assassination of Umar ibn Khattab, described as causing a "tremor of the earth in Medina." These narratives illustrate a style of historical writing that blends historiography, theology, and literature. According to Chase

[15] Al-Suyuthi, *Tarikh Al-Khulafa*, 342.

[16] Hugh Kennedy, *The Prophet and the Age of the Caliphates: The Islamic Near East from the Sixth to the Eleventh Century* (New York: Routledge, 2016), 77; Torsten HylénHylén, *The Karbala Story and Early Shi'ite Identity* (United Kingdom: Edinburgh University Press, 2025), 41.

F. Robinson, early Islamic historiography cannot be separated from strong hagiographic and devotional tendencies.[17]

In the context of Karbala, supernatural narratives become increasingly prominent because Husayn is positioned as a sacred figure. It is said that after his martyrdom, no stone was lifted without blood being found beneath it, the sky turned red for months, and the sun was said to be veiled as if an eclipse had occurred. Although these claims cannot be scientifically verified, they persist in the collective memory of the community, particularly among Shia Muslims.[18]

Scholars such as Wilferd Madelung emphasize that symbolic and theological elements in Islamic historiography are not distortions but integral parts of historical writing in the early period. The aim was not to present a linear and factual chronology of events, but to convey moral, religious, and eschatological messages to the reader.[19] Therefore, modern readings of Islamic historical texts must consider the context of their composition and the ideological orientation behind the narratives.

Thus, emphasizing historiographical tendencies indicates that the Karbala narrative including claims about natural phenomena such as eclipses is more appropriately understood as a narrative construction imbued with symbolic and religious meaning. Early Islamic historiography did not draw a strict distinction between fact and meaning; rather, it integrated both within a unified narrative framework. Therefore, in modern academic studies, an analytical effort is required to distinguish between empirical and symbolic dimensions, enabling a more comprehensive understanding of Karbala without disregarding the intellectual and spiritual context in which the narrative emerged.

The Eclipse Narrative in Islamic Tradition

The phenomenon of eclipses holds a unique place in Islamic tradition not only understood in astronomical terms but also interpreted theologically.[20] In hadith literature, eclipses (***kusūf/khusūf***) are not

[17] Chase F. Robinson, *Islamic Historiography* (United Kingdom: Cambridge University Press, 2003), 83.

[18] Hutan Hejazi, "Shi'ism in Madrid: Muharram Commemorations and the Paradigm of Karbala," *Journal of Contemporary Religion* 37, no. 2 (2022): 243–60, https://www.tandfonline.com/doi/abs/10.1080/13537903.2022.2049058.

[19] Wilferd Madelung, *The Succession to Muhammad: A Study of the Early Caliphate* (United Kingdom: Cambridge University Press, 1997), 141.

[20] Mahsun Ahmad Izzuddin, Mohamad Arja Imroni, Ali Imron, "Cultural Myth of Eclipse in a Central Javanese Village: Between Islamic Identity and Local Tradition," *HTS Teologiese Studies/Theological Studies* 78, no. 1–9 (2022), https://hts.org.za/index.php/hts/article/view/7282.

regarded as ordinary natural events; instead, they are often seen as moments for reflection, contemplation, and strengthening awareness of Allah's power. This perspective is evident in various hadiths that encourage the performance of the eclipse prayer (*ṣalāt al-kusūf*) when such events occur, as recorded in *Sahih Bukhari* and *Sahih Muslim*.

One of the most well-known hadiths related to eclipses is the narration concerning a solar eclipse that occurred on the day of the death of Ibrahim, the son of the Prophet Muhammad (peace be upon him). When some people linked the eclipse to the sorrowful event of Ibrahim's passing, the Prophet firmly refuted this by declaring: "Indeed, the sun and the moon are two signs among the signs of Allah; they do not eclipse because of the death or life of anyone" (*Hadith narrated by Bukhari and Muslim*). This statement carries profound theological and epistemological significance, as it illustrates the Prophet's effort to distinguish natural phenomena from myth-based personal attributions.[21]

In Qur'anic exegesis, verses related to celestial phenomena are also interpreted with symbolic and spiritual meaning. For example, in Surah *al-Qiyamah* (75:9), which states, *"and the sun and the moon are joined together,"* exegetes such as al-Tabari and al-Razi interpret this verse as an eschatological event that will occur on the Day of Judgment. This interpretation is not intended as a literal astronomical description but as a moral and spiritual reminder of God's sovereignty over the cosmos.[22]

Several classical fiqh (Islamic jurisprudence) texts, such as the works of al-Nawawi and Ibn Qudamah, affirm that the eclipse prayer glorifies Allah's power over the universe.[23] The eclipse phenomenon is used as a reminder of the Day of Judgment, as the hadith states, *"The eclipse is a reminder."* Thus, although eclipses are acknowledged and recorded in Islamic literature, they are not interpreted as resulting from

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[21] Ahmad Ainul Yaqin dan Fahmi Fatwa Rosyadi Satria Hamdani, "Hadis Gerhana Dan Wafatnya Ibrahim Ibn Muhammad," *Tahkim: Jurnal Peradaban Dan Hukum Islam* 1, no. 1 (2018): 54–67, https://www.neliti.com/id/publications/335054/hadis-gerhana-dan-wafatnya-ibrahim-ibn-muhammad; Mulyadi, "Taklif of Lunar and Solar Eclipse Prayers According to Fiqh and Scientific Perspective," *Al-Ihkam: Jurnal Hukum Dan Pranata Sosial* 14, no. 1 (2019): 27–49, https://doi.org/10.19105/al-lhkam.v14i1.1862.

[22] Muhammad bin Jarir Al-Tabari, *Tafsir Ath-Thabari: Jami' Al-Bayan Fi Ta'wil Al-Qur'an*, Juz 25 (Jakarta: Pustaka Azzam, 2007), 796-801; Fakhruddin Al-Razi, *Tafsir Al-Kabir* (Mesir: al-Matba'ah al-Bahiyah al-Misriyah, 1939).

[23] Muhyiddin Abi Zakariya Yahya bin Syarof Al-Nawawi, *Minhaju Al-Thalibin Wa 'Umdatu Al-Muftin* (Jedah: Dar al-Minhaj, n.d.), 143-145; Ibnu Qudamah, *Al-Mughni*, Juz 3 (Jakarta: Pustaka Azzam, 2013), 199.

human events but as part of *sunnatullah* the divine laws governing the natural order.

