AL-MARSHAD: JURNAL ASTRONOMI ISLAM DAN ILMU-ILMU BERKAITAN
ISSN 2442-5729 (print) || ISSN 2598-2559 (online)
http://jurnal.umsu.ac.id/index.php/almarshad
DOI: https://doi.org/10.30596/jam.v9i1.12082 || Vol. 9, No. 1 Juni 2023

Feasibility Parameters of Rukyatulhilal Venue at Iqra' Tower of Universitas Muhammadiyah Makassar

Alamsyah[1*], Ya'kub[2], Achmad Musyahid[3], Andi Ariiqah[4]
[1,2,4]Universitas Muhammadiyah Makassar
(Jl. Sultan Alauddin No.259, Gn. Sari, Kec. Rappocini, Kota Makassar, Indonesia)
[3]Universitas Islam Negeri Alauddin Makassar
(Jl. Sultan Alauddin No.63, Romangpolong, Kec. Somba Opu, Kabupaten Gowa, Indonesia)
[1*]Email: alamsyah@unismuh.ac.id

Abstract

Observation of the new moon (Rukyatulhilal) is very dependent on sky conditions, views and location. The problem that is often encountered in the implementation of failed hilal (rukyat) observations is the condition of the rukyat field which cannot be separated from the influence of geographical location, atmosphere, pollution, and weather disturbances in the sky. This study aims to determine the feasibility of the Unismuh Makassar Iqra' Tower as a venue for Rukyatulhilal from the aspects of geographical location, pollution and weather disturbances in the field. The research method was divided into three stages: 1) Geographical observations include: location height, distance from the horizon, latitude and longitude of the place; 2) rukyat method (viewing the new moon directly using binoculars); 3) qualitative descriptive data analysis. The results of the study obtained data on the feasibility of the rukyat site, in accordance with the decision of the Supreme Court of the Republic of Indonesia concerning the feasibility of the rukyatulhilal location, namely the view in that direction should not be distracted, so that the horizon will look straight in areas that have an azimuth of 240° to 300°. However, Iqra' Tower of Unismuh Makassar with the view on the horizon is not disturbed by buildings so that the horizon will be seen straight with an azimuth of 269° 28' 42.06" The viewing height is 130.9 m, pollution and weather conditions are at a moderate level because it is not in the factory location. Therefore, the Iqra' tower is very representative as a place for the sighting of the new moon.

Kata kunci : ***Feasibility. Rukyatulhilal, Iqra' Tower***

Artikel Info
Received:
25 Oktober 2022
Revised:
09 Mei 2023
Accepted:
17 Mei 2023
Published:
27 Juni 2023

AL-MARSHAD: JURNAL ASTRONOMI ISLAM DAN ILMU-ILMU BERKAITAN
ISSN 2442-5729 (print) || ISSN 2598-2559 (online)
http://jurnal.umsu.ac.id/index.php/almarshad
DOI: https://doi.org/10.30596/jam.v9i1.12082 || Vol. 9, No. 1 Juni 2023

A. Introduction

The success rate of Rukyatulhilal (new moon observation) is highly dependent on sky conditions and views towards the earth's horizon (ufuk). Apart from reckoning data which indicates the possibility of the new moon being seen, there are other things that need to be considered in Rukyatul hilal, such as; dirty air, clouds or fog and light that can interfere with the view towards the horizon so that it makes the observation process difficult to do. Therefore, at least before the hilal observation is carried out, steps must be taken to fulfill and find out the factors that influence the success of Rukyatulhilal, one of the important factors is the location of Rukyatulhilal.

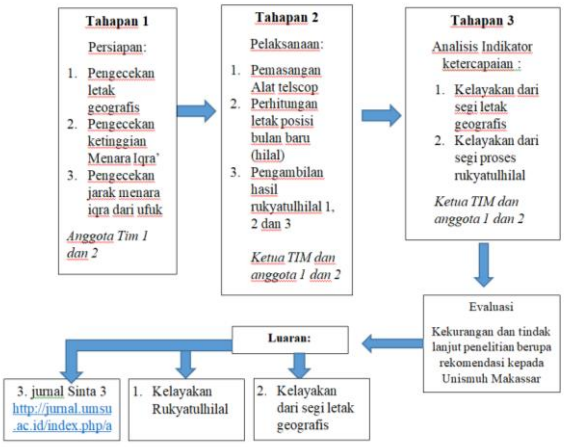
A right place to make early observations of the lunar month is a place where observers can make observations around the setting of the sun. The view in that direction should not be disturbed, so that the horizon will look straight in areas that have an azimuth of 240° to 300°.[1]This area is needed especially if the lunar observations are carried out throughout the season taking into account the shifts of the Sun and Moon from time to time, climate, weather, pollution, atmosphere, and geographical location.[2]

