



# Turn Your Face in Prayer Toward al-Masjid al-Haram

Determining the correct *qibla* is a vital aspect of every observant Muslim's daily life

BY SYED IMTIAZ AHMAD

**D**ETERMINING THE DIRECTION OF THE *qibla*, the direction toward which Muslims turn in their prayers, is not just for mosques but also comes up when someone moves or acquires a new residence, or a venue is rented for an Islamic event, and indeed when a new mosque is being designed.

The Ka'bah, the first place of congregational worship built by Prophets Abraham and his son Ismail (*'alayhuma as salam*), was originally a square roofless structure. A roof was added later to protect the congregation from the elements.

Despite being affected by both natural and man-made disasters and rebuilt several times, it has always retained its distinctive structure. Now contained within a vast building known as the Sacred Mosque (*al-Masjid al-Haram*), the prayers are performed facing this cubic structure, which is covered with a cloth of black brocade (*kiswah*), instead of within it.

Sometimes it may be said that the prayer direction is Makkah itself. But to be precise, one does *not* pray toward the actual city, but toward the Ka'bah.

While building this structure, Prophet Abraham prayed, "Our

Lord, make us Muslims and our progeny a Muslim people bowing to your will" (2:128). The meaning of "Muslim" here is "bowing to God's will," one who follows and seeks His guidance. In that sense, all prophets of God and their followers are considered Muslims,

even though Islam was formally declared by Prophet Muhammad (*salla Allahu 'alayhi wa sallam*).

At that time, Muslims prayed toward the Noble Sanctuary in Jerusalem. But in Madinah, he was told to turn away from that city and to face the Sacred Mosque (2:144). After Makkah surrendered to the Prophet, he cleared away all of the idols that were inside and surrounding the Ka'bah and declared it to be the community's new and permanent prayer direction. The Quran states "... turn your face [in prayer] toward al-Masjid al-Haram and indeed, it is the truth from your Lord." (2:149).



## DETERMINING THE QIBLA

Finding the *qibla* for those living near Ka'bah is easy. Just draw an imaginary line for the shortest distance from your location to the Ka'bah, and the direction this line takes will point to the *qibla*. For those further away, take a large globe, place one pin at your location and the other at Makkah, and tie the two pins with a string that hugs the globe's curved surface — and voila, you have the *qibla*.

Of course, we can say that this

is only an approximation, because Earth is a sphere. However, as Earth naturally appears flat when the distances between two locations are short, one can determine the shortest distance from any point to the Ka'bah by drawing an imaginary line between the two points.

Over the centuries, astronomers, geographers and mathematicians have devoted a lot of time to determining its precise direction. Solutions were developed based on spherical trigonometry and geographical knowledge using astrolabes and the relevant

spherical surface, the *qibla* direction for North America is northeast, with small differences from city to city. Compasses use magnetic north, which is based on our planet's internal magnetic field, for determining this direction.

Calculation methods, which view Earth as a sphere, imagine a line running from south to north at the sphere's middle, which it calls "true north." The difference between them is known as its "declination," the amount of which is insignificant for North America.

The website <https://hamariweb.com/>

**EVERY NOW AND THEN SOMEONE MAY TRY TO RESTART THE CONTROVERSY OVER THIS CONTINENT'S QIBLA DIRECTION — NORTHEAST VS. SOUTHEAST — THAT FIRST AROSE IN 1993. DR. KAMAL ABDALI, DIRECTOR OF NUMERIC, SYMBOLIC AND GEOMETRIC COMPUTATION PROGRAM AT THE AMERICAN NATIONAL SCIENCE FOUNDATION, HAS RESOLVED IT ([HTTPS://GEOMETE.COM/ABDALI/PAPERS/QIBLA.PDF](https://geomete.com/abdali/papers/qibla.pdf)).**

latitude and longitude information. Today, the direction is relatively easy to determine through mobile phone software (apps), the Internet or specially marked compasses.

The commonly accepted method, the "orthodromic distance," involves measuring the shortest distance between two points on Earth's spherical surface. However, the correctness of this procedure is opposed by a minority of people who still claim that our planet is flat or prefer to visualize a line through its interior to determine the prayer direction.

Having the longitude and latitude information for point A, as well as the available calculation methods and relevant computer software (e.g., <https://hamariweb.com/islam/qibla-direction.aspx>), we can determine the correct direction at point A. In addition, specially designed compasses that show this direction at any location are readily available. Digital compasses do this more precisely.

Scholars of Islam have considered compasses valid tools. Using our planet's

[islam/qibla-direction.aspx](https://hamariweb.com/islam/qibla-direction.aspx) enables one to locate the *qibla* from any location. *Qibla*-finder software is widely available and can be easily and freely downloaded to one's mobile phone. For North America, the relevant line is shown the northeastern quadrant.

### DIFFERENT MODELS

There may be some questions about the earth, azimuth, spherical or ellipsoidal models used to calculate this direction and how precise they are. The azimuth model, which has been used in navigation systems and other applications, makes angular measurements in a spherical coordinate system. As it is less practical for determining the *qibla* direction, spherical or ellipsoidal models are better choices.


To be precise, Earth is not a perfect sphere because it is somewhat flattened at the poles and bulging at the equator. Moreover, it isn't even a perfect oblate spheroid, for it does have some deformities. However, these are small and have no significant bearing in calculating the *qibla* direction based

on a spherical Earth. Mathematically, the spherical model is easy to use and produces results that are almost as precise as those of the other models.

As long as we adhere to the common view of following Earth's spherical surface, the differences in the results produced by these various models are insignificant. Facetious views of Earth's shape aside, one source of misunderstanding does require some explaining, namely, the widely available world maps developed by Flemish geographer Gerardus Mercator in 1569. These maps, which project Earth's surface on a flat surface, became standard for navigation. If one places a pin at New York and another one at Makkah, the line's direction is southeast, contrary to the directions produced by the spherical approach.

The correct projection of its spherical surface, a "gnomonic projection," is used in seismic work because seismic waves tend to travel along great circles, namely, the lines of longitude around Earth's surface. A gnomonic map projection displays all of these great circles as straight lines, which causes any straight-line segment to show the geodesic shortest route between the segment's two endpoints. Muslims who aren't well versed in geography, spherical geometry and mathematical calculation may use the Mercator map to determine the *qibla* direction — a serious mistake indeed.

Every now and then someone may try to restart the controversy over this continent's *qibla* direction — northeast vs. southeast — that first arose in 1993. Dr. Kamal Abdali, director of Numeric, Symbolic and Geometric Computation Program at the American National Science Foundation, has resolved it (<https://geomete.com/abdali/papers/qibla.pdf>).

Determining the accurate *qibla* is particularly critical for Islamic centers and mosques, for Muslims must face the Sacred Mosque while praying, regardless of their location (2:144). If they cannot — maybe they are aboard an airplane — the best possible estimate is allowed. Ultimately, it is a matter of the individual's intention and spirit (2:177). 

Dr. Syed Imtiaz Ahmad, emeritus professor at Eastern Michigan University, has served as ISNA vice president and president, ISNA Canada vice president and president, president of Computer Science Association of Canada, president of Association of Pakistani Scientists and Engineers of North America, president of Pakistan Canada Association, as well as president of Windsor Islamic Association, and chair of ISNA Canada School Board.