Therefore, within the framework of normative Islamic thought, an eclipse is not considered a manifestation of emotional or symbolic events related to any specific individual. This assertion is essential to understanding why claims linking eclipses to the tragedy of Karbala need to be critically deconstructed, both theologically and historiographically.

In addition to the death of Ibrahim, Muhammad's son, several claims in popular Islamic tradition and narrative history associate eclipses with prominent figures. These claims typically appear in hagiographic or devotional literature, where cosmic phenomena are portrayed as expressions of the universe mourning the loss of a sacred figure. However, as demonstrated in the hadith concerning the death of Ibrahim, the Prophet explicitly rejected such forms of glorification.[24]

One example of such a narrative can be found in several Shia sources and some Sunni sources, such as *Tārīkh al-Khulafā'* by al-Suyuthi, which mentions that the sun was eclipsed and the sky turned red following the martyrdom of al-Ḥusayn in Karbala.[25] This narrative reflects a continuity between religious traditions rich in symbolic meaning and interpretations of complex political and spiritual realities. However, this account lacks support from contemporary 7th-century astronomical records.

Similar claims are also found in Sufi traditions and the stories of saints (*awliyā'*). For example, in several *manāqib* (hagiographical accounts), it is narrated that the sky turned dark or strange lights appeared at the time of a great saint's death.[26] Although these accounts are not intended as scientific records, they reinforce the spiritual stature of the figure being described and cultivate a sense of collective emotion among their followers.

Modern scholars have raised criticism of such narratives. For instance, Ignaz Goldziher and G.H.A. Juynboll have pointed out that early Islamic historiography was not entirely free from elements of myth

[24] Hamdani, "Hadis Gerhana Dan Wafatnya Ibrahim Ibn Muhammad."

[25] Al-Suyuthi, *Tarikh Al-Khulafa*, 342; Al-Suyuthi, *Tarikh Al-Khulafa Terjemah Bahasa Indoneisa*, 245.

[26] Abu Minhal, "Kejadian Aneh Para Wali, Komoditas Penting Golongan Sufi," almanhaj.or.id, 2022, https://almanhaj.or.id/67937-kejadian-aneh-para-wali-komoditas-penting-golongan-sufi.html.

and rhetoric.[27] They caution that such narratives should be treated with care, primarily when used as sources of factual history.

Therefore, claims of eclipses linked to Islamic figures should be understood within religious literacy, not as scientific representations. While these narratives undoubtedly carry cultural and theological value, an interdisciplinary approach remains necessary to distinguish between devotional myth-making and historically verifiable facts.

The Contribution of Islamic Astronomy in Recording and Predicting Eclipses

Classical Muslim scholars played a significant role in the development of astronomy, including in the observation and prediction of eclipses. From the 8th to the 15th century CE, many Muslim intellectuals produced astronomical works that preserved the legacy of Greek science and corrected and expanded upon its theories and astronomical tables. Figures such as al-Battani, al-Biruni, Ibn Yunus, and Ulugh Beg are among the key references in the historical recording of celestial phenomena, including eclipses.[28]

One of the most essential works in this context is *Zij al-Sabi'i* by al-Battani (d. 929 CE), which systematically recorded the timing and parameters of eclipses and compiled ephemeris tables for future predictions. He refined the Ptolemaic theory and significantly contributed to the accuracy of eclipse forecasting.[29] Similarly, al-Biruni,

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[27] Ignaz Goldziher, *Muslim Studies: Muhammedanische Studien, Terj. S.M. Stern & C.R. Barber*, Vol. 2. (London: George Allen & Unwin, 1971), 17; Ahmad Taufik Fathila, Linda Hazmika, "Pemikiran Ignaz Goldziher Terhadap Hadis Dan Sunnah," *Thobaqot* 2, no. 2 (2024): 243–265, https://thobaqot.fusa.uinjambi.ac.id/index.php/tbq/article/view/83; Icha Agustina Gian Nitya Putri, Hilda Meylani, "Kritik Hadis Menurut Pemikiran G.H.A Juynboll Dan Joseph Schacht," *Jurnal Integritas Teruka* 1, no. 1 (2022): 59–70, https://www.journal.integritasterbuka.id/index.php/integritas/article/view/3.

[28] Arwin Juli Rakhmadi Butar-Butar, *Khazanah Astronomi Islam Abad Pertengahan: Deskripsi-Historis Tentang Tradisi, Inovasi, Dan Kontribusi Peradaban Islam Di Bidang Astronomi* (Purwokerto: UPM Press, 2016); Nor Kholis Muh Arif Royyani, Maryatul Kibtyah, Adeni Adeni, Ahmad Adib Rofiuddin, Machzumy Machzumy, "Religious Dialogue and Astronomy from the Perspective of Indonesian Muslim Scholars," *Samarah: Jurnal Hukum Keluarga Dan Hukum Islam* 7, no. 1 (2023): 261–80, https://doi.org/10.22373/sjhk.v7i1.12406.

[29] Mohammad Salah Aldin Abdullatif, "Al-Battani Contributions in Astronomy and Mathematics," in *Contributions of Early Muslim Scientists to Engineering Studies and Related Sciences* (Malaysia: International Islamic University Malaysia Press, 2011), 45–48; Byron D. Cannon, "Al-Battani," ebsco.com, 2022, https://www.ebsco.com/research-starters/biography/al-battani; J J O'Connor and E F

in his *al-Qanun al-Masʿudi*, not only discussed the theory of eclipses but also provided practical methods for calculating their occurrence, taking into account the geographical coordinates of the observer.[30]

Eclipse observations also formed an essential part of astronomical research at Islamic observatories, such as those in Maragha, Baghdad, and Samarkand. Ulugh Beg, for instance, at the Samarkand observatory, compiled the *Zij-Sultani*, one of the most accurate astronomical tables of its time.[31] The eclipse data recorded during this period remains a valuable source that modern astronomers and historians of science still reference.