One of the places that has become the object of Rukyatulhilal is Iqra' Tower of Universitas Muhammadiyah Makassar which has been used as a place for rukyat since the beginning of 2021 until now. In the process of observing the sighting of the new moon, the new moon has never been seen directly. This becomes a problem regarding the feasibility of the Iqra' Tower as a place for Rukyat.

In particular, the purpose of this study was to determine the feasibility of the Iqra' Tower of Unismuh Makassar as a place for Rukyatulhilal and to ensure the feasibility of Unismuh Makassar in making the Falak Observatory.

B. Research Methods

The research stages consist of three stages as follows:



Ficture 1. The research stages

[1]Hisab & Rukyat Agency Dep. Religion, *Almanak Hisab Rukyat*, (Jakarta: Development Project for the Islamic Religious Courts, 1981) h. 51-52

[2]Supreme Court of the Republic of Indonesia, *Almanak Hisab Rukyat* (Jakarta: Islamic Religious Court Development Project, 2007).h. 51-52

AL-MARSHAD: JURNAL ASTRONOMI ISLAM DAN ILMU-ILMU BERKAITAN
ISSN 2442-5729 (print) || ISSN 2598-2559 (online)
http://jurnal.umsu.ac.id/index.php/almarshad
DOI: https://doi.org/10.30596/jam.v9i1.12082 || Vol. 9, No. 1 Juni 2023

1. Preparation

The steps involved in the preparation are:

a. Conducting a review of the location of the implementation of activities in terms of geographical location.
b. Making an agreement with Unismuh Makassar
c. Planning of time and place for Rukyatulhilal activities.
d. Checking the tools used in Rukyatulhilal.

2. Implementation of Activities

a. Division of tasks

For the smooth running of this research, it is necessary to divide the tasks of each research team.

1) Team leader: Conducting hilal observations and processing data from hilal observations.
2) Member 1: Checking geographical location, Retrieval of Altitude data, and the Distance of the Iqra' Tower and the Horizon.

b. Member 2: member 2 is from students who will prepare equipment, namely telescopes, cameras, laptops and lunar ephimeris data.
c. Ruyatulhilal activities

1) The first rukyatulhilal activity is carried out at the beginning of the month of Safar 1444 H.
2) The second hilal sighting activity is carried out at the beginning of the month of Rabiul Awal 1444 H.
3) The third rukyatul hilal activity is carried out at the beginning of Rabiul Akhir 1444 H

3. Analysis of Research Results

As for the results of this study, a qualitative descriptive analysis was carried out, namely by analyzing the results of observations for 3 consecutive months by looking at the theoretical basis of the feasibility of rukyat places.

C. Findings and Discussion

Research result

1. Rukyatulhilal Definition

Rukyatulhilal is an absorption sentence from Arabic which consists of two words, namely "rukyat" and "hilal" which become a unified meaning. In the KBBI, the word Rukyat is defined as looking at the first day of the month to determine the day of the beginning and end of Ramadan fasting, visions and observations.[3]

While the word hilal in the Astronomical Dictionary states, "crescent moon" which in astronomy is called a crescent is the part of the Moon that looks

[3]KBBI Compilation Team, Big Indonesian Dictionary, V (Indonesia: Balai Pustaka, 2016).h.

AL-MARSHAD: JURNAL ASTRONOMI ISLAM DAN ILMU-ILMU BERKAITAN
ISSN 2442-5729 (print) || ISSN 2598-2559 (online)
http://jurnal.umsu.ac.id/index.php/almarshad
DOI: https://doi.org/10.30596/jam.v9i1.12082 || Vol. 9, No. 1 Juni 2023

bright from the Earth as a result of the sunlight reflected by it on the day of ijtima' shortly after sunset.[4]The meaning of the new moonIn Arabic, it is rooted in the active sentence halla which means appearing or the passive sentence uhila meaning he is seen, both of which involve the process of witnessing.[5]

It can be concluded that rukyatulhilal is one way to determine the arrival of a new day in the hijriah calendar by observing the moon.

