



STUDY OF ISLAMIC ASTRONOMICS: METHODS AND CRITERIA OF RUKYAT HISAB DETERMINING THE BEGINNING OF THE MONTH IN LIBYA

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Abstract: Hisab and Rukyat as two methods of determining the beginning of the month of the Islamic calendar, where the result of the determination will be the Hijri or Qamariyah calendar. Often differences of opinion and determination regarding the determination of the beginning of the month of Qamariyah often occur in various countries, due to differences in latitude and longitude, weather conditions, provisions of government authority, up to the agreement on the criteria for the new moon. It is quite unsurprising that polemics often occur and can be used as a lesson by examining more deeply the criteria for the new moon and the methods used by each country and in correlation with the provisions of other countries with a fairly close regional zone. issues that have reached the realm of ijtimahi, because each country has its own rules and regulations. *Libyan Center for Remote Sensing and Space Science* (LCRSSS) which is dedicated to research on remote sensing, outer space, and earthquake science which to date has provided more than 5 research stations. The Libyan state determines the beginning of the month of Ramadan, Shawwal and Dzulhijjah with reference to the astronomical aspects of the occurrence of the new moon, namely the conjunction (ijtimak) before dawn which is carried out through a government research organization (LCRSSS).

Keywords: Hisab, Rukyah, Libya

1. INTRODUCTION

The determination of the beginning of the Islamic month, both Qamariyah and Hijriyah, has often occurred in various countries, be it neighboring countries that are quite close to their territory or countries that are far away. the differences in each of these countries always raise concerns and doubts as well as restlessness on the part of falakiyah academics and researchers of Islamic astronomy, when entering these months. Because there are often differences that can occur for several reasons which are indeed quite logical, starting from the results of differences in latitude and longitude, weather conditions, provisions of government authority, to agreement on new moon criteria. It is quite unsurprising that polemics often occur and can be used as a lesson by examining more deeply the criteria for the new moon and the methods used by each country and in correlation with the provisions of other countries with a fairly close regional zone. issues that have reached the realm of ijtimahi, because each country has its own rules and regulations. One of the interesting things is from the country of Libya, which from an astronomical point of view, this country is quite developed with the evidence that it has *Libyan Center for Remote Sensing and Space Science* (LCRSSS), so that from this case study the author's interest in making a paper that discusses this matter.

2. METHOD

This type of research method used by using analysis based on the method Historically by making a reconstruction of the past, the methods and criteria for the new moon in Libya in an objective and systematic way. Then by method Descriptive by compiling it with an accurate, factual, and systematic description of certain facts. So that it can be pulled pits development from time to time with the method of development to investigate sequences and patterns of growth or change. So that a study can be carried out to see the level of correlation between the variation of one factor and the variation of other factors based on the correlation coefficient.

3. ANALYSIS OF STUDY FINDINGS

3.1 Geographic-Astronomical Conditions



Libya is a country in the North African region which is bordered by the Mediterranean Sea (north), Egypt (east), Sudan (southeast), Chad and Nigeria (south), and Algeria and Tunisia (west). Meanwhile, from an astronomical perspective, Libya is located at coordinates 19° North Latitude to 34° North Latitude and 9° East Longitude to 26° East Longitude.



The area of the country of Libya reaches around 1,775,500 km² while the coastline of Libya is known to be 1,770 kilometers long and is the longest coastline in an African country. The climate of the country of Libya itself is dominated by a very dry climate like a desert, but its northern coast has a warmer Mediterranean climate characteristic.

3.2 Monographic Conditions

Its government is based on a socialist republic led by a head of state, namely the Head of the Presidential Council. When viewed in terms of population, Libya is a fairly large country but with a small population of around 6.7 million people. About 88% of the population resides in urban areas, especially in the cities of Tripoli, Benghazi, and Misrata. The majority of the population in Libya identify as Arabs who speak and culture Arabic, the language itself is (official) Arabic, but English, Italian, and Berber are also widely spoken (Fahrullah, nd, p. 57). Indigenous people of Libya Most come from various ethnic groups and most of the Libyan population is Muslim of mixed Arab descent, therefore about 97% of the population in Libya are Muslim and other religions (3%). The culture of the Libyan people itself is a mixture of various other countries in the world, due to exposure to many historical eras. Libyan culture involves roots in Berber, African, Turkish and Muslim cultures. Libya was also part of the Italian colony for about three decades, so Libyan culture is also influenced by Italian culture.

