Journal of Islamic History
Vol. 6, No. 1sp, 2026: p.118-142 10.53088/jih.v6i1sp.3743
https://journal.nurscienceinstitute.id/index.php/jih

ISLAMIZING TIME IN SEVENTEENTH-CENTURY JAVA: CALENDRICAL REFORM, CONTESTED HISTORIES, AND THE NEGOTIATION OF AUTHORITY

Fairuz Sabiq
Universitas Islam Negeri Raden Mas Said Surakarta, Indonesia
Email: fairuz.sabiq@staff.uin.said.ac.id

Mahira Arrosyida
Universitas Islam Negeri Raden Mas Said Surakarta, Indonesia
Email: mahiraa380@mail.com

Submited:	Revision Required:	Published:
August 15, 2026	September 13, 2026	October 22, 2026

Abstract

This article investigates the Islamization of time in seventeenth-century Java by reading the calendar reform. This article examines the historical relationship between calendrical knowledge, religious legitimacy, and royal authority. The study employs a critical literature-based historical approach, comparing published analyses of the reform, studies of the *Serat Widya Pradhana*, and scholarship on Islamic Mataram. It argues that the calendar's combination of a lunar reckoning, inherited year numbering, and Javanese temporal cycles can be interpreted as a negotiated arrangement rather than a total cultural replacement. Attributing calendrical authorship to Sultan Agung and, later, to Sunan Giri II in a literary genealogy indicates competing modes of authorizing Islamic time. These accounts should

not be conflated with contemporary evidence for the reform. The article proposes calendrical authority as a limited analytical framework linking knowledge, institutions, and social practice, while acknowledging that the absence of independently examined seventeenth-century manuscripts prevents claims about a uniform implementation throughout Java.

Keywords: *authority; historiography; javanese islamic calendar; religious temporality; sultan agung.*

Abstract

Artikel ini menjelaskan dan menelaah tentang islamisasi waktu di Jawa pada abad ketujuh belas Masehi melalui pembacaan reformasi kalender. Kajian dalam artikel ini yaitu menjelaskan hubungan historis antara pengetahuan penanggalan, legitimasi keagamaan, dan otoritas kerajaan. Penelitian yang digunakan adalah metode sejarah berbasis kajian pustaka kritis dengan membandingkan studi reformasi kalender, kajian Serat Widya Pradhana, dan historiografi Mataram Islam. Pembahasan artikel menunjukkan bahwa penggabungan perhitungan lunar, keberlanjutan angka tahun, dan siklus waktu Jawa dapat dipahami sebagai hasil negosiasi, bukan penggantian budaya secara menyeluruh. Sementara pengaitan asal-usul kalender dengan Sultan Agung dan, dalam genealogi kesusastraan yang lebih, kemudian dengan Sunan Giri II memperlihatkan cara berbeda dalam mengesahkan waktu dalam Islam. Kedua narasi ini tidak dapat langsung diperlakukan sebagai bukti sezaman. Artikel mengusulkan otoritas penanggalan sebagai kerangka analisis terbatas yang menghubungkan pengetahuan, kelembagaan, dan praktik sosial. Artikel juga mengakui bahwa belum diperiksanya manuskrip abad ketujuh belas secara langsung yang pada akhirnya membatasi kesimpulan mengenai penerapan kalender secara merata di Jawa. Pembacaan ini menempatkan perbedaan sumber sebagai persoalan historiografi.

Kata Kunci: *otoritas; historiografi; kalender jawa islam; waktu keagamaan; sultan agung;*

INTRODUCTION

In society, calendars generally appear to be neutral instruments for naming days, organizing months, and counting years. In the history of

kingdoms and religions, however, calendars and dating systems carry broader significance. A date can serve as an administrative language, determine the rhythm of rituals, mark relationships between generations, and connect political events with a cosmological order. A calendar, therefore, cannot be fully explained merely in terms of time calculation. It also raises questions about who has the authority to determine time, how a rule gains acceptance, and why elements of older traditions persist. These issues are central to this examination of the seventeenth-century CE reform of the Javanese Islamic calendar.

In the commonly accepted account, the reform maintained continuity in Javanese year numbering while shifting the year's basis from the Saka tradition to lunar reckoning associated with the Hijri calendar. Javanese adopted Islamic month names, while the five-day pasaran cycle continued alongside the seven-day week. This description adequately introduces the calendar's structure, but it does not explain the historical significance of retaining certain elements while changing others. It also tends to obscure the distinction between technical features examined in later calendars, seventeenth-century historiographical accounts, and modern interpretations of the kingdom's political intentions (Musonnif, 2016; Mahmudah & Izzuddin, 2023).

The history of Islam in Java cannot itself be framed as a simple opposition between an older culture and a new religion. Ricklefs (1998, 2014) shows why interpretations that treat Javanese and Islamic identities as two poles separate from the outset fail for many historical periods. Within this framework, calendrical systems can be studied as a field in which Islamic idioms, court structures, and social customs intersect. However, describing this encounter merely as acculturation risks making its outcome appear automatic. The term "acculturation" identifies a process of cultural mixing, but it does not, by itself, explain the actors, procedures, or authorities that put that mixing into effect.