2. Rukyatulhilal Problem

The new moon is so thin and smooth that it is very difficult to see. The moon is a dark object that has no light of its own. What can be seen is the part of the Moon that is illuminated by the Sun. When the sun has just set, the evening sky is still quite bright, which makes it difficult for us to see the new moon. The moon is still too thin, so its light barely matched the brightness of a clear, cloudless evening sky[6].

The factors that influence rukyatulhilal:

a. Human (Observer)

To practice Rukyatulhilal, a person must have certain skills, including:

1) For the eyes of ordinary people who have not been trained to do rukyat, they will find it difficult to see the new moon because the light of the new moon is sometimes the same color as the sky.
2) Knowing the position of the new moon at sunset (ghurub).
3) A person who is going to do Rukyatulhilal must also know the shape of the new moon in question.
4) The results of the rukyat do not conflict with the calculations that have been mutually agreed upon according to Haqiqi math calculations by Muhammadiyah or Win Hisab by the Indonesian Ministry of Religion.

b. Observation Place

A right place to make early observations of the month is a place where observers can make observations around the setting sun. View in that direction should be unobstructed, so that the horizon will appear straight in an area that has an azimuth of 240° to 300°. This area is needed especially if the Moon observations are carried out throughout the seasons taking into account the shifts of the Sun and Moon from time to time[7].

[4]Muhyiddin Khazin, Dictionary of Astronomy, Cet. 1 (Jogjakarta: Buana Pustaka, 2005).h. 69

[5]Tono Saksono, Compromising Rukyat & Hisab. (Jakarta: Amytas Publicita. 2007). h. 83.

[6]RI.MA. Almanak Hisab Rukyat. Jakarta: Development Project for the Islamic Religious Courts; 2007.h. 218

[7]Faqihatush Sholihah, 'Rejection of the Testimony of the Rukyat Hilal in the Determination

AL-MARSHAD: JURNAL ASTRONOMI ISLAM DAN ILMU-ILMU BERKAITAN
ISSN 2442-5729 (print) || ISSN 2598-2559 (online)
http://jurnal.umsu.ac.id/index.php/almarshad
DOI: https://doi.org/10.30596/jam.v9i1.12082 || Vol. 9, No. 1 Juni 2023

c. Weather

Rukyat is carried out when the weather is sunny and there are no obstacles between the sightings and the new moon. This barrier could be clouds, smoke, or fog. No matter how high and old the new moon is, if the weather is cloudy, the new moon cannot be seen. Places with high levels of pollution will increase the level of difficulty observing the new moon because of the thick smoke from the pollution[8].

d. Earth's atmospheric conditions

Smoke due to pollution, fog which can also be caused by air pollution[9]. Sky conditions greatly affect the observation process caused by smoke and other air pollution.[10]

3. *Rukyatulhilal Place Feasibility Standards*

In Alamanak Hisab Rukyat a good place to make observations of the beginning of the month or rukyatul hilal is a place that allows observers to make observations around the setting of the sun. Views in that direction should not be disturbed, so that the horizon will look straight in areas that have an azimuth of 240° to 300°. This area is needed especially when observing the moon throughout the season taking into account the shifts of the sun and moon from time to time[11].

Climatic factors also have an effect on rukyatulhilal, especially for regular observations, you must have a good climate[12].

Whereas in the Nahdatul Ulama Rukyat and Hisab Manuals the places that can be used as rukyatul hilal places are seen from the factors namely: first, that the location in question has proven to have been successful in the rukyat business in previous times. second, that geographically and astronomically the location in question makes it possible to observe the moon[13].

Meanwhile, in the Rukyat Technical

of 1 Shawwal 1432 H (Analysis of the Views of Lajnah Falakiyah Nu and Majlis Tarjih Muhammadiyah Gresik' (UIN Sunan Ampel, 2017).h. 58

[8]Setiawan, E. Encyclopedia of Weather and Climate Series 1. Bengawan Ilmu, 1, (2010). p.28.

[9]Ruskanda Farid, 100 Problems of Reckoning & Rukyat, Syar'i Studies, Science and Technology (Jakarta: Gema Insani Press, 2018).h. 22-23

[10]Adi Damanhuri and Agus Solikin, 'Ideal Sky Quality Limits for Early Dawn Observation Sites', Al-Marshad: Journal of Islamic Astronomy and Related Sciences, 8.1 (2022), 1–10 <https://doi.org/ 10.30596/jam.v8i1.9355>.