Libya's population is of Arab and Barbarian origin, there are also Italian, Greek and Maltese descent. The Libyan state currency itself is in the form of the Libyan Dinar (LD). For their livelihood, the Libyan people in the village are livestock herders, namely camels and other domesticated animals (Wargadinata, et al., p. 97-98). While in the city, namely in oil refinery factories, industry and offices. According to historical records, the Barbarian tribe was the forerunner to the birth of the Bedouin tribe in Libya. Even before the Arabs settled in Libya, the Barbarians had already occupied the country. This tribe is considered to be the original Libyan people who survived in a nomadic way. They are one of the inhabitants of a country where about 93 percent of the area is desert (Wargadinata, et al., p. 97-98).

3.4 Libyan Economy.

Before the discovery of large oil fields in 1959, the income of the Libyan people per person was the lowest compared to the Role of Arabic in Education and Civilization | 60 people's income in other Arab countries. At that time the country's economic situation was very dependent on aid from Britain and America. Now oil has become the main source of income and is the main source of income for the State's finances. Crude oil production accounts for around 95% of all exports.

Libya has now become one of the world's largest oil producing countries. Even so, Libya is still an agricultural country because around 80% of the population are farmers and ranchers. The main types of crops they grow are vegetables, grains, dates, oranges, and olives. The oasis region in the south produces a wide variety of vegetables and fruits, but dates are the main source of income. Farmers cultivating newly cleared land receive assistance from the government in the form of interest-free credit, agricultural equipment, machinery and superior seeds. Since 1961 the



minister of agriculture has been trying to buy surplus people's crops such as wheat, barley, olive oil and peanuts at relatively higher prices than prices on world markets.

3.5 Political Order (State Form)

The Libyan state with the capital city of Tripoli has a form of state or government, which is called the provisional government, while the government system of the Libyan state is not explicitly explained. The Libyan state itself is led by a Head of the Presidential Council with a Head of Government called Pt. Prime Minister. Administratively, Libya has 22 district lists including: Niqat al-Khams, Zawiya, Jafara, Tripoli, Murqub, Misrata, Sirte, Benghazi, Marj, Jabal al-Akhdar, Derna, Tobruk, Nalut, Jabal al-Gharbi, Wadi al- Shatii, Jufra, al-Wahat, Ghat, Wadi al- Hayaa, Sabha, Murzuq, and Kufra.

3.6 Early Month Determination

According to its own historical records, the country of Libya has The Jamahiriya Islamic Calendar (AJ = Anno Jamahiriya) and The Jamahiriya Solar Calendar, both of which were introduced and used since the reign of Mu'ammara al-Qaddafi Libya. He uses this calendar to determine the beginning of the Hijri year. Previously, in 1980 the Libyan government also introduced The Jamahiriya Solar Calendar. This calendar system is almost the same as the Gregorian Gregorian calendar, in which the names of the months are changed and adapted to aspects of Libyan history and culture (Rahman, 2020, 122-123). Another historical record in the era of Mu'ammara al-Qazafiy used the lunar calendar, which counted the first year starting from the death of the Prophet Muhammad. in 632 AD This has sparked a strong reaction from some of the Muslim world's scholars' opinions because they are considered to have violated the consensus of the companions and the traditions of the Muslim community. After the Mu'ammara al-Qazafiy regime, the Libyan lunar calendar returned to the Hijri calendar.

Until during the era of the development of the country with a Muslim-majority country, it had its own determination of the beginning of the month for the unique Muslim community, especially the determination of the beginning of the month of Ramadan, Shawwal and Dzulhijjah. Where the government in this case has the authority to decide on the determination of the beginning of the month, where in 2008 a determination was made of the beginning of the month of Ramadan, Shawwal and Dzulhijjah with reference to the astronomical aspects of the occurrence of the new moon, namely the conjunction (ijtimak) before dawn (Rukhmadi, 2014 , p. 55). Which is done through research organizations from the government *Libyan Center for Remote Sensing and Space Science* (LCRSSS) which is dedicated to research on remote sensing, outer space, and earthquake science which to date has presented more than 5 research stations. The LCRSSS office itself is based in the Libyan city of Tripoli.