Previous research has provided an important foundation. Musonnif (2016) examines Sultan Agung's calendar through the lens of legal politics and the ruler's policies. In a different study, Musonnif

(2017) shows that Serat Widya Pradhana, associated with Ronggowarsito, presents a calendar genealogy that differs from the popular attribution to Sultan Agung: the text links it to Sunan Giri II. Mahmudah and Izzuddin (2023) further examine this divergence by analyzing the calculation systems and functions attributed to each version.

The remaining research gap is not identifying the calendar's creator based on a single narrative, but examining how different narratives authorize knowledge about time. When one account associates the reform with the ruler of Mataram and another links it to a religious figure from Giri, the difference concerns not only the initiator's name but also the source of legitimacy being foregrounded. Such an approach requires historiographical discipline: later narratives may reveal the concerns and language of legitimation prevalent when they were composed, without automatically constituting direct reports of events in 1633.

Meanwhile, literature on calendar practices in later court settings cautions against assuming a policy's scope was uniform or unchanging. Fikrah's (2024) study of Surakarta, for example, identifies the use of the Javanese Islamic calendar within the court and shows that practices for determining religious days did not match those outside it. Such material is relevant evidence of changes in function during the period studied, but it cannot be projected onto seventeenth-century Java. The temporal distance itself requires researchers to distinguish origins, transmission, and later uses.

This article explains and analyzes the relationship between calendar reform, competing origin narratives, and the negotiation of authority in seventeenth-century Java. It examines how changes in the calendar's structure can be interpreted as a reorganization of religious time; how the historiography of Sultan Agung and the genealogy of Sunan Giri provide different forms of legitimacy; and the extent to which the available material supports conclusions about calendar implementation and the formation of authority. The intended contribution is not a definitive judgment about who first created every component of the calendar, but a model for historical interpretation

that distinguishes technical change, claims of authorship, and evidence of social acceptance.

THEORY AND RESEARCH METHODS

Conceptual Framework of Calendrical Authority

This article uses calendrical authority as an analytical tool to explain the relationship between time regulation, legitimacy formation, and socio-religious dynamics in the Mataram calendrical reform. The concept rests on the idea that a calendar functions not only as an instrument for calculating time, but also as a source of authority to determine, implement, and maintain a calendrical system in social life. In this study, calendrical authority is understood as the capacity of actors, institutions, or knowledge traditions to secure recognition for rules that govern time determination and their use in political, religious, and social life.

Operationally, the concept of calendrical authority is analyzed through three interrelated dimensions. First, epistemic authority refers to the legitimacy attached to actors, texts, or scholarly traditions regarded as capable of explaining and establishing calendrical rules. This dimension examines the knowledge base underlying the calendar system and how historical literature represents that knowledge. Second, institutional authority concerns the relationship between calendar regulation and institutions with political or religious power, including the kingdom and scholarly religious circles. This dimension examines how implementing a calendrical system relates to institutional legitimacy and the regulation of collective life. Third, social authority refers to the degree to which society accepts, uses, adapts, and continues calendrical practices. This dimension enables analysis of the relationship between calendar reform and pre-existing timekeeping traditions.

The three dimensions proposed in this concept are not treated as wholly separate categories, but as interrelated aspects in the formation of calendrical authority. Knowledge of time-governing rules may gain legitimacy through institutional support, while its application in society may strengthen, renegotiate, or limit that authority's

influence. Within this framework, the Mataram calendrical reform is examined not only as a change in the system of time calculation, but also as an issue involving the legitimacy of knowledge, institutional power, and the continuity of social practices, in line with the conceptual readings offered by Ricklefs (1998, 2008) and Pigeaud and de Graaf (1976) on calendar reform and history.

Research Method

This article uses a historical method and a critical literature review to examine the Mataram calendrical reform in the context of seventeenth-century Javanese Islamic historiography. The research follows four stages: heuristics, source criticism, interpretation, and historiography. Because the study relies on a literature review, the analysis focuses primarily on prior research on the Javanese-Islamic calendar system, genealogical traditions, and the dynamics of Islamization in Javanese culture.

The first stage, heuristics, involved locating and identifying literature relevant to the research focus. Key sources for this literature review include studies by Musonnif (2016, 2017), Mahmudah and Izzuddin (2023), and Ricklefs (1998, 2014). These works were selected for their relevance to the Mataram calendar reform, the construction of Javanese Islamic history, and the development of Mataram's intellectual traditions and royal politics. In this study, these works serve as secondary sources. *This study treats Serat Widya Pradhana as an object of historiographical discussion, drawing on* the information and interpretations available in previous research. This study does not directly examine the original manuscript or a primary textual edition of *Serat Widya Pradhana*. Accordingly, the discussion of the text is limited to analyzing the representations and interpretations presented in secondary literature.