[11]Jejen Sunandar, 'Corporate Social Responsibility (Csr) in the Perspective of Islamic Law', Symbol of Law: Journal of Legal Studies, 15.1 (2017), 40–52 <https://doi.org/10.29313/sh.v15i1.2204>.

[12]Directorate of Religious Court Development, Directorate General of Islamic Community Guidance and Hajj Organizing, Department of Religion, Hisab Rukyat, J(akarta: DIK Directorate General of Islamic Community Guidance and Hajj Organizing, Ministry of Religion, 2004). h. 49

[13]Nahdatul Ulama Executive Board, Lajnah Falakiyah, Rukyat Guidelines and Hisab Nahdlatul Ulama (Jakarta: Lajnah Falakiyah PBNU, 2006).p.20

ISSN 2442-5729 (print) || ISSN 2598-2559 (online)
http://jurnal.umsu.ac.id/index.php/almarshad
DOI: https://doi.org/10.30596/jam.v9i1.12082 || Vol. 9, No. 1 Juni 2023

Manual, the Directorate for Development of the Islamic Religious Courts regarding the standard for the place of rukyat, which is related to the object of observation being around the horizon, the first thing that must be done to avoid obstructions to the view on the surface of the Earth is to find a place for observation that is located high. Observations can be made at the top of tall buildings, towers or hilltops[14].

The obstacles that occur when implementing rukyat are:

1. Weather conditions that often become an obstacle for observers are cloudy, rainy, covered with clouds.
2. The height of the hilal and the Sun. The height of the hilal which is less than 2 degrees will be very difficult to see directly by the eye, even optically. As the MABIMS hilal Visibility criteria with the condition that the hilal may be seen if it fulfills one, namely when the sun sets, 1) Altitude or the height of the hilal is not less than 2 degrees AND 2) The curved distance (elongation) of the sun to the moon is not less than 3 degrees OR 3) When the moon sunset age of the moon is not less than 8 hours.[15]As the results of research on the height of the hilal, POB Assalam can be above 5 degrees because it is constrained by the weather.[16]
3. Distance between Moon and Sun. If the distance is too close, even though it has sunk, the beam of light is still dazzling, so the new moon will not be visible.
4. The quality of the observer's eye. The quality of the observer's eye is needed to produce an effective and objective rukyat.
5. The psychological condition of the observer (the doers). The opportunity to see the new moon is actually very short, which is only about 15 minutes to 1 hour. It is not surprising that the great psychological pressure due to the spiritual burden that is carried to produce a decision.
6. Time and cost. Rukyat often takes a lot of time and costs.
7. Observing process transparency. The point is that the observation process

[14]RI, Supreme Court. Almanak Hisab Rukyat. Religious Courts: 2007.h. 52

[15]Azhari, Susiknan. "MABIMS Hilal Visibility and Its Implementation." Web Pages. Last modified 2012. Accessed April 2, 2023.http://museumastronomy.com/visibilitas-hilal-mabims-dan-implementasinya/.

[16]Universitas Muhammadiyah and North Sumatra, 'Al-Marshad: Journal of Islamic Astronomy and Related Sciences', AL-MARSHAD: Journal of Islamic Astronomy and Related Sciences, 6.1 (2020), 1–10 <https://doi.org /10.30596/jam.v>.

AL-MARSHAD: JURNAL ASTRONOMI ISLAM DAN ILMU-ILMU BERKAITAN
ISSN 2442-5729 (print) || ISSN 2598-2559 (online)
http://jurnal.umsu.ac.id/index.php/almarshad
DOI: https://doi.org/10.30596/jam.v9i1.12082 || Vol. 9, No. 1 Juni 2023

can be witnessed by other people so that the value of objectivity in the process of observing the rukyat can be accounted for[17].

These constraints very often occur among perukyat. However, this is only an obstacle that cannot be used as a standard or guideline for declaring the unfitness of a place of worship.

Discussion

1. Feasibility Standards for the Iqra' Tower Universitas Muhammadiyah Makassar.

Iqra' Tower is a tower with a geographical location with latitude -5° 11'49.20 South Latitude and Longitude 119°26'49.20" East Longitude with a height of 70.9 M above sea level which consists of 19 floors. The place for ruyatulhilal is on the 18th floor, which can be seen in the image below.

