

EARLY ISLAMIC QIBLAS

**A survey of mosques built between
1AH/622 C.E. and 263 AH/876 C.E.**

BY

DAN GIBSON

With maps, charts and photographs

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Early Islamic Qiblas (Updated edition)

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This updated edition contains changes to the Cheraman Juma Mosque in India, and the Umayyad Mosque on the Amman citadel to bring them in line with more recent research.

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This book is dedicated to all the men and women who have endeavored to help me in my research and the eventual publishing of this book.

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Second, I must acknowledge Gerald Longjohn, who also influenced my life in many ways. In 1981 he asked me if I wanted to go visiting with him. Those visits changed my life. During that year we visited many of the ruling families of the United Arab Emirates, and I ended up spending hours sitting with Sheikh Shakhbut bin Sultan Al Nahyan who loved to tell stories of the old life in the desert before the coming of oil. From Sheikh Shakhbut I learned the value of sitting with the older men and listening to them account stories of the old days. Much has been lost during the last few decades, and there are few who can recount the old stories any more.

Third I would like to acknowledge the advice and encouragement given by the late Dr. Andrew Rip-pin. Always kind and considerate, he was quick to point out areas that needed improvement, and resources that I had not yet discovered.

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Once again I want to thank so many people, including my own family who have been supportive over the years and helpful during the long winter months that I worked on writing up this project.

Dan Gibson

Introduction

After publishing the book *Qur'ānic Geography*¹ in 2011, fellow historians and academics encouraged me to publish my research data on early Qiblas more fully. *Qur'ānic Geography* focused on the geographical references in the Qur'ān, with only minor attention given to the mosques of early Islam that pointed to the city of Petra in Jordan.² This book contains eight papers released in 2016 and 2017 which attempted to provide some of my research and address a few resulting issues in greater detail.

Revisiting my original data has allowed me the opportunity to re-evaluate what I had done some seven years earlier, both in technique as well as in scope. I have revised my opinion on a couple of mosques, and have added a number of additional mosques. The result is a two-page table listing as many early mosques as I have discovered to date. I am always interested in finding more mosques, especially if the date of their construction can be ascertained with any confidence.³ When visiting old mosques, I have found that the strongly held opinions of local people that “this is a very early mosque” does little to ascertain the actual date of construction. You will find a couple of these “old mosques” at the end of the table, to demonstrate that while these mosques are old, there is insufficient data to date them with any certainty.

This book attempts to correct the age-old opinion that early mosques were aligned incorrectly. The 1986 Encyclopedia of Islam, Volume 5, page 88, (by David A. King,) states: *Another reason why mosques may be incorrectly aligned is that their qiblas were not computed from geographical data at all but were inspired by tradition. Thus, for example, mosques in the Magrib and the Indian subcontinent generally face due east or due west, respectively. Likewise, in early Muslim Egypt the Qibla adopted was the azimuth of the rising sun at the winter solstice. Several mosques in Cairo face this direction, which was favored as the qiblat al-ṣaḥāba, but which is about 10° off the qibla computed mathematically using mediaeval geographical coordinates and about 20° off the true qibla for Cairo. No survey has yet been made of the orientation of mediaeval mosques. Such a survey would be of considerable interest for the history of Islamic architecture as well as the history of science.* (Emphasis is mine).

1 *Qur'ānic Geography*, by Dan Gibson, Independent Scholars Press, 2011, Vancouver, Canada

2 These are found in *Qur'ānic Geography*, starting in page 251, chapter eighteen, which is a mere 22 pages out of total of 480 pages.

3 Please email me at: research@canbooks.ca

My own small survey done over the last 20 years is a step in this direction, visiting as many of the early mosques as I could find, taking photographs, examining foundations, and checking the qibla direction. I must thank the Massachusetts Institute of Technology (MIT) and the website: archnet.org who have been most helpful in providing architectural information on many mosques.

Qiblas

According to the Qur’ān the “Qibla” is the direction that a Muslim must face when he prays. Most Muslims believe the Qibla originally faced Bait ul Maqdis (The Holy House) in the city of Jerusalem.⁴ Islamic sources tell us that this Qibla was used from 610 CE until 623 CE. Seventeen months after the prophet Muḥammad’s arrival in Medina – the date is given as 11 February 624 – God instructed Muḥammad to change the Qibla direction towards Masjid al-Ḥarām, which is understood by Muslims to be the Ka’ba area in Mecca in Saudi Arabia.⁵ According to traditional accounts from Muḥammad’s companions, this change happened very suddenly during the noon prayer in Medina, in a mosque at the edge of town, known as the Qubā mosque.⁶ While prayers were taking place, Muḥammad received a revelation from God instructing him to change the Qibla to Masjid al-Ḥarām. (literally “Turn then your face in the direction of the Masjid al Masjid al-Ḥarām”.⁷) According to traditional accounts contained in the hadith and sira, Muḥammad, who had been facing Jerusalem, upon receiving this revelation, immediately turned around to face Mecca, and those praying behind him also did so.⁸

The Qur’ān does not specifically identify or allude to Jerusalem as being the first Qibla. The practice of facing Jerusalem appears in the biographies of Muḥammad and some hadith collections.⁹ There is also disagreement as to when this practice started and for how long it lasted.