The second stage, source criticism, involved external and internal evaluation of the literature used. External criticism examined authorship, publication year, publication type, and the sources' relevance and academic standing in the study of Javanese history. Internal criticism examined the arguments, evidentiary bases, consistency of explanations, and possible differences in interpretation

among previous studies. This process involved comparative reading to identify agreements and contradictions in views of the Mataram calendrical reform and genealogical narratives of Javanese Islam. Thus, source criticism in this study involves evaluating secondary sources, rather than philological criticism, manuscript authentication, or direct examination of seventeenth-century primary sources.

The third stage, interpretation, connected and interpreted findings from various works in light of seventeenth-century Mataram's social, political, and religious context. The analysis seeks to understand calendrical reform not merely as a technical change to a calendar system, but also as a historical phenomenon related to Islamization, royal political authority, and the formation of cultural legitimacy. At this stage, the study critically compares differences among researchers' views to distinguish relatively agreed-upon historical information from contested interpretations.

The fourth stage, historiography, involved constructing a systematic, chronological, and thematic historical synthesis based on evaluating and interpreting the literature. The discussion focuses on the relationship between the Mataram calendrical reform, the development of Javanese Islamic historiography, and the construction of political legitimacy through genealogical traditions. The synthesis accounts for the historical context and the limitations of the available evidence, and therefore does not treat interpretations in secondary research as directly verified historical facts.

The main limitation of this study is that it does not directly examine manuscripts or critical editions of primary sources, particularly *Serat Widya Pradhana*. Consequently, its conclusions are interpretive and historiographical, based on a critical synthesis of secondary literature rather than textual or philological verification of the original manuscript.

DISCUSSION

The Calendar as a Question in the History of Knowledge

Technically, a calendar organizes time through relationships among units of days, months, years, and additional cycles. However, this

mode of organization never exists outside social language. The change of year reorients chronological reference; month names connect calculation with collective memory; and the pasaran cycle organizes market rhythms and customs for determining days. Therefore, assessing the reform of the Javanese Islamic calendar cannot rest solely on whether the new calculation more closely resembles a particular calendar. It must also be considered in terms of which elements a royal order deemed retainable as it increasingly expressed itself through Islamic idioms.

Javanese traditions involving the Saka calendar and various cycles used in Javanese society provide the background to this process. Conventional historiography links Saka year reckoning to an Indian inheritance, while Javanese society also used the pasaran and pawukon cycles. These two forms of calendrical reckoning are not identical: the calendar year provides a long-term chronology, while recurring cycles can continue to mark combinations of days and pasaran days. Thus, retaining the pasaran cycle does not mean preserving every older principle, and adopting Islamic months does not in itself eliminate a cyclical understanding of life (Musonnif, 2016).

The shift toward lunar reckoning had important implications. A year based on lunar months does not follow the seasons the same way a year tied to the solar cycle does. A change in the basis of calculation therefore affects the relationship between religious commemorations, chronological years, and seasonal activities. However, a lunar system must be distinguished from an astronomical procedure that always involves observing the crescent moon. Studies of the Javanese Islamic calendar instead discuss arithmetic calculation, or hisab urfi, in which month lengths are determined through a numerical pattern. Equating all lunar calendar practices with direct astronomical observation would erase important distinctions in the history of Islamic astronomy (Mahmudah & Izzuddin, 2023).

The continuity of Javanese year numbering is a particularly important example. Changing the basis of calculation without restarting the year count from one could preserve a sense of historical continuity. However, the political meaning of this choice should not be

inferred from its symbolic appearance alone. The argument that continuity in year numbering helped avoid a rupture with Javanese memory is plausible, whereas the conclusion that all inhabitants understood it the same way would require evidence of acceptance across social groups. The calendar's structure therefore indicates a possible strategy of legitimation, not automatic proof of its success.

Month names reveal a similar negotiation. Muharram is known as *Sura*, Ramadan as *Pasa*, and Shawwal as *Sawal*, while several other names have also been adapted in pronunciation. Linguistic change is not merely a reproduction of sounds; it lets religious terms enter everyday conversation. However, etymological relationships and ritual meanings do not always correspond. The name *Sura*, for example, must be distinguished from the later development of Sura-night ceremonies. Evidence that a particular name was in use does not automatically demonstrate that all the ritual forms now associated with it were already practiced in the seventeenth century.

The five-day pasaran cycle and the seven-day week provide another example of a layered system's continuity. The two cycles can intersect on a single date without either canceling out the other. This helps explain why total replacement is an inadequate category for the Javanese case. However, describing the outcome as a compromise does not mean that the compromise was peaceful or equal for all actors. The term "negotiation" indicates the reorganization of relationships among elements that previously had different contexts of use. The specific social mechanisms involved remain an open question.

From the perspective of the history of knowledge, this combination offers a methodological lesson: a new system may be accepted through the reorganization of rules, labels, and the authority governing its use. Its similarities to the Hijri calendar matter, but the Javanese Islamic calendar also has its own rules and cycles, so it would be unwise to treat the two as identical for every date and period. Later empirical research on calendar alignment in Surakarta shows that the functions and outcomes of date determination may differ (Fikrah, 2024). These later findings do not explain the mechanisms of

1633, but they underscore the need to distinguish a system from its practice.