Figure 2 Iqra' Tower Building Unismuh Makassar

In knowing the feasibility of a place used as a place for rukyatul hilal, certain parameters are needed. As for the parameters for determining the eligibility of the rukyat places according to Nurkhanif in the parameters of the feasibility of the rukyatulhilal places by adopting and classifying existing theories in the rukyatulhilal procedures to be used as a theory or parameter in the feasibility test of rukyatulhilal places, with these parameters it will be easier to give results and conclusions about the feasibility of rukyat places. These parameters are divided into two, namely primary parameters and secondary parameters. Primary parameters are parameters that include the internal aspects of the place such as; geographic location of the place, atmospheric conditions, climatic and weather conditions of the place, and the altitude of the place. While secondary parameters are parameters that include external aspects of the place such as; facilities and infrastructure as well as facilities, and a team of experts (the doers) in the implementation of rukyatulhilal. With these two parameters, a basis for assessing the feasibility level can be given as follows:[18]

[17]Tono Saksono, Compromising Rukyat and Hisab (Jakarta: Amythas Publicita, 2007).h. 98

[18]Muhammad Nurhanif and Alamsyah, 'Implementation of Feasibility Parameters for Rukyat Al Hilal Places on Tegal's Alam Indah Beach', Al-Afaq, 1.2 (2019), 117–38.

AL-MARSHAD: JURNAL ASTRONOMI ISLAM DAN ILMU-ILMU BERKAITAN
ISSN 2442-5729 (print) || ISSN 2598-2559 (online)
http://jurnal.umsu.ac.id/index.php/almarshad
DOI: https://doi.org/10.30596/jam.v9i1.12082 || Vol. 9, No. 1 Juni 2023

Table 1. Criteria for the eligibility level of the rukyat al-hilal places

No	Tingkat Kelayakan	Kriteria kelayakan tempat rukyat
1	Layak	jika suatu tempat rukyat memenuhi kriteria kedua aspek parameter secara menyeluruh (sempurna).
2	Cukup layak	Jika suatu tempat rukyat hanya memenuhi kriteria kedua aspek parameter akan tetapi tidak menyeluruh (tidak sempurna) atau hanya memenuhi aspek parameter primer saja.
3	Kurang layak	Jika suatu tempat rukyat hanya memenuhi aspek parameter sekunder saja.
4	Tidak layak	Jika suatu tempat rukyat sama sekali tidak memenuhi kedua aspek parameter baik primer maupun sekunder

2. Feasibility Analysis of Iqra' Tower in Rukyatulhilal Implementation.

a. Primary parameters include several internal aspects of the condition of the rukyat. The following are some aspects that can provide an overview of feasibility.

1) Geographical location

Geographically, the Iqra' Tower of Universitas Muhammadiyah Makassar is located in the eastern part of the city of Makassar with the coordinates of Latitude of Place (LT) = 5°11'00.66" South LatitudeLongitude of Place(BT) = 119°26'32.15" E. The place for rukyat is said to be ideal if the direction of view of the northern is between 240° – 300° from North-South.

As for the position of the Iqra' Tower, it is ideal, on the horizonwith the view on the horizon undisturbed by buildings so that the horizon will be looked straight with the moon's azimuth of 269° 28' 42.06" which is in the south when the sun sets.[19]

Figure 3 Feasibility of the Dawn Tower Iqra' area of Unismuh Makassar

2) Weather conditions during Rukyat

Analysis of monthly average rainfall for 1991 – 2020 is presented in Figure 1 which shows a distribution pattern in the form of the letter U. Makassar City has a monsoonal type of rain pattern, which is characterized by having one dry peak and one rainy peak. The rainy season occurs from November to April and the dry season occurs from May to October.

[19]Data was taken on September 26, 2022

AL-MARSHAD: JURNAL ASTRONOMI ISLAM DAN ILMU-ILMU BERKAITAN
ISSN 2442-5729 (print) || ISSN 2598-2559 (online)
http://jurnal.umsu.ac.id/index.php/almarshad
DOI: https://doi.org/10.30596/jam.v9i1.12082 || Vol. 9, No. 1 Juni 2023