The Muslim records are not clear on where the original Qibla actually pointed, as the Qur’ān only mentions Masjid al-Ḥarām (The *Forbidden Sanctuary*) and not Mecca. This is complicated by other hadith and historical accounts where Syria is mentioned in relation to the first early Qibla and by others that refer to “bayt muqadis”¹⁰ and al-Aqṣa or the “far mosque.”¹¹

Many things are not clear from early Islamic literature, most of which was written over 200 years after the events they describe. By this time the Arabic language had evolved so that the word qibla not only referenced the direction of prayer, but now also referred to the direction *south*.¹² For example, southern Lebanon becomes qiblat-lubnān. Therefore one has to read the Arabic texts very carefully noting what

4 Bukhārī 1:392

5 Ṭabarī, Vol. 7, page 24 see footnote

6 Bukhārī 1:397. Also *The History of Landmarks of Medina, Past and Present*, by S. A. H. al-Kairi, 1410 (H), and also *Qiblatain Mosque*, Abdel Wahid El Wakil, London UK.

7 Qur’ān, Sura 2:144

8 Ṭabarī Vol. 7, page 131 footnote 209) and Ṭabarī Volume 7, page 25

9 Tamar Mayer; Suleiman Ali Mourad (2008). *Jerusalem: idea and reality*. Routledge. p. 87. Retrieved 5 Sept 2016.)

10 Ṭabarī, Volume 6, 1218, page 132

11 Qur’ān, Sura 17:1

12 *Akhbār Al-Madīna*, (Arabic) 199 AH page 86

opinions each writer is supporting. However, there seems to be general agreement that the original Qibla pointed somewhere north, and the final qibla pointed south, towards Mecca in Saudi Arabia. In order to determine the direction of the original qibla, I began traveling and examining the earliest mosques I could find.

Starting in 1979, shortly after moving to the Middle East, I began a personal survey of the archeological history of Arabia. During the following twenty five years I lived in Jordan, the United Arab Emirates, and Yemen. My first trip into Saudi Arabia was in 1980, and I continued to visit and explore as many of the archeological sites as possible.

Qibla Data

In the year 2000, I moved into southern Jordan, under the joint-sponsorship of the Jordanian Ministry of Antiquities and the Ministry of Tourism, to survey and produce books and materials for modern visitors to southern Jordan. I was aware of a number of historians that were alluding to the importance of northern Arabia in Islamic history, rather than a history around the city of Mecca.¹³ It was during this time (around 2004) that I began to seek correlations between the Islamic accounts and the geography of southern Jordan. Eventually I became convinced that there was enough material to warrant some full time, serious study to the possibility of an early Islamic setting in southern Jordan.

So I cleared my schedule, and began to study the early Qiblas in earnest, hoping that it would put to rest any arguments in favor of southern Jordan. To my surprise, I began finding mosques with Qiblas that faced southern Jordan. As more and more of these Qiblas came to light, it became apparent that they faced the ancient city of Petra. As I turned my attention to Petra, I realized that the descriptions of early Mecca fit Petra perfectly, allowing me to recognize the location of the first Ka'ba, the two mountains of Marwa and Şafa, and many other sites.¹⁴

So I added a section to my forthcoming book, *Qur'ānic Geography*, which was published by The Independent Scholars Press in 2010. The subject of this book was a survey of the historical places mentioned in the Qur'ān. It was over 400 pages in length, with less than a quarter of it dealing with the first original Qiblas. In 2014, I began working with a British film company on the production of a documentary film about the original location of Masjid al-Ḥarām. That film, *The Sacred City*, was released in 2016.¹⁵

If my research is correct, (which I believe it is) then the traditional story of the Qibla being changed from Jerusalem to Mecca in February 624 CE cannot be true. What can be attested to is that the early Qibla was actually facing Petra in Jordan, and that starting in 727 CE, slowly over one hundred years after the beginning of Islam, the Qibla gradually changed to Mecca in Saudi Arabia. The last remaining mosque built facing Petra that we can firmly date, was in 125 AH or 743 CE.

Initially the film faced resistance everywhere. When broadcasters approached Muslim experts for their opinions, they rightfully said that they had never heard of this, and it sounded most unlikely. But slowly the book and film audience has grown and has caused some controversy.