Sultan Agung and the Formation of Calendrical Authority

Sultan Agung ruled Mataram in the first half of the seventeenth century, when territorial expansion, the strengthening of royal symbols, and the development of Islamic idioms were interconnected. Ricklefs's (1998) study of Sultan Agung's long shadow provides context for examining traditions that portray him as a Muslim ruler. This portrayal should not be reduced to two alternatives: a ruler who completely abandoned the past or one who merely preserved pre-Islamic traditions. In court society, religious claims could operate alongside the language of royal grandeur and familiar symbolic practices.

The calendar reform associated with the year 1633 is relevant here. Establishing rules for time opened the possibility of synchronizing Islamic commemorations with calendrical cycles familiar to users of the Javanese calendar. However, the commonly cited date of the reform must be distinguished from the narratives that give it meaning. Chronology records when a rule began; stories of pilgrimage, a saint's command, or a particular purpose belong to historiography that interprets the decision. Without verification from contemporary sources, these stories cannot be treated as minutes or records of royal policy.

Musonnif (2016) has interpreted the calendar as part of the ruler's policy and the relationship between politics and law. This contribution is important, but it also sets a boundary for this article's claim to novelty. The relationship between calendars and politics is not first proposed here. Instead, this study shifts the question toward how that authority is narrated and linked to different figures. In other words, the reform can be understood both as a procedure for regulating time and as an object of historical memory that was subsequently contested.

In the first interpretation, the royal decision connects calendrical reckoning to the center of power. The king may appear as

the figure who establishes symbolic compatibility between Javanese traditions of governance and Islamic expression. However, a policy does not automatically change everyone's habits. To determine how widely the royal calendar was followed in villages, among merchants, in pesantren, or in territories newly brought under Mataram, research would require letters, local chronicles, transaction records, or dated manuscripts from various places. The material used in this article is insufficient to conclude that comprehensive standardization occurred.

A second interpretation suggests that the continued use of year numbering allowed a new identity to emerge without being presented as an absolute break with the past. Overall, this aligns with Ricklefs's (2006, 2014) attention to the history of relations between Islam and Javanese culture as they changed from one period to another. However, Ricklefs's broad framework does not by itself prove Sultan Agung's specific administrative intentions. It provides an interpretive context, while evidence of motive must be sought in materials more closely connected to the policy itself.

Questions of authority also concern the presence of calendrical experts. Establishing months and years requires knowledge of calculation rules, while ritual use requires religious recognition. Research that positions the king as the sole initiator tends to obscure the possibility that various intermediaries transmitted calendrical knowledge. Conversely, attributing the entire process to networks of religious scholars without contemporary manuscript evidence is also unwarranted. Given the limited sources, the defensible position is that coordination between royal legitimacy and calendrical expertise was an issue, rather than that a definitive list of participants can be established.

Calendrical authority, therefore, is not a seamless unity. It is better understood as a relationship among the knowledge that makes a system calculable, the power that enables its results to be announced, and the customs through which it is used. These three levels may converge in a single policy, but they need not be identical. This distinction helps explain why a calendar may acquire strong symbolic status even as its implementation changes over time.

Historiographical Contestation: Sultan Agung and Sunan Giri

This article discusses Sultan Agung and Sunan Giri within a framework of historiographical contestation, that is, differing representations and interpretations of religious authority and calendrical legitimacy in the Javanese historical-writing tradition. The term "contestation" does not imply direct competition between the two figures over establishing the calendar system; rather, it describes differing constructions of authority in historiographical narratives. The analysis of *Serat Widya Pradhana* is conducted indirectly through a critical reading of Musonnif (2016, 2017) and Mahmudah and Izzuddin (2023), without directly examining the manuscript or a primary textual edition. Accordingly, this discussion compares representations and interpretations in previous research; it does not verify the text of *Serat Widya Pradhana* or establish that Sultan Agung and Sunan Giri engaged in direct historical contestation.

The historiographical problem becomes clear when the calendar's origin is presented in more than one narrative. Musonnif (2017) shows that the text of Serat Widya Pradhana, as he reads it, does not attribute the formation of the Javanese Islamic calendar to Sultan Agung, but instead to Sunan Giri II. Mahmudah and Izzuddin (2023) further examine the differences between these two accounts in terms of calculation and function. This finding shifts the inquiry. Rather than immediately deciding which account is entirely correct based on one narrative, researchers need to examine each text's position, the period in which it was written, and the form of authority placed at the center of the story.

The account associated with Sultan Agung presents the royal center as the source of calendrical organization. The ruler stands between the needs of governance and Mataram's Islamic identity. In such a narrative, time is imagined as something that can be organized through political decisions with religious implications. This, however, is an interpretation of the narrative's function, not a conclusion that its author consciously intended to exclude all other

religious figures. Establishing the author's intentions would require a full reading of the text and an examination of its transmission history.

By contrast, the attribution to Sunan Giri II foregrounds a figure remembered for religious authority. This shift in focus suggests that the genealogy offers another way to legitimize the Javanese Islamic calendar. However, the connection between a narrative figure and a factual action must be tested separately. A serat written or redacted later may show how its author's generation understood the past without directly proving who established the formula later known as the Sultan Agungan calendar. This is why "contestation" in the article's title refers to competition between representations, not to a dispute demonstrably conducted as an open debate in 1633.