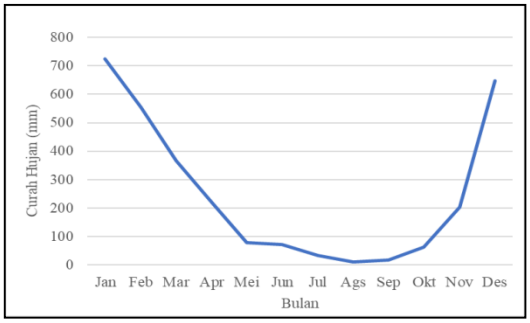


Figure 4. Average Monthly Rainfall in Makassar City

In December, January and February (DJF) the apparent movement of the Sun is at 23.5° in the Southern Hemisphere (BBS), so the wind blows from north to south, known as the West Monsoon. The west monsoon wind will bring a lot of water vapor from the Pacific Ocean, resulting in a lot of rain that month. Conversely, in June, July and August (JJA) there is a movement of air mass conditions from south to north, which is better known as the East Monsoon. The east monsoon winds bring a little water vapor from the Australian continent, resulting in a reduction in rain that month. The peak of rain occurs in January with an average value of 716 mm, and the lowest rain occurs in August with an average value of 10 mm.[20]

3) Venue Altitude

In the process of rukyatul hilal the altitude greatly affects one's point of view. The higher a place is rukyatulhilal, the viewing angle will be higher too. In other words, a surveyor makes it possible to see the new moon.

Iqra' Tower Universitas Muhammadiyah Makassar with a height of 130.9 m. as shown below.

Figure 5 The height of the Ira' Tower seen from the GPS Status Application

b. Feasibility Analysis of Unismuh Makassar Iqra Tower From Secondary Parameter Aspects

1) Rukyat tools

The rukyat tool is a means to observe celestial bodies such as the new moon (hilal). At sunset, the evening sky is still quite bright, which can make it difficult for explorers to see the new moon. Another

[20]Pariabti Palloan Chaterina Restu Malino, Muhammad Arsyad, 'Analysis of Rainfall and Air Temperature Parameters in Makassar City Related to Climate Change Phenomena', Journal of Science and Physics Education (JSPF), 17.02 (2021), 39–45.

AL-MARSHAD: JURNAL ASTRONOMI ISLAM DAN ILMU-ILMU BERKAITAN
ISSN 2442-5729 (print) || ISSN 2598-2559 (online)
http://jurnal.umsu.ac.id/index.php/almarshad
DOI: https://doi.org/10.30596/jam.v9i1.12082 || Vol. 9, No. 1 Juni 2023

consideration when the rukyat is performed is that the Moon is still young, with the intensity of the Moon's light still too thin. Therefore, in order to facilitate the implementation of the rukyat, several tools are needed as a guide to the celestial bodies during the rukyat. The tools that are commonly used in the implementation of rukyat are Location Goals, Binoculars, Theodolites, Telescopes, and Special Sticks'.

From the several tools mentioned above, the feasibility of the Universitas Muhammadiyah Makassar has been categorized as very feasible supported by several tools, namely:

Table 2 Rukyat Tools of Unismuh Makassar

No	Rukyat Tool	Information
1	Telescope	2 pieces in good condition
2	Binoculars	1 Piece in Good condition
3	Location Goal	1 piece in good condition
4	Special Stick	2 Pieces in Good Condition
5	Theodolite	1 Fruit in Good condition

According to the author, from some of these tools, the tools are important and very helpful inrukyatulhilal especially the Telescope which can help the rukyat to see directly.

2) Peacher's Psychological Condition

The psychological condition of the stonecutter is the ability of the stonecutterto get data in terms of reckoning or astronomical data on the location of the celestial bodies to be seen (the moon). In addition, a surveyor can use the tools that have been prepared, such as telescops, location gates and other tools.

To support all of this, human resources are needed who are considered capable of operating the tool. At Unismuh Makassar, there are 4 human resources in the field of study of astronomy with each graduate of the Postgraduate Masters of UIN Walisongo Semarang concentrating on astronomy. It is these human resources who have been carrying out Rukyatulhilal activities.

3) Rukyat Accessibility and Facilities

The definition of accessibility and rukyat facilities referred to by the author is access to infrastructure around Universitas Muhammadiyah Makassar such as transportation access to the rukyat place, access to communication facilities, place facilities, and including the condition of the beach horizon whether there are obstructions or not.

1. Means of transportation to get to the rukyat location at the Universitas Muhammadiyah Makassar is very affordable, that is, it can be passed by two-wheeled and four-wheeled vehicles.