Classical Islamic astronomical records were used to understand cosmic phenomena and held significant value in the study of historical chronology. Eclipses, as astronomical events that can be retroactively calculated, are often used by historians to verify the accuracy of dates and events in historical sources. Thus, the contributions of Muslim scholars were not only scientific but also methodological in historical reconstruction.

Through this astronomical legacy, it becomes clear that Muslims had already developed a well-established scientific tradition in understanding celestial movements far removed from mythological narratives that tend to be emotional or symbolic. This contribution is crucial for re-examining claims such as the eclipse associated with the Karbala tragedy using scientifically verifiable, data-driven methods.

Although the achievements of classical Islamic astronomy are awe-inspiring, it is essential to understand that not all historical records of eclipses can be scientifically verified. The scientific validity of a record depends on how accurately, comprehensively, and verifiably the data was documented. Many eclipse reports found in historical sources, including those in classical *tārīkh* (chronicles), consist only of brief descriptions without geographical coordinates, precise timing, or sufficient astronomical data to be confirmed through modern calculations.

Robertson, "Abu Abdallah Mohammad Ibn Jabir Al-Battani," Mac Tutor, 1999, https://mathshistory.st-andrews.ac.uk/Biographies/Al-Battani/; FSTC, "Arabic Eclipse Records Bring Light to Scientific Analysis of the Earth's Rotation," Muslim Heritage, 2008, https://muslimheritage.com/arabic-eclipse-records-bring-light-to-scientific-analysis-of-the-earths-rotation/.

[30] Abu Rayhan Muhammad bin Ahmad Al-Biruni, *Al-Qanun Al-Mas'udi* (India: The Dairatul Ma'arif al-Osmania, 1995).

[31] David A. King, *In Synchrony with the Heavens: Studies in Astronomical Timekeeping and Instrumentation in Medieval Islamic Civilization* (Leiden and London: Brill, 2004), 107.

One of the main challenges is that historical accounts of eclipses are often intertwined with theological or symbolic narratives, as seen in reports tied to significant events such as the death of prominent figures or the tragedy of Karbala. This makes it difficult to distinguish between scientific documentation and narrative construction. For example, although writers like al-Suyūṭī mention celestial phenomena in works such as *Tārīkh al-Khulafā'*, these descriptions often lack the astronomical detail necessary for modern verification.

On the other hand, modern astronomical data allows for highly accurate retro-calculation of eclipses. Today's mathematical models and astronomical software can trace eclipses that occurred thousands of years ago, based on parameters such as earth's rotation, the Saros cycle, and lunar dynamics.[32] Through this approach, contemporary researchers have concluded that no solar eclipse occurred in the region of Kufa or Karbala on the 10th of Muharram 61 AH (October 10, 680 CE), as claimed in some classical sources.

Nevertheless, limitations still exist particularly in accessing local records or non-standard observational data that may not have survived. This highlights the need for caution before outright accepting or rejecting specific claims. Therefore, combining modern astronomical methods with critical historiographical approaches is essential when re-examining early Islamic historical sources.

Understanding the limitations of astronomical data in historical analysis does not mean dismissing the value of classical sources. Instead, it provides a methodological foundation for distinguishing between theological-narrative constructions and evidence based on scientific observation. This becomes a key element in the deconstruction of cosmic claims, such as the eclipse associated with the tragedy of Karbala.

Sanad Criticism and Historiographical Analysis of the Eclipse Claim in the Karbala Tragedy in *Tārīkh al-Khulafā*

[32] 'Alamul Yaqin, "Contemporary Haqiqī Calculation: Analysis of Rinto Anugraha's Lunar Eclipse Calculation Methods," *Journal of Islamic Law* 3, no. 1 (2022): 17–33, https://doi.org/10.24260/jil.v3i1.531; M Basthoni, "Accuracy of Solar Eclipse Calculation Algorithm Based on Jet Propulsion Laboratory Data Nasa," *Al-Ahkam* 30, no. 1 (2020): 95–118, https://doi.org/10.21580/ahkam.2020.30.1.5036; Encep Abdul Rojak dan Ramdan Fawzi, "The Normative Basis of Islamic Astronomy for the Transformation of Prayer Schedules to Digital and Its Accuracy," *El-Usrah: Jurnal Hukum Keluarga* 7, no. 2 (2024): 602–22, https://doi.org/10.22373/ujhk.v7i2.22097.

In *Tārīkh al-Khulaf*ā, Jalaluddin al-Suyuti states that on the day Husayn ibn Ali was martyred, a solar eclipse and other celestial phenomena occurred. Among the most well-known narratives is:[33]

> ولما قتل الحسين مكثت الدنيا سبعة أيام والشمس على الحيطان كالملاحف المعصفرة، والكواكب يضرب بعضها بعضا. وكسفت الشمس ذلك اليوم, واحتمرت افاق السماء ستة أشهر بعد قتله, ثم لا زالت الحمرة ترى فيها بعد ذلك ولم تكن ترى فيها قبله.

> It is stated: *"When Husayn was killed, the world was enveloped in darkness for seven days, and the sunlight on the walls appeared like cloth dyed in a yellowish-red hue. The stars collided with one another. The sun also experienced an eclipse on that day. The sky turned red six months after his death, and thereafter, a reddish hue continued appearing in the sky, something never seen before."*

This statement is accompanied by descriptions of the sky's atmosphere turning red for months following the tragedy of Karbala. Such narratives evoke the impression that even the heavens mourned the martyrdom of the Prophet's grandson. al-Suyuthi's account can be read as an expression of the Muslim community's collective grief over the tragedy of Karbala, conveyed through cosmic symbolism. He captures this sorrow in rhetorically striking imagery such as eclipses, reddened skies, and blood appearing beneath stones. Within the context of medieval literary conventions, such cosmic portrayals were not unusual and were often part of how historians conveyed moral or spiritual meaning.

As an encyclopedic scholar of the 15th century CE, al-Suyuthi is known less for rigorous sanad criticism in his historical works than for his ability to compile diverse sources, including hadith traditions and popular narratives. In *Tārīkh al-Khulafā'*, he frequently presents events in a narrative style rich with emotional and symbolic elements. From a historiographical perspective, his work is therefore more compilatory than critically verificative. This necessitates a cautious reading, as his method does not always clearly distinguish between factual reports and narrative constructions that developed within religious traditions.