Based on the research process carried out by certain authorities the government refers to the astronomical aspect of the occurrence of the new moon, namely at conjunction (ijtimak) before dawn, where if the ijtimak has occurred before dawn, then the next day it is declared a new moon regardless of the height of the new moon above the horizon, whether the new moon is visible or not visible. So that in this case the determination of the new moon by Libya is at great risk, because it clearly ignores the sharia (fiqh) aspect. Even so, all Libyans always fast and celebrate Eid together. Many people have questioned and rejected Libya's attitude, one of them is Prof. Dr. Muhammad Ahmad Sulaiman (Professor of Astronomy at the Helwan National Institute of Astronomy and Geophysics Research – Egypt) because this determination was full of controversy in science and Shari'a (Aris, 2016, p. 93).

In its development, the Islamic calendar in Libya itself has its own provisions. The Libyan calendar uses true reckoning with ijtimak criteria before dawn in eastern Libya. So if in the eastern part of Libya there is ijtima before dawn, then all of Libya enters the new moon on that day and if in the east there is ijtima after dawn, then the beginning of the month starts at the next dawn (Budiwati, 2017, p. 122). This Libyan calendar also adheres to the notion that the beginning of the day begins at dawn, not at sunset as is used by the majority of Muslims. In the framework of globalization and internationalization of the calendar, the leaders decided to withdraw the headquarters of the eastern region of Libya to the easternmost headquarters of the world, namely Kiribati (Budiwati, 2017, p. 122). The formula for this calendar is:



- 1) If ijtimak occurs before dawn at Kiribati point then the whole world enters the new moon that day; And
- 2) If ijtima occurs after dawn in Kiribati, the current month is completed with 30 days and the new moon begins at the next dawn around the world.

3.7 Prayer Times

The Libyan state itself in determining the prayer times for each of its mosques on average uses the provisions of the Muslim World League (World Muslim League), the OIC (Organization of Islamic Cooperation), or institutions followed by the Libyan state where to find out the prayer times, you can This is done by accessing the website/android-based applications which can be installed and accessed via mobile phones by a wide range of people. The Libyan state has no official provisions regarding the criteria for starting prayer times from its government, but there mosques can have their own provisions according to the region in each region in Libya itself. For the country of Egypt, several African countries in this case including the country of Libya as well, Syria.

3.8 Analysis

The era of development of the country with a Muslim-majority country has its own determination of the beginning of the month for the unique Muslim community, especially the determination of the beginning of the month of Ramadan, Shawwal and Dzulhijjah. Where the government in this case has the authority to decide on the determination of the beginning of the month, where in 2008 a determination was made of the beginning of the month of Ramadan, Shawwal and Dzulhijjah with reference to the astronomical aspects of the occurrence of the new moon, namely the conjunction (ijtimak) before dawn (Rukhmadi, 2014 , p. 55). Which is done through research organizations from the government *Libyan Center for Remote Sensing and Space Science* (LCRSSS).

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4. CONCLUSION

According to historical records, the country of Libya has several traces of determining the beginning of the month based on the calendar they made. In 1980 The Jamahiriya Islamic Calendar (AJ = Anno Jamahiriya) and The Jamahiriya Solar Calendar, both of which were introduced and used since the reign of Mu'ammarr al-Qadafi Libya to determine the beginning of the Hijri year at that time. In 2008, a determination was made of the beginning of the month of Ramadhan, Shawwal and Dzulhijjah with reference to the astronomical aspects of the occurrence of the new moon, namely the conjunction (ijtimak) before dawn which was carried out through a government research organization (LCRSSS).

Until now, the Libyan Calendar uses true reckoning with the criteria of ijtima before dawn in eastern Libya. So if in the eastern part of Libya there is ijtimak before dawn, then all of Libya



enters the new moon on that day and if in the east there is ijtimak after dawn, then the beginning of the month begins at the next dawn. The Libyan calendar also adheres to the belief that the day begins at dawn, by pulling the easternmost headquarters of Libya to the world's easternmost headquarters, Kiribati. If ijtimak occurs before dawn at Kiribati point then the whole world enters the new moon that day; and If ijtimak occurs after dawn in Kiribati, the current month is completed to 30 days and the new moon begins at the next dawn around the world.

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