This requires distinguishing three forms of historical time. First is the time of the event being narrated, the period that sets the story. Second is the time when the source was written or compiled, when the author selected particular figures and causal relationships. Third is the time of modern interpretation, when researchers compare the narratives. If these three are conflated, readers may misread questions of historical memory as disagreements between eyewitnesses. Reading Serat Widya Pradhana alongside historical studies of Mataram therefore requires criticism of the text's genre and function, not merely a comparison of names (Musonnif, 2017).

The differing genealogies also remind us that the "origin of the calendar" was not necessarily a single event. A system may have a history of its constituent elements, the codification of its rules, its naming, and its establishment as an institutional reference. The difference between a figure associated with introducing an element and one associated with reorganizing the system need not be resolved by treating the two claims as entirely mutually exclusive. Nevertheless, we must not invent a factual compromise without sources. In this study, we use this possibility only to show the need to unpack the meaning of "creation" in each text.

Mahmudah and Izzuddin's (2023) study matters because it shifts the discussion from naming figures to the nature of the calculations and their purposes. Methodologically, historians must

examine whether two different texts actually discuss the same object. Calendars with similar names do not necessarily reflect the same set of rules in every period. Variations in formulas, patterns of use, and later standardization may create the impression that a single calendar had multiple inventors. Describing this as a layered history is more precise than imposing a single narrative.

Historiographical contestation thus contributes substantively to the study of Islam in Java. Narratives centered on the kingdom and narratives centered on religious figures may both connect the calendar with Islam, but they use different pathways of legitimation. This finding helps explain why calendrical systems sit at the intersection of political and religious history. Remaining questions include when these versions circulated, whom they addressed, and how the texts related to one another. This article lacks sufficient evidence to establish a precise chronology for the transmission of the manuscript versions.

Thus, the contestation between the authority of Sultan Agung and that of Sunan Giri is understood here as a question of historiographical representation, not as evidence of direct historical competition. Because this reading of Serat Widya Pradhana relies on secondary research, the conclusions are interpretive and remain open to reassessment through direct examination of the manuscript or a critical edition in future research.

Islamization of Time as Negotiation Rather than Erasure

The term "Islamization of time" indicates that calendar reform can shift naming conventions and the relationship between temporal cycles and religious practices. This does not mean that Javanese society was unfamiliar with Islamic time before the reform. Muslim networks and ritual needs were already present before Sultan Agung. His reform is better understood as a stage in reorganizing relationships between systems, rather than the starting point of Islam's arrival in Javanese experiences of time.

The shift from a Saka-based calendar to a lunar year made it possible to align the sequence of Javanese months with Islamic

months. However, retaining inherited year numbering shows that a new chronological conception could be built through continuity rather than mere replacement. This combination challenges models of Islamization that require every earlier cultural marker to disappear. In the broader historical context, Ricklefs (1998, 2006) emphasizes the importance of examining historical interactions between Islam and Javanese traditions without assuming their relationship remained the same across all periods.

Negotiation here does not mean that all the elements brought together had equal status. In one context, religious months could serve as references for Islamic rites; in another, the pasaran cycle remained significant for social activities. A calendar can accommodate different needs because its various units of time do not have to serve the same function. Research that measures only "the percentage of Islamic elements" and "the percentage of Javanese elements" would overlook which practices each element regulates. What matters is not composition alone, but the allocation of functions.

Caution is needed when linking calendrical systems to syncretism. Musonnif (2016) uses political relations and Islamic-Javanese syncretism to interpret calendar policy. This term is useful within one interpretive tradition, but researchers need to explain what actually mixed: units of time, calculation methods, month names, royal symbols, or ritual practices. Similarities in calendrical form do not prove that users shared a uniform theology. Likewise, using the term "Islamic" in a calendar's name does not automatically indicate the level of religious observance among the groups that used it.

The continuity of the pasaran cycle illustrates the limits of change. Introducing a lunar year did not eliminate the need to mark days through a five-day cycle. The seven-day week and the pasaran cycle operated together, allowing a date to accommodate more than one system of identification. This structure allowed local timekeeping traditions to remain in use even as the annual system changed. However, we cannot conclude that all social groups underwent the same negotiation. The social distribution of calendar use is an empirical question requiring evidence from settings beyond the palace.

The concept of calendrical authority helps specify this negotiation. At the knowledge level, the issue is which basis of calculation is considered valid. At the institutional level, the issue is which party has the authority to establish or publish the result. At the social level, the issues are acceptance, use, and possible variation. The relationships among these three levels provide a model that can be tested as more complete sources become available. In this article, the literature primarily supports analysis of the first two levels, while the social level can be demonstrated only indirectly and for a later period.