This book is a reply to repeated requests to release more of my data and is meant to complement *Qur'ānic Geography* and also the film. I start with a table containing the mosques I have been able to find and examine, a few maps, and then several pages of data on each of the mosques mentioned in the tables.

13 <http://www.free-minds.org>, *Where Was Mohammed?*, retrieved Nov 11, 2007 & *Hagarism, The Making of the Islamic World*, Crone and Cook, Cambridge University Press, 1977

14 See page 266 in this publication

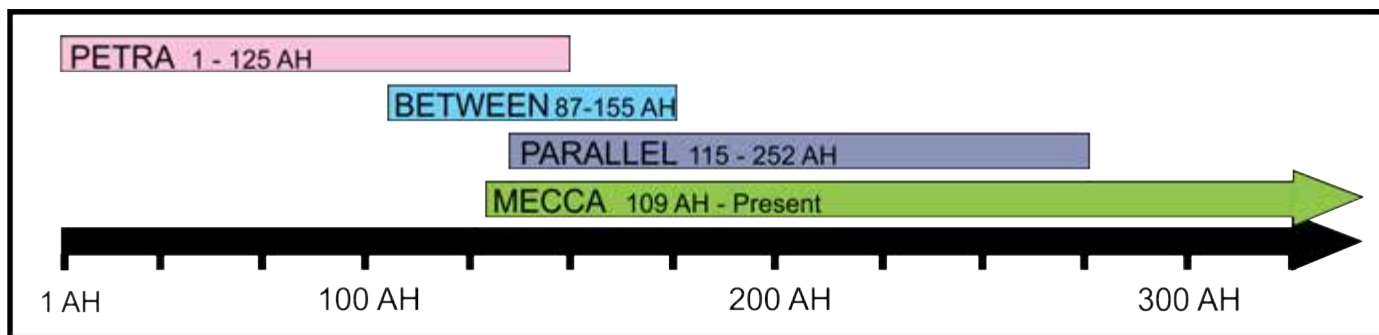
15 See <http://sacredcity.ca>

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|--------------------------------------|--------------|----------------------|----------------|------------------|----------------------|
| 1 | 622 | Medina | Saudi Arabia | Qubā Mosque | unknown | - | 435 AH |
| 2 | 623 | Medina | Saudi Arabia | Jami'-al Nabi | unknown | - | 707 & 1951 |
| 5 | 626 | Medina | Saudi Arabia | Qiblatain Mosque | Petra & Jer. | - | 1987 CE |
| 6 | 627 | Janad | Yemen | Janad Mosque | unknown | - | 1011 CE |
| 6 | 627 | Guangzhou | China | Grand Mosque | Petra | 2.81° | never |
| 8 | 629 | al-Kilabiyah | Saudi Arabia | Jowatha Mosque | unknown | - | 9th century |
| 8 | 629 | Methala, Kerala | India | Cheraman Juma | unknown | - | 11th century |
| 13 | 634 | Dawmat al Jandal | Saudi Arabia | 'Umar ibn al-Khattāb | unknown | - | 1793 |
| 15 | 637 | Hama | Syria | Jāmi' Hama al'Kabīr | Petra | 0.61° | never |
| 16 | 637 | Mosoul | Iraq | Jami' al-Yunus | unknown | - | 1393 CE |
| 16 | 638 | Kūfa | Iraq | Masjid Kūfa | unknown | - | 749 CE |
| 21 | 642 | Fuṣṭaṭ | Egypt | 'Amr ibn -Al-As | Petra | - | 211 AH |
| 28 | 649 | Larnaca | Cyprus | Hala Sultan Tekke | unknown | - | 1323 CE |
| 67 | 686 | Biskra | Algeria | Mosque of Sidi 'Ukba | unknown | - | 416&1214AH |
| 71 | 690 | Jerusalem | Israel | Dome of the Rock | unknown | - | never |
| 80 | 699 | Humeima | Jordan | Qaṣr Humeima | Petra | 7.33° | never |
| 86 | 705 | Ṣan'ā | Yemen | Grand Mosque | Petra & Jer | 0.36° | never |
| 87 | 706 | Khirbat al Minya | Israel | Khirbit al Minya | Petra | 0.8° | never |
| 87 | 706 | Wāsiṭ | Iraq | Hajjāj Mosque | between | .29° | never |
| 82 | 706 | Amman | Jordan | Umayyad Mosque | between | 7.09° | never |
| 89 | 708 | Damghan | Iran | Masjid i Tarik Khana | Petra | 5.59° | never |
| 89 | 708 | Mihrab Introduced | | | | | |
| 90 | 709 | Jerusalem | Israel | Al-Aqṣa Mosque | Petra | 3.43 | never |
| 91 | 709 | Damascus | Syria | al-Umawi al-Kabīr | between | 1.75° | never |
| 95 | 714 | Jericho | Israel | Khirbat al-Mafjar | Petra | 0.59° | never |
| 95 | 714 | 'Anjar | Lebanon | 'Anjar Palace Mosque | Petra | 3.61° | never |
| 96 | 715 | Aleppo | Syria | Umawi al Kabīr | unknown | - | 1260 CE |
| 99 | 717 | Manama | Bahrain | Masid al Khamis | unknown | - | 449 AH |
| 102 | 721 | Boṣra | Syria | Mosque of Boṣra | between | 0.35° | never |
| 105 | 724 | Bāghdad | Iraq | Mosque of Ruṣāfa | unknown | - | unknown |
| 106 | 725 | Amman | Jordan | Grand Hussein Mosque | unknown | - | unknown |
| 107 | 726 | Hayr al Gharbi | Syria | Hayr al Gharbi | between | 3.21° | never |
| 109 | 727 | Banbhore | Pakistan | Banbhore Mosque | Mecca | 2.44° | never |
| 110 | 728 | Hayr al Sharqi | Syria | Qaṣr Hayr al Sharqi | between | 2.8° | never |
| 112 | 730 | Amman Citadel | Jordan | Umayyad Palace | Mecca | 1.36° | never |
| 115 | 732 | Tunis | Tunisia | Jāmi' al-Zaytuna | parallel | 0.99 | never |
| 122 | 740 | Baalbeck | Lebanon | Ba'albeck Mosque | between | 0.67° | never |
| 122 | 741 | First mention of Mecca in literature | | | | | |