[33] Al-Suyuthi, *Tarikh Al-Khulafa*, 341-342.

Furthermore, the eclipse narrative appears to reflect a form of collective moral expression rather than a scientific claim. In Islamic historiography, major events are often accompanied by cosmic narratives as symbolic proclamations of the magnitude of a tragedy or the sanctity of a figure. Thus, the mention of an eclipse in the context of Karbala can be understood as a "symbolic language" expressing profound grief, rather than as an empirical report. From a historiographical standpoint, this illustrates the tendency toward *sacralizing history*, in which events are endowed with cosmic significance.

Nevertheless, from the perspective of modern historical inquiry, such narratives must be tested through textual criticism, historical analysis, and cross-source comparison. Methodologically, the report of an eclipse in al-Suyuthi's work lacks a clearly documented chain of transmission. He does not specify the original narrator or the transmission pathway of the report. In both hadith studies and classical Islamic historiography, the absence of sanad is a primary indicator of weak credibility, as it prevents verification of the source's authority.[34] This suggests that, from the standpoint of transmission, the narrative lacks a solid epistemological foundation.

Beyond the weakness of its transmission, the content of the narrative also raises serious problems from both scientific and historical perspectives. The claim that a solar eclipse occurred on 10 Muḥarram 61 AH (October 10, 680 CE) can be tested using modern astronomical data. Such verification shows that no solar eclipse was visible in the region of Iraq on that date. Therefore, the claim contradicts established empirical reality (*mukhālafah al-ḥiss*), which is certain and scientifically measurable, and thus cannot be accepted as a historical fact.

Moreover, descriptions such as the sky remaining red for six months, blood appearing beneath every stone, and stars being visible during the daytime [35] fall into the category of *khāriq li al-'ādah* (extraordinary or unnatural phenomena). In matn criticism, such elements are typically regarded as indicators of mythological or symbolic tendencies rather than realistic descriptions. From the perspective of rationality (*mukhālafah al-'aql*), these accounts are

[34] Harald Motzki, *Wie Glaubwürdig Sind Die Hadithe?: Die Klassische Islamische Hadith-Kritik Im Licht Moderner Wissenschaft* (Heidelberg: Springer VS, 2014); Jonathan A.C. Brown, *Hadith: Muhammad's Legacy in the Medieval and Modern World* (London: Oneworld Publications, 2009).

[35] Ismail bin Umar bi Katsir Al-Dimasyqi, *Al-Bidayah Wa Al-Nihayah*, Juz 11 (Beirut: Dar ibn Katsir, 2000), 576.

difficult to accept, as they contradict natural laws and common sense. This further weakens the credibility of the narrative as a verifiable historical report.

In the tradition of matn criticism, a report may be rejected if it clearly contradicts reason, natural law, or well-established facts. Accordingly, the claim of an eclipse in al-Suyūṭī's narrative should be classified as a narrative construction shaped by emotion and ideological tendencies rather than empirical observation. This evaluation reinforces the conclusion that the report cannot serve as a primary source for asserting the occurrence of an eclipse during the Karbala event, but should instead be understood as a symbolic text reflecting the emotional atmosphere of the Muslim community.

This evaluation reinforces the assumption that the narrative cannot be used as a primary source to conclude that a solar eclipse truly occurred during the Karbala event. Instead, it should be studied as a symbolic text reflecting emotional sentiment, not as evidence of a natural phenomenon.

From a comparative historiographical perspective, when comparing al-Suyuti's narrative with earlier works of Islamic historiography, it becomes evident that not all classical historians mention an eclipse in connection with the Karbala event. One of the most important works is *Tārīkh al-Rusul wa al-Mulūk* by Abu Jaʿfar al-Tabari (d. 310 AH), which provides extensive details about the events of Karbala. However, in his account, al-Tabari does not mention celestial phenomena, such as an eclipse, on the day of Husayn's martyrdom.[36]

Similarly, *Tārīkh Dimashq* by Ibn ʿAsakir (d. 571 AH), which traces the genealogies and histories of key figures in Islam, presents a reasonably comprehensive account of the Karbala tragedy but without any mention of a solar eclipse or other supernatural phenomena. The absence of eclipse-related information in these two works is significant, given that both are chronologically closer to the time of the event and are generally regarded as more factually grounded than al-Suyuti's work, which was written several centuries later.[37]

Even *al-Bidāyah wa al-Nihāyah* by Ibn Kathir (d. 774 AH), a historian and hadith scholar known for his critical stance toward weak narrations, mentions celestial phenomena with caution and without affirming that a solar eclipse occurred. This indicates that such a

[36] Al-Tabari, *Tarikh Al-Tabari: Tarikh Al-Rusul Wa Al-Muluk*, 400-411.

[37] Ali bin al-Hasan bin Hibatillah bin 'Abdillah bin al-Husain bin 'Asakir, *Tarikh Madinah Dimasyq*, Juz 14. (Beirut: Dar al-Fikr, 1995), 111-260.

narrative does not belong to Islamic historiography's strong and authoritative tradition.[38]

When credible early historical sources fail to mention a major event such as an eclipse which, logically, would have drawn significant attention if it had truly occurred this absence can be considered strong evidence that the claim is a later addition. In historiographical studies, this phenomenon is referred to as *silent testimony* the silence of primary sources regarding a spectacular claim can itself serve as evidence of its inaccuracy.

Thus, when compared with earlier and more relatively descriptive and objective historiographical works, al-Suyuthi's account appears to reflect a later emotional and religious discourse. It is more appropriately positioned as a cultural-religious document rather than a strong historical proof. This historiographical critique demonstrates that the eclipse narrative in the Karbala tragedy is part of a symbolic meaning-making process within Islamic tradition, and therefore must be critically deconstructed to distinguish between historical fact and theological expression.

Astronomical Veryfication of the Eclipse Claim in the Karbala Incident

Astronomical studies of celestial events such as solar eclipses rely on calculations grounded in celestial mechanics. The Hijri calendar, which is lunar-based, allows for the correlation of 10 Muharram 61 AH with October 10, 680 CE in the Julian calendar. With the aid of modern astronomical software and ephemeris data from NASA and other astronomical institutions, it is possible to accurately determine whether a solar eclipse occurred on that date and whether it would have been visible from the region of Iraq, particularly Karbala.