ISSN 2442-5729 (print) || ISSN 2598-2559 (online)
http://jurnal.umsu.ac.id/index.php/almarshad
DOI: https://doi.org/10.30596/jam.v9i1.12082 || Vol. 9, No. 1 Juni 2023

2. The communication facilities at the Universitas Muhammadiyah Makassar can be said to be good because the location of the Iqra' Tower is on the outskirts of the city center, making it possible to live broadcast the results of the rukyatul hilal because it is supported by good internet network access.
3. The condition of the excavator's view towards the horizon in the Iqra' tower at the Universitas Muhammadiyah Makassar is very clear because it is not obstructed by any buildings around the horizon.
4. Support facilities on the 18th floor of the Unismuh Makassar Iqra' tower have prepared a special place for the implementation of Rukyatulhilal.

D. Conclusion

From the results of field observations, the feasibility of the Iqra' Tower building at the Universitas Muhammadiyah Makassar can be concluded as follows:

1. Geographically, the Iqra' Tower of Universitas Muhammadiyah Makassar is ideal with the position of the Iqra' Tower facing the horizon with a viewpoint on the horizon undisturbed by buildings, so that the horizon will look straight with the moon's azimuth of 269° 28' 42.06" which is in the south at sunset.
2. Analysis of rainfall in Makassar City has a monsoonal pattern of rain, characterized by having one dry peak and one rainy peak. The rainy season occurs from November to April and the dry season occurs from May to October. It is better to do rukyatulhilal from May to October.
3. Iqra' Tower Universitas Muhammadiyah Makassar with a height of 130.9 m. this really supports explorers to see the new moon.
4. In terms of rukyat equipment, Unismuh Makassar already has several tools that will support the rukyatulhil process and are supported by experts in astronomy.

References

Chaterina Restu Malino, Muhammad Arsyad, Pariabti Palloan, 'Analysis of Rainfall and Air Temperature Parameters in Makassar City Related to Climate Change Phenomenon', Journal of Science and Physics Education (JSPF), 17.02 (2021), 139–45

Damanhuri, Adi, and Agus Solikin, 'Ideal Sky Quality Limits for Early Dawn Observation Sites', Al-Marshad: Journal of Islamic Astronomy and Related Sciences, 8.1 (2022), 1–10 <https://doi.org/10.30596/jam.v8i1.9355>

Farid, Ruskanda, 100 Problems of Hisab &

ISSN 2442-5729 (print) || ISSN 2598-2559 (online)
http://jurnal.umsu.ac.id/index.php/almarshad
DOI: https://doi.org/10.30596/jam.v9i1.12082 || Vol. 9, No. 1 Juni 2023

Rukyat, Syar'i Studies, Science and Technology (Jakarta: Gema Insani Press, 2018)

KBBI, Drafting Team, Big Indonesian Dictionary, V (Indonesia: Balai Pustaka, 2016)

Khazin, Muhyiddin, Dictionary of Astronomy, Cet. 1 (Jogjakarta: Buana Pustaka, 2005)

Muhammadiyah, University, and North Sumatra, 'Al-Marshad: Journal of Islamic Astronomy and Related Sciences', AL-MARSHAD: Journal of Islamic Astronomy and Related Sciences, 6.1 (2020), 1–10 <https://doi .org/10.30596/jam.v>

Nahdatul Ulama, Executive Board, Lajnah Falakiyah, Rukyat Guidelines and Hisab Nahdlatul Ulama (Jakarta: Lajnah Falakiyah PBNU, 2006)

Nurhanif, Muhammad, and Alamsyah, 'Implementation of Feasibility Parameters for Rukyat Al Hilal Places at Tegal's Alam Indah Beach', Al-Afaq, 1.2 (2019), 117–38

RI, Supreme Court, Almanak Hisab Rukyat (Jakarta: Development Project for Islamic Religious Courts, 2007)

Saksono, Tono, Compromising Rukyat and Hisab (Jakarta: Amythas Publicita, 2007)

Sholihah, Faqihatush, 'Rejection of the Testimony of the Rukyat Hilal in the Determination of 1 Shawwal 1432 H (Analysis of the Views of Lajnah Falakiyah Nu Figures and Majlis Tarjih Muhammadiyah Gresik' (UIN Sunan Ampel, 2017)

Sunandar, Jejen, 'Corporate Social Responsibility (Csr) in the Perspective of Islamic Law', Symbol of Law: Journal of Legal Studies, 15.1 (2017), 40–52 <https://doi.org/10.29313/sh.v15i1.2204>