This interpretation also avoids using "Islamization" as a teleological category, as though change necessarily moved toward a single final form. The Javanese Islamic calendar need not be understood as a transitional stage leading to the replacement of the entire Javanese calendar by the Hijri calendar. Instead, it can be read as a long-term configuration with its own rules and authority. Later changes in its court function show that the relationship between the calendar and the requirements of worship could continue to be renegotiated. However, this evidence comes from a much later period (Fikrah, 2024).

Authority, Social Practice, and the Limits of the Reform's Reach

Many popular narratives assume calendar reform immediately unified Mataram society. This claim is an interesting hypothesis in political history, but it requires further elaboration. Using the same calendar at the center of power does not imply uniform use across all territories, where economic networks, local customs, and religious institutions differed. The success of temporal regulation cannot be determined solely from accounts of the founder's intentions.

Sources needed to test the reform's reach include dated administrative records, dates recorded in local manuscripts, transaction documents, correspondence between rulers, and ritual sources from different communities. Such sources would let historians compare whether the royal calendar was used consistently, used alongside other systems, or absent from certain activities. Without this

evidence, the statement "the calendar united the entire population" would be better replaced with "the calendar offered a shared symbol and a possible means of coordination." This difference in wording is not merely stylistic; it concerns the degree of certainty that can be claimed.

Contemporary research also reminds us that a single calendar name may refer to different functions. Fikrah (2024) documents the calendar's use in the Surakarta Sunanate and contrasts it with practices for determining religious days outside the court. Research on Yogyakarta likewise shows that customary and devotional functions can change. These data should not be treated as a direct reflection of the seventeenth century. However, they help formulate a diachronic question: how has the authority of the royal calendar endured as a cultural identity even as the references used to determine days of worship have changed?

In an analysis of authority, a symbol's continuity is not identical to the continuity of all its technical functions. A calendar may remain important for ceremonies, identity, and royal memory, while communities use other rules to determine particular dates of worship. This is not a contradiction to be eliminated, but a possibility: epistemic, institutional, and social authority have different histories of change. This framework opens up opportunities for further research that carefully compares court sources with social practices.

Social representativeness is another issue. Court historiography tends to be closely connected to the elites who produced or preserved texts. Narratives of royal decisions are easier to find than accounts of the responses of farmers, merchants, or religious teachers outside the center. The absence of these voices should not automatically be interpreted as acceptance. Silence in the sources reflects an archival limitation, not positive evidence of social consent. For this reason, the article limits its conclusions to the possible historical significance of the calendar's configuration and competing narratives, rather than offering a measurable assessment of the reform's success.

Ultimately, calendrical authority is more productively understood as a process than as a quality acquired once and for all. Rules must be taught, recorded, and used. People must recognize the authority to announce them in particular contexts. Their religious significance may grow, diminish, or change across institutions and periods. This process-oriented framework brings the history of knowledge into conversation with the history of Islam without reducing either to a story of technical progress or of singular political domination.

Hisab Urfi, the Hijri Calendar, and the Problem of Anachronism

Studies of calendrical calculation show why historical conclusions should not be based on the labels "Islamic" or "Javanese" without explaining the operational rules involved. Sholehuddin and Qulub (2022) examine how the Javanese Islamic calendar aligns with the Hijri calendar and note its use of the hisab urfi system. This helps explain how a calendar can operate through particular arithmetic rules. It also shows that the ideal alignment sought in one period is not the same as date-by-date equivalence throughout history. Without this distinction, the statement "adopting the Hijri calendar" may be mistakenly understood to mean using identical astronomical procedures in every situation.

In an arithmetic system, rules governing month lengths and year patterns estimate the sequence of dates. When determining the beginning of a Hijri month, discussions distinguish between calculation, observation, and institutional decisions. Ramadhan, Izzuddin, and Mahsun (2023) discuss Aboge as part of a debate about the alignment of arithmetic calendrical reckoning with contemporary requirements for determining dates of worship. Their article cannot establish how ritual decisions were made in 1633. However, it shows that the same calendar term may be evaluated differently depending on its context. Historical research should not turn modern normative debates into evidence of beliefs and procedures in the seventeenth century.

At least three types of accuracy are often confused. Internal accuracy means that a date is consistent with an agreed calendar formula. Astronomical accuracy means the formula's result matches the configuration of celestial bodies at a particular time. Institutional accuracy means that a date is accepted as an applicable decision within an institution. These types may be related, but they are distinct objects of historical inquiry. A calendar may be arithmetically consistent, differ from a particular observation, and remain in ceremonial use. Evaluating a historical calendar solely by current standards of astronomical accuracy would overlook questions of function and authority.

This distinction is important when discussing the relationship between the Sultan Agungan calendar and Islamization. Islamization need not be demonstrated by claiming that every date produced by a local calendar always matches later decisions about days of worship. What needs examination is how the calendar was organized within an Islamic symbolic and social framework and how the system interacted with earlier customs. Whether a method is suitable for determining dates of worship in the twenty-first century is a different question from why a historical rule was selected and legitimized in the seventeenth century. The two questions can inform one another, but their evidence and standards of evaluation are not identical.