A solar eclipse occurs when the moon covers part or all of the sun's disk from the earth's perspective, and it can only happen during the *ijtimāʿ* (conjunction) of the moon that is, when the moon is positioned between the earth and the sun in a straight line. However, not every new moon results in an eclipse, as the moon may be slightly north or south of the ecliptic plane, outside earth's shadow path. Therefore, in addition to the timing of the conjunction, the moon's position relative to the sun on the celestial plane is also a crucial factor in determining whether an eclipse will occur. There are three main types of solar eclipses: total,

[38] Al-Dimasyqi, *Al-Bidayah Wa Al-Nihayah*, 579.

partial, and annular, depending on the distance and geometric positioning of the moon and earth at the time.[39]

The duration of a solar eclipse varies greatly depending on its type and the observer's location. A total eclipse, for instance, typically lasts only a few minutes at any given area, at most around 7 minutes. A partial eclipse may last slightly longer, but still only within a matter of minutes.[40] This means an eclipse cannot last for several hours, let alone an entire day, as is sometimes portrayed in legendary or folkloric narratives.

Moreover, a solar eclipse can only be observed along a specific path on the earth's surface. Areas outside the umbra's path will only witness a partial eclipse, while regions not crossed by the eclipse path will see nothing.[41] Therefore, a narrative that claims "the sun was covered and stars were visible during the day" could only be valid if the location in question was situated precisely along the path of totality.

It is not only the duration, but also the visual characteristics of a solar eclipse that can be distinctly recognized for example, the gradual dimming of the sky, the appearance of the solar corona, and the rapid movement of the moon's shadow.[42] Such detailed descriptions are

[39] Ismail, "Hisab Urfi Gerhana Matahari Dan Gerhana Bulan," *Al-Marshad: Jurnal Astronomi Islam Dan Ilmu-Ilmu Berkaitan* 6, no. 1 (2020): 45–59, https://jurnal.umsu.ac.id/index.php/almarshad/article/view/4411; Ailsa Zada Yusrika Santi Yanuar, Nawanda De Gupita, "Fenomena Gerhana Matahari Dalam Perspektif Islam Dan Sains," in *Prosiding Konferensi Integrasi Interkoneksi Islam Dan Sains Ke-4* (Yogyakarta: Fakultas Sains dan Teknologi UIN Sunan Kalijaga, 2022), 6–10, https://ejournal.uin-suka.ac.id/saintek/kiiis/article/view/3257; Paul K. Piff Sean P. Goldy, Nickolas M. Jones, "The Social Effects of an Awesome Solar Eclipse," *Psychological Science* 33, no. 9 (2022): 1452–1462, https://journals.sagepub.com/doi/full/10.1177/09567976221085501; Tong Dang Ruoxi Li, Jiuhou Lei, "The Solar Eclipse Effects on Yhe Upper Thermosphere," *Geophysical Research Letters* 48, no. 15 (2021): 1–10, https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2021GL094749.

[40] Syaiful Mujab, "Gerhana: Antara Mitos, Sains Dan Islam," *Yudisia: Jurnal Pemikiran Hukum Dan Hukum Islam* 5, no. 84–101 (2016); Siti Lailatul Mukarromah, "Perhitungan Gerhana Matahari Dengan Algoritma NASA," *Ulul Albab: Jurnal Studi Dan Penelitian Hukum Islam* 2, no. 2 (2019): 99–113, https://jurnal.unissula.ac.id/index.php/ua/article/view/3642.

[41] Sohrah Nurul Mufidah, Mahyuddin Latuconsina, "Peristiwa Gerhana Matahari Dan Bulan Perspektif Budaya Dan Ilmu Falak," *Hisabuna: Jurnal Ilmu Falak* 3, no. 1 (2022): 111–130, https://journal.uin-alauddin.ac.id/index.php/hisabuna/article/view/23056.

[42] Alimuddin, "Gerhana Matahari Di Abad 21," *Al-Daulah: Jurnal Hukum Pidana Dan Ketatanegaraan* 5, no. 2 (2016): 427–443, https://journal.uin-

notably absent in al-Suyuthi's narrative or other sources mentioning the alleged Karbala eclipse, which instead tend to be fantastical and symbolic.

Astronomical investigation shows that the lunar conjunction (*ijtimāʿ*) closest to October 10, 680 CE, occurred a few days earlier but did not result in an eclipse. An eclipse only happens if the moon's umbral shadow touches the earth's surface, and this is only possible at specific locations along the eclipse path. To verify the claim of an eclipse on the stated date, precise data is needed regarding the timing, type of eclipse, and its visibility region.

Matching this date with available ancient eclipse catalogs, such as NASA's *Five Millennium Canon of Solar Eclipses*, clarifies the existence or non-existence of an eclipse on that date. Those records show no solar eclipse occurred on October 10, 680 CE. Therefore, from an astronomical standpoint, the claim is unfounded.

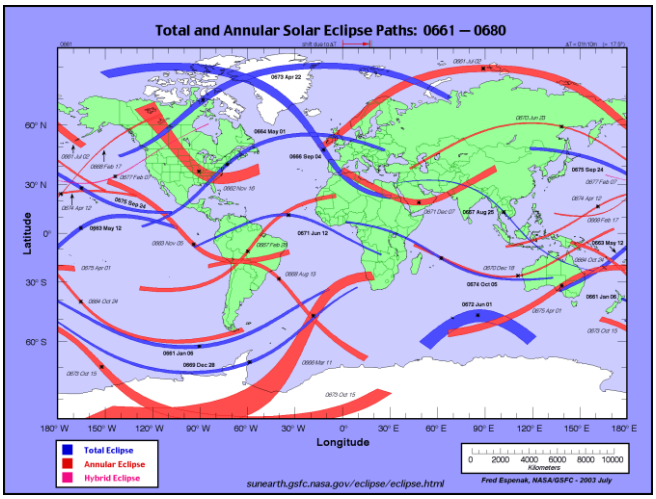

Photo 1. Map of Solar Eclipses from 661 to 680 CE.[43]

alauddin.ac.id/index.php/al_daulah/article/view/4859; Sulastri Wahyuni, Nuril Husna, Mustanir, "Sanis Dan Al-Qur'an: Proses Terjadinya Gerhana Matahari," *Al-Tadabbur: Jurnal Ilmu Al-Qur'an Dan Tafsir* 5, no. 2 (2020): 349–64, https://jurnal.staialhidayahbogor.ac.id/index.php/alt/article/view/936; L. F. Chernogor, "Geomagnetic Effect of the Solar Eclipse of June 10, 2021," *Kinematics and Physics of Celestial Bodies* 38 (2022): 11–24, https://link.springer.com/article/10.3103/S0884591322010020.

