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DAYTIME CRESCENT MOON OBSERVATION AS A FOUNDATION FOR STRENGTHENING THE GLOBAL ISLAMIC CALENDAR: AN ASTRONOMICAL AND MAQASID AL-SHARI'AH APPROACH

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ABSTRACT

The Islamic calendar holds a vital position in Muslim religious life, particularly in determining the timing of obligatory worship such as Ramadan fasting and the celebration of Eid al-Fitr. Traditionally, the beginning of the Hijri month is established through post-sunset crescent moon sighting, a practice that frequently results in differing determinations due to weather conditions, geographical variations, and technological limitations. From the perspective of *naṣṣ* (revealed texts) and classical fiqh, the obligation of moon observation is firmly rooted in Qur'anic guidance and Prophetic traditions. Nevertheless, classical jurists emphasized that the fundamental objective of rukyat is attaining certainty (*yaqīn*) regarding the onset of worship time, thereby allowing the use of reliable methods that fulfill this objective. Advancements in modern astronomy have introduced daytime moon observation conducted after conjunction (*ijtimā'*) as a scientifically viable alternative that enhances precision and consistency in determining the beginning of the Hijri month. This study investigates whether daytime moon observation can serve as a valid foundation for a more accurate and globally consistent Islamic calendar in accordance with the principles of *maqāsid al-sharī'ah*. The research aims to assess the scientific credibility of daytime moon observation and examine its compatibility with Islamic legal objectives. This study adopts a qualitative research approach based on an extensive literature review and a case study of daytime moon observations conducted at the University of Muhammadiyah Makassar Observatory. The findings indicate that with advanced astronomical instruments and astrophotography, daytime moon observation is not only feasible but also capable of

producing more accurate and verifiable results than traditional naked-eye methods. Addressing classical objections that restrict rukyat to post-sunset observation, this study engages contemporary fiqh council discussions and historical precedents, including the acceptance of astronomical instruments in Islamic tradition. The study concludes that daytime moon observation aligns with *maqāṣid al-sharī'ah*, particularly in preserving religion (*ḥifẓ al-dīn*) through accurate worship timing, preserving intellect (*ḥifẓ al-'aql*) by encouraging scientific reasoning, and removing hardship (*raf' al-ḥaraj*). Consequently, this method offers a scientifically and theologically grounded solution for developing a unified and reliable global Islamic calendar.