This epistemic distance also helps in interpreting conflicting origin narratives. If one text attributes the calendar to Sunan Giri II and another to Sultan Agung, readers should not immediately assume that both texts refer to a single mathematical formula that can be compared solely by its starting year. Objects given similar names may have followed different rules or served different functions over time, but manuscripts must demonstrate this rather than speculation. Mahmudah and Izzuddin's (2023) study provides a reason to examine differences in calculation carefully rather than resolve them through a single-founder narrative.

The debate over hisab urfi offers an additional conceptual lesson: cultural continuity can persist at the level of naming and institutions even when calculation procedures or uses change.

Conversely, similarity in procedure does not guarantee similarity in religious or political meaning. The theory of calendrical authority therefore requires the three layers of evidence proposed in this article. Records of formulas are needed for the history of knowledge; decrees or official traditions are needed for institutional history; and records of use are needed for social history. Relying on one layer of evidence as representative of the entire history would produce overly broad conclusions.

Research across different periods must also account for changes in terminology. The terms "Javanese Islamic calendar," "Sultan Agungan calendar," and "Aboge" may have different referential boundaries in scholarly writing and among user communities. Historians need to clarify what each term means in each section and should not assume that one name automatically refers to an identical set of practices. In this article, "Javanese Islamic calendar" is a general category in the literature for the conjunction of the Javanese-Saka structure and Islamic lunar reckoning. In contrast, scholars use "Sultan Agung" when a source specifically links the system to Sultan Agung's policy.

The historical implication is that calendrical calculation cannot be separated from source criticism. Even an apparently objective number requires information about who recorded it, when it was recorded, and which system was used. When a manuscript mentions a particular Javanese year, converting it to the Common Era requires checking the relevant cycle version and rules; using the wrong formula can produce an incorrect chronology. Historical studies that treat the technical issue as settled merely by using the word "lunar" risk overlooking this variation. Collaboration with scholars of Islamic astronomy is therefore necessary, but historical arguments still require criticism of documents' origins and functions.

When research findings are presented in an international language, the phrase "Islamic lunar calendar" must also be used precisely. It may refer to the general principle of a year based on lunar months, a particular Hijri calendar, or a local system that adopts similar principles. An operational definition must be provided so that

readers do not assume that the Javanese Islamic calendar is entirely identical to the modern Hijri system. This explanation is not merely a technical detail; it directly determines whether arguments about Islamization and authority are based on a clearly defined historical object.

Historiographical Implications and Directions for Further Research

The discussion yields three implications. First, the history of calendars must distinguish technical change from claims about creators and policy objectives. A comparison of formulas does not, by itself, establish the identity of their authors. Second, historiography does not merely provide information; it can also construct the legitimation of the past. The differing attributions to Sultan Agung and Sunan Giri II are therefore significant as a problem in the production of history. Third, we cannot assume a calendar's function remained constant from the time of reform to its contemporary use.

The most urgent next step is philological work on Serat Widya Pradhana and other relevant calendar manuscripts. Researchers need to document textual witnesses, storage locations, materials, colophons, copying dates, and textual variants before using a single version to infer an author's views. The same title in secondary studies does not guarantee that all studies draw on identical textual witnesses. Collation among witnesses would allow us to reassess differences that now appear to be conflicts between historical figures in light of the manuscript transmission history.

The next step would be to search for contemporary evidence, or evidence close in time to the reform. Correspondence archives, court records, manuscript-dating conventions, or diplomatic evidence may provide data that differ from what appears in chronicles. The current absence of such evidence leaves the relationship between royal standardization and practices outside the court unresolved. Researchers must also consider that adopting a new calendar does not always produce documents that are easily distinguished from those using the old system.

Alternative Readings and Testing the Argument

The Mataram calendrical reform can be understood through two alternative interpretations. First, the calendar change may have been driven primarily by practical needs to harmonize timekeeping for ritual and administrative activities, without requiring the assumption of a dominant political agenda. Second, differing narratives about Sultan Agung and Sunan Giri may reflect variations in historiographical and literary traditions rather than direct political competition in the seventeenth century. Both possibilities suggest that the relationship between calendrical reform and the legitimation of power must be interpreted cautiously, based on the available historical evidence.

In this context, the concept of *calendrical authority* examines the relationship among calendrical knowledge, institutional endorsement, and social acceptance, without assuming that every calendar change was a political strategy. Attributing authority to a king or religious scholar in a historiographical narrative does not, by itself, prove that a policy was implemented or accepted by society. Supporting or limiting this interpretation requires additional evidence, such as decision documents, records of calendar use, and the history of manuscript copying and circulation. The interpretation proposed here therefore remains open to new historical findings that may strengthen, revise, or limit explanations of the relationship between calendrical reform and the formation of authority in Mataram.

CONCLUSION

This article shows that the Javanese-Islamic calendar reform associated with Sultan Agung is a historical phenomenon that must be understood through the relationship between changes in the calendrical system, historiographical construction, and the formation of authority. At the system level, the use of lunar reckoning alongside continuity in year numbering and Javanese temporal cycles reveals a process of adjustment between Islamic calendrical elements and local traditions. This change cannot be understood simply as replacing an older system, but as a reorganization of timekeeping that retained several earlier elements. The findings highlight the importance of

distinguishing technical calendar changes from the political and religious meanings later attached to it.