[43] NASA, "Total and Annular Solar Eclipse Paths: 0661-0680," National Aeronautics and Space Administration, 2003, https://eclipse.gsfc.nasa.gov/SEatlas/SEatlas1/SEatlas0661.GIF.

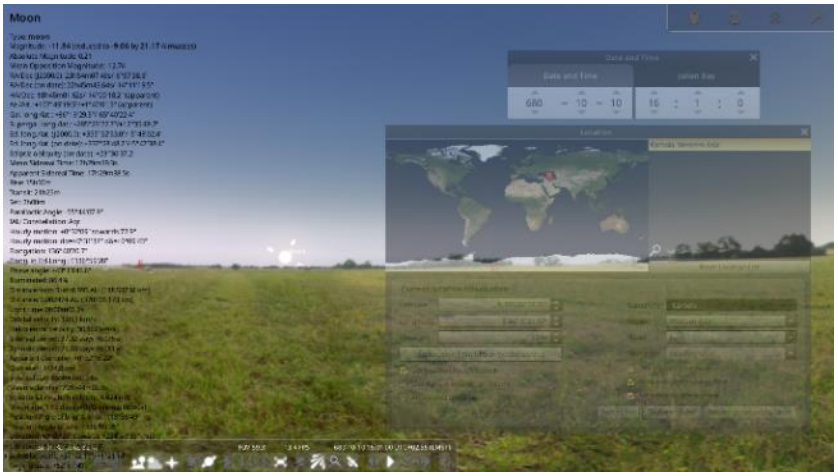

Photo 2. Visualization of the Sky over Karbala on October 10, 680 CE.[44]

06383	0676 Aug 15	04:47:42	4004	-16368	75	P	-t	-1.4450	0.1836	71S	78E	0		
06384	0676 Sep 13	15:37:12	4003	-16367	113	P	t-	1.2509	0.5352	72N	59E	0		
06385	0677 Feb 07	22:08:16	3999	-16362	80	H	-p	0.7632	1.0073	34N	144W	40	39	00m40s
06386	0677 Aug 04	10:52:22	3995	-16356	85	A	-p	-0.7474	0.9521	31S	25E	41	262	05m33s
06387	0678 Jan 28	12:28:34	3990	-16350	90	T	nn	0.0480	1.0501	15S	13E	87	166	04m40s
06388	0678 Jul 24	11:34:07	3986	-16344	95	Am	nn	-0.0011	0.9455	20N	24E	90	201	07m10s
06389	0679 Jan 18	04:21:40	3982	-16338	100	T	p-	-0.6329	1.0360	59S	143E	50	157	02m33s
06390	0679 Jul 13	13:53:46	3977	-16332	105	A	p-	0.7531	0.9724	71N	2W	41	151	02m07s
06391	0679 Dec 09	02:20:02	3973	-16327	72	P	-t	1.5072	0.0911	65N	176W	0		
06392	0680 Jan 07	17:06:18	3973	-16326	110	P	t-	-1.3669	0.3276	68S	114E	0		

Catalog of Solar Eclipses: 0601 to 0700

Catalog Number	Calendar Date	TD of Greatest Eclipse	ΔT s	Luna Num	Saros Num	Ecl. Type	QLE	Gamma	Ecl. Mag.	Lat °	Long °	Sun Alt °	Path Width km	Central Dur.
06393	0680 Jun 02	15:04:59	3969	-16321	77	P	-t	-1.1075	0.8109	64S	2W	0		
06394	0680 Jul 01	23:10:18	3968	-16320	115	P	t-	1.4605	0.1456	67N	30E	0		
06395	0680 Nov 27	04:24:53	3965	-16315	82	A	-p	0.8734	0.9133	37N	144E	29	673	10m08s
06396	0681 May 23	07:58:17	3960	-16309	87	T	-n	-0.3538	1.0797	1N	81E	69	274	07m10s
06397	0681 Nov 16	03:27:16	3956	-16303	92	A	nn	0.1936	0.9264	9S	145E	79	282	09m29s
06398	0682 May 13	00:23:49	3951	-16297	97	T	n-	0.3964	1.0494	41N	179E	66	178	03m54s
06399	0682 Nov 05	07:04:37	3947	-16291	102	A	p-	-0.5056	0.9706	44S	71E	59	122	02m35s
06400	0683 May 02	11:50:52	3943	-16285	107	P	t-	1.2071	0.6135	62N	106W	0		
06401	0683 Sep 26	07:54:43	3939	-16280	74	P	-t	1.4907	0.0822	61N	161E	0		
06402	0683 Oct 25	18:04:33	3938	-16279	112	P	t-	-1.1635	0.6981	62S	166E	0		

Photo 3. Catalog of Solar Eclipses from 601 to 700 CE.[45]

[44] Fabien Chereau, "Stellarium," n.d.

[45] NASA, "Catalog of Solar Eclipse: 0601 to 0700," National Aeronautics and Space Administration, accessed July 28, 2025, https://eclipse.gsfc.nasa.gov/SEcat5/SE0601-0700.html.

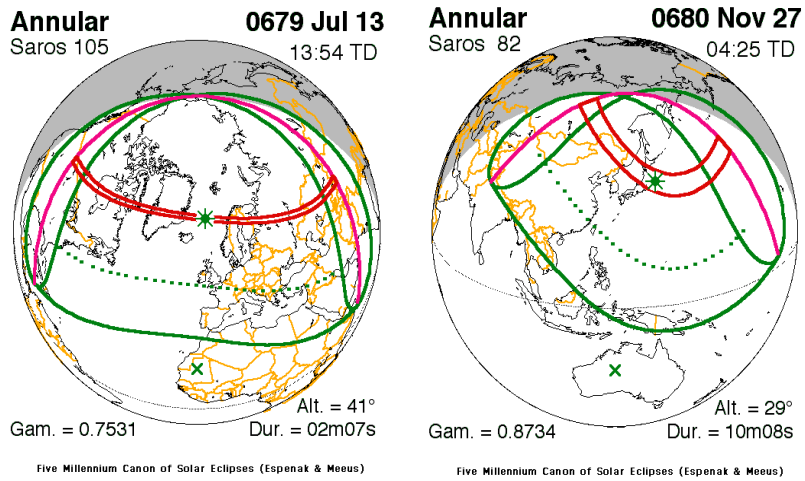

Photo 4. Solar Eclipses on July 13, 679, and November 27, 680 CE.[46]

Based on the solar eclipse catalog compiled by Fred Espenak (NASA), as shown in Figures 1 and 3, it is known that no solar eclipse partial, annular, or total occurred on October 10, 680 CE. According to the visualization generated by the Stellarium software (Figure 2), on that day the new moon rose at 16:00 local time. Even when examined within a range of several days before and after that date, no eclipse is found to have been visible from the Middle East region. In other words, the region of Iraq, where the Karbala tragedy took place, was not traversed by the Moon's shadow that would produce an eclipse at that time.

Meanwhile, as illustrated in Figure 4, global visibility data from eclipse path maps show that the only eclipses occurring closest to October 10, 680 CE were on July 13, 679 CE and November 27, 680 CE. Both were not visible from the Iraqi region, and therefore cannot serve as a basis for the claim of an eclipse during the Karbala event. This means that there is no astronomical correlation between the date of the event and the eclipse narrative.

These calculations are definitive because the positions of the moon and the sun within the solar system are deterministic and can be

[46] NASA, "Annular 0679 July 13," *National Aeronautics and Space Administration*, accessed July 28, 2025, https://eclipse.gsfc.nasa.gov/5MCSEmap/0601-0700/679-07-13.gif; NASA, "Annular 0680 November 27," *National Aeronautics and Space Administration*, accessed July 28, 2025, https://eclipse.gsfc.nasa.gov/5MCSEmap/0601-0700/680-11-27.gif.

accurately traced back thousands of years. This makes astronomy a highly valuable discipline for correcting or verifying historical reports related to natural phenomena.

When historical claims are examined through the lens of modern astronomy, a clear confrontation arises between traditional narratives and scientific data. As previously explained, no astronomical record of a solar eclipse is visible from Karbala on October 10, 680 CE. This indicates a fundamental inconsistency between the claim and the actual sky conditions.

The claim that "the sun was covered, stars appeared, and the sky turned red for six months" contradicts the basic principles of solar eclipses. A solar eclipse does not cause stars to become visible across the sky, nor does it last for months. Even in the case of a total eclipse, the visual effects are extremely brief and localized not global, and certainly not prolonged.

Accurate and publicly available astronomical data can be a primary reference for testing historical narratives related to celestial events. The examination of eclipse catalogs spanning the past five thousand years has established astronomy as a crucial tool in history, particularly in clarifying myths and legends.

The absence of alignment between al-Suyuthi's claim and astronomical data indicates that the information is rooted more in narrative tradition and emotional belief than in empirical observation. In the context of the Karbala tragedy, such narratives most likely developed within a framework of glorification and collective mourning among Muslims, particularly among Shia communities and some sympathetic Sunnis.

Given the lack of supporting data, it can be concluded that the claim of a solar eclipse occurring at the time of Husayn's death has no astronomical basis. This reinforces the view that the report expresses grief or glorification surrounding the Karbala tragedy more than a scientific fact. This conclusion becomes even stronger when compared to the absence of such claims in earlier historical works closer to the time of the event, as discussed in the previous section. The claim appears to have emerged only in literature written centuries later and is not supported by available celestial data.

This study demonstrates that astronomy offers an exact validation method when verifying the truth of historical narratives involving celestial phenomena. If the results show no eclipse occurred, then the narrative must be reconsidered as potentially mythological or allegorical

rather than factual. Thus, the astronomical approach not only refutes the eclipse claim in the Karbala tragedy but also contributes to reconstructing our understanding of how history is written, how myths are formed, and how scientific facts can serve as instruments of objectivity in studying religious history.

Theological and Historical Truth Regarding the Eclipse Claim in the Karbala Tragedy

In Islamic epistemology, truth is not singular but layered between *'ilm al-yaqīn* (certain knowledge) and *ẓann* (probabilistic knowledge). Therefore, every report especially those related to natural phenomena must be examined through multidimensional approaches: theological, historical, and empirical. The claim of a solar eclipse associated with the death of al-Ḥusayn represents an important case illustrating the tension between these two forms of truth within Islamic historiography. In this context, a critical approach becomes essential, as not all reports hold the same epistemological status. Consequently, the analysis of the Karbala eclipse narrative cannot remain merely descriptive but must be directed toward evaluating its level of validity and the category of truth it represents.

The concept of *'ilm al-yaqīn* refers to knowledge that possesses a high degree of certainty, either because it is supported by definitive evidence (*dalīl qaṭ'ī*) or by indisputable empirical reality. In the case of eclipses, modern astronomy provides highly precise data through mathematical calculations that can be independently verified. When such data demonstrate that no eclipse occurred on 10 Muḥarram 61 AH, then epistemologically, any claim contradicting this cannot be sustained at the level of certainty.[47] Thus, the eclipse claim undergoes an epistemic degradation from a potential level of certainty (*yaqīn*) to that of conjecture (*ẓann*), or even to outright rejection.

Conversely, *ẓann* in Islamic epistemology denotes knowledge that is speculative or probabilistic, particularly when it lacks a strong chain of transmission (*sanad*). Many reports within early Islamic historiography fall into this category, especially those involving

[47] Miftah H. Yusufpati, "Ritual Karbala: Tradisi Kaum Syiah Saat Hari Asyura, Penyesalan Diri Para Pengkhianat," sindonews.com, 2022, https://kalam.sindonews.com/read/843159/786/ritual-karbala-tradisi-kaum-syiah-saat-hari-asyura-penyesalan-diri-para-pengkhianat-1659341315; M. Rizqy Fauzi, "Peristiwa Bersejarah Asyura: Perkabungan Dunia Di Karbala (3)," jabar.nu.or.id, 2023, https://jabar.nu.or.id/sejarah/peristiwa-bersejarah-asyura-perkabungan-dunia-di-karbala-3-CAkKE.

extraordinary elements or cosmic phenomena. The eclipse claim in the Karbala tragedy, which lacks a clear sanad and has no empirical confirmation, is more appropriately classified as *ẓann marjūḥ* (weak conjecture). Methodologically, such a report cannot serve as a basis for establishing definitive historical truth.