At the historiographical level, the differing attributions to Sultan Agung and Sunan Giri II show that the origins of the Javanese-Islamic calendar concern not only chronology, but also the construction of legitimacy in historical writing. These differences reflect diverse representations of the source of calendrical authority, without necessarily constituting evidence of direct political competition between the two figures. The relationship between calendar reform and the legitimation of power must therefore be considered within the limits of what the available historical information can substantiate.

This study's main contribution is to develop the concept of *calendrical authority* as an analytical framework connecting three dimensions: epistemic authority, institutional authority, and social authority. This framework allows calendar reform to be examined not only through changes in calculation rules, but also through representations of authority and the possibility of social acceptance. However, these three dimensions cannot be assumed to have operated simultaneously in every case or to demonstrate a causal relationship.

Because this article draws on secondary literature and does not directly examine Serat Widya Pradhana's manuscript, its conclusions are interpretive and historiographical. Future research should therefore prioritize examining primary sources, the history of manuscript copying, institutional documents, and evidence of calendar use in social life. Such an approach is needed to further test the relationship between changes in calendrical systems, the legitimation of authority, and social practices in seventeenth-century Java.

REFERENCES

Adam, B. (1990). *Time and social theory*. Polity Press.

Adhellia, S. D. F. (2025). Utilization of the Javanese Islamic calendar system for determining auspicious days: A case study of wedding traditions in Jombang, East Java. *Al-Hisab: Journal*

of Islamic Astronomy. https://jurnal.umsu.ac.id/index.php/alhisab/article/view/21792

Aveni, A. F. (2002). *Empires of time: Calendars, clocks, and cultures* (Rev. ed.). University Press of Colorado.

Fikrah, A. Z. (2024). *Implementasi kalender Jawa Islam di Keraton Kasunanan Surakarta Hadiningrat* [Tesis magister, Universitas Islam Negeri Walisongo Semarang]. https://eprints.walisongo.ac.id/id/eprint/29616/

Florida, N. K. (1995). *Writing the past, inscribing the future: History as prophecy in colonial Java*. Duke University Press. https://doi.org/10.1215/9780822378662

Mahmudah, Y. N., & Izzuddin, A. (2023). Kalender Jawa Islam menurut Ronggowasito dalam Serat Widya Pradhana. *Al-Afaq: Jurnal Ilmu Falak dan Astronomi, 5*(1). https://doi.org/10.20414/afaq.v5i1.6937

Musonnif, A. (2016). Politik hukum dalam perumusan kalender Islam (Studi tentang kebijakan kalender Nabi Muhammad SAW di Jazirah Arab dan kalender Sultan Agung di tanah Jawa). *Ahkam: Jurnal Hukum Islam, 4*(1), 1–22. https://doi.org/10.21274/ahkam.2016.4.1.1-22

Musonnif, A. (2017). Genealogi kalender Islam Jawa menurut Ronggo Warsito: Sebuah komentar atas sejarah kalender dalam Serat Widya Pradhana. *Kontemplasi: Jurnal Ilmu-Ilmu Ushuluddin, 5*(2), 329–355. https://doi.org/10.21274/kontem.2017.5.2.329-355

Pigeaud, T. G. T. (1967). *Literature of Java: Catalogue raisonné of Javanese manuscripts in the library of the University of Leiden and other public collections in the Netherlands* (Vol. 1). Martinus Nijhoff.

Pigeaud, T. G. T., & de Graaf, H. J. (1976). *Islamic states in Java 1500–1700: Eight Dutch books and articles by Dr. H. J. de Graaf*. Martinus Nijhoff. https://doi.org/10.1007/978-94-015-7187-6

Ramadhan, R., Izzuddin, A., & Mahsun. (2023). Aboge sebagai siklus awal tahun menyalahi sunnatullah. *Al-Afaq: Jurnal Ilmu Falak dan Astronomi, 5*(1). https://doi.org/10.20414/afaq.v5i1.7003

Ricklefs, M. C. (1998). Islamising Java: The long shadow of Sultan Agung. *Archipel, 56*(1), 469–482. https://doi.org/10.3406/arch.1998.3503

Ricklefs, M. C. (2006). *Mystic synthesis in Java: A history of Islamization from the fourteenth to the early nineteenth centuries*. EastBridge.

Ricklefs, M. C. (2008). *A history of modern Indonesia since c. 1200* (4th ed.). Stanford University Press.

Ricklefs, M. C. (2014). Rediscovering Islam in Javanese history. *Studia Islamika, 21*(3), 397–418. https://doi.org/10.15408/sdi.v21i3.1216

Sholehuddin, M., & Qulub, S. T. (2022). Analisis kesesuaian kalender Jawa Islam dengan kalender Hijriyah. *Al-Afaq: Jurnal Ilmu Falak dan Astronomi, 4*(1). https://doi.org/10.20414/afaq.v4i1.4198

Zerubavel, E. (1981). *Hidden rhythms: Schedules and calendars in social life*. University of Chicago Press.