The distinction between *khabar* and myth is crucial in interpreting this narrative. In Islamic tradition, *khabar* refers to a report that can be tested through sanad and matn analysis and verified through rational and empirical means. In contrast, myth is a symbolic construct intended to convey moral or spiritual meaning. The eclipse narrative in the Karbala tragedy exhibits mythological characteristics, such as the reddening of the sky and other cosmic phenomena, which function not as factual reports but as symbolic expressions of grief and tragedy.

The inclusive nature of early Islamic historiography further reinforces this interpretation. Historians such as al-Tabari often compiled reports without strict verification, thereby allowing symbolic narratives to coexist alongside historical accounts. This indicates that early historiography was not always oriented toward empirical objectivity but also toward preserving narrative traditions. Therefore, a critical reading is necessary to distinguish between verifiable reports and symbolic narratives.

From a theological perspective, authentic hadith explicitly state that eclipses are not related to the death or life of any individual. This principle serves as a normative standard in evaluating the Karbala eclipse claim. If a report asserts that an eclipse occurred as an expression of cosmic grief over the death of al-Ḥusayn, then it directly contradicts the teachings of the Prophet.[48] Within the epistemological hierarchy of Islam, authentic hadith hold higher authority than weak historical reports; thus, the claim must be rejected on theological grounds.

From a historiographical standpoint, the absence of eclipse reports in major early works, such as those by al-Tabari and Ibn Kathir, is highly significant. This phenomenon, known as the *argument from silence*, strengthens doubts about the claim. If an event as remarkable as a solar eclipse had truly occurred, it would have been recorded by major historians. Its absence suggests that the narrative likely emerged as a later construction.

[48] Seyyed Hossein Nasr, *Islamic Art and Spirituality* (New York: State University of New York Press, 1987), 8.

Modern astronomical verification further strengthens this conclusion. Data provided by institutions such as NASA confirm that no solar eclipse occurred on the claimed date. Since such data are independently verifiable and highly accurate, they approach the level of *'ilm al-yaqīn*. The contradiction between the narrative and empirical data constitutes *mukhālafah al-ḥiss* (contradiction with sensory reality), which, in Islamic methodology, is a strong basis for rejecting a claim.

However, rejecting the historical claim does not negate the symbolic meaning embedded within the narrative. The eclipse story can be understood as an expression of "cosmic grief," reflecting the profound emotional and spiritual response of the Muslim community to the tragedy of Karbala. In the works of Jalaluddin al-Suyuthi, such narratives function as part of the glorification of al-Ḥusayn as a noble martyr, rather than as scientific reports.[49]

A hermeneutical approach further clarifies that these narratives function as theological metaphors rather than empirical descriptions. The eclipse, the reddened sky, and other cosmic phenomena symbolize the loss of truth and the triumph of tyranny. In this sense, the narrative serves as a meaning-making construct that reinforces collective identity and religious consciousness, rather than as a verifiable historical fact.

This interpretation aligns with the view of Chase F. Robinson, who argues that early Islamic historiography was not solely concerned with factual objectivity but also with conveying moral and religious messages. Similarly, modern scholars such as Ignaz Goldziher and G. H. A. Juynboll emphasize the importance of distinguishing between historically grounded reports and mythological narratives. They demonstrate that many accounts in early Islamic historiography require critical re-evaluation. Accordingly, the eclipse narrative is better classified as a hagiographical embellishment rather than historical reportage.

In conclusion, through the integration of Islamic epistemology, hadith criticism, historiographical analysis, and scientific verification, it can be determined that the eclipse claim in the Karbala tragedy does not meet the criteria of either historical or theological truth. It fails to reach the level of *'ilm al-yaqīn* and cannot even be sustained as strong *ẓann*. Therefore, the eclipse narrative is more appropriately understood as a symbolic myth reflecting the depth of emotional and spiritual

[49] Vergilius Ferm, *An Encyclopedia of Religion* (New York: The Philosophical Library, 1945), 777.

engagement of the Muslim community with the tragedy of Karbala. Distinguishing between *khabar* and myth thus becomes essential for a critical and balanced understanding of Islamic historical texts.

CONCLUSION

This study concludes that the claim of a solar eclipse occurring during the tragedy of Karbala cannot be sustained from either a scientific or historiographical perspective. Modern astronomical verification clearly demonstrates that no solar eclipse took place on 10 Muḥarram 61 AH in the region of Karbala, indicating that the claim contradicts empirical reality (*mukhālafah al-ḥiss*) and thus fails to reach a level of certainty approaching *'ilm al-yaqīn*. From a historiographical standpoint, the narrative is not supported by credible early primary sources and exhibits significant weaknesses in its chain of transmission (*sanad*) as well as inconsistencies in its content (*matn*). This suggests that the report is more likely a later narrative construction rather than a verifiable historical fact.

This study contributes significantly through an interdisciplinary approach that integrates Islamic epistemology, hadith criticism, historiography, and astronomy. Such an approach enables a clearer distinction between *khabar* as verifiable reports and myth as symbolic narratives. Consequently, this research not only evaluates the validity of the eclipse claim but also clarifies how early Islamic historiography often incorporates hagiographical elements that serve to convey theological and emotional meanings. These findings enrich Islamic studies by offering a more critical and verifiable analytical framework for interpreting classical texts.

As a recommendation, future research should adopt a more comprehensive approach by integrating Islamic scholarly methodologies, particularly *uṣūl al-ḥadīth*, with modern scientific verification. This approach is essential for assessing historical claims related to natural phenomena in classical literature in a more accurate and proportional manner. In doing so, future studies can continue to bridge the gap between the Islamic intellectual tradition and modern science, fostering a more objective understanding without neglecting the theological and cultural dimensions embedded within classical texts.

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