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|--------------------|------------|-------------------------|----------------|------------------|----------------------|
| 124 | 742 | Xian | China | Huajuexiang Mosque | unkown | - | 1392 CE |
| 125 | 743 | Amman Airport | Jordan | Mushatta Palace | Petra | 3.99° | never |
| 127 | 744 | Ḥarrān | Turkey | Mosque and University | between | 0.32° | never |
| unknown | unknown | Hangzhou | China | Fenghuang Mosque | unknown | - | 1279 CE |
| 135 | 753 | Shibām | Yemen | Shibām Palace | unknown | - | unknown |
| 145 | 762 | Bāghdad | Iraq | Mosque of Manṣūr | Mecca | - | demolished |
| 146 | 764 | Kūfa | Iraq | Qaṣr Ukhaydir | Mecca | 3.9° | never |
| 153 | 770 | Ribāṭ | Tunisia | Ribāṭ Fortress | parallel | - | never |
| unknown | unknown | Be'er Ora | Israel | Be'er Ora Qiblatain | unknown | - | never |
| unknown | unknown | Bowhar | Oman | Sahī Ramdah Mosque | Petra | 0.58° | never |
| unknown | unknown | Suma'il | Oman | Suma'il Omani Mosque | Petra | 1.55° | never |
| 155 | 772 | Raqqa | Syria | Raqqa Mosque | between | 0.86° | never |
| 155 | 772 | Ishfan | Iran | Masjid al Jāmi' | unknown | - | 419 AH |
| unknown | unknown | Ṣalālah | Oman | Job's Tomb Shrine | unknown | - | unknown |
| unknown | unknown | Samarkand | Uzbekistan | Bibi Samarkand | Petra & Jer. | 1.78° | never |
| 168 | 784 | Córdoba | Spain | Córdoba Mosque | parallel | 2.01° | never |
| 183 | 799 | Bāghdad | Iraq | Shrine of Kazmiyya | unknown | - | unknown |
| 221 | 836 | Qayrawān | Tunisia | Jāmi' Uqba Ibn Nafi' | parallel | 4.22° | never |
| 232 | 847 | Sāmarra | Iraq | Great Mosque of Sāmarra | Mecca | 1.13° | never |
| 236 | 850 | Sūsa | Tunisia | Great Mosque of Sūsa | parallel | 6.78° | never |
| 245 | 859 | Sāmarra | Iraq | Abu Dulaf Mosque | Mecca | 4.6° | never |
| 252 | 866 | Qīrūwān (Kairouan) | Tunisia | Mosque with Three Doors | parallel | 3.54° | never |
| 257 | 871 | Shibām Aqyan | Yemen | Jāmi' al Kabīr | unknown | - | 12 century |
| 263 | 876 | Cairo | Egypt | İbn Ṭūlūn Mosque | Mecca | 9.27° | - |
| unknown | unknown | Asnaq | Iran | Friday Mosque | Mecca | 4.15° | - |
| unknown | unknown | Fahraj | Iran | Masjid i Jāmi' | Mecca | 10.84° | 9 century |
| unknown | unknown | Ṣalālah | Oman | Al Balīd Mosque | Mecca | 5.33° | 10th century |

All mosques after this chart have a Mecca Qibla

Above: Qibla data drawn from undisturbed Qiblas of new mosques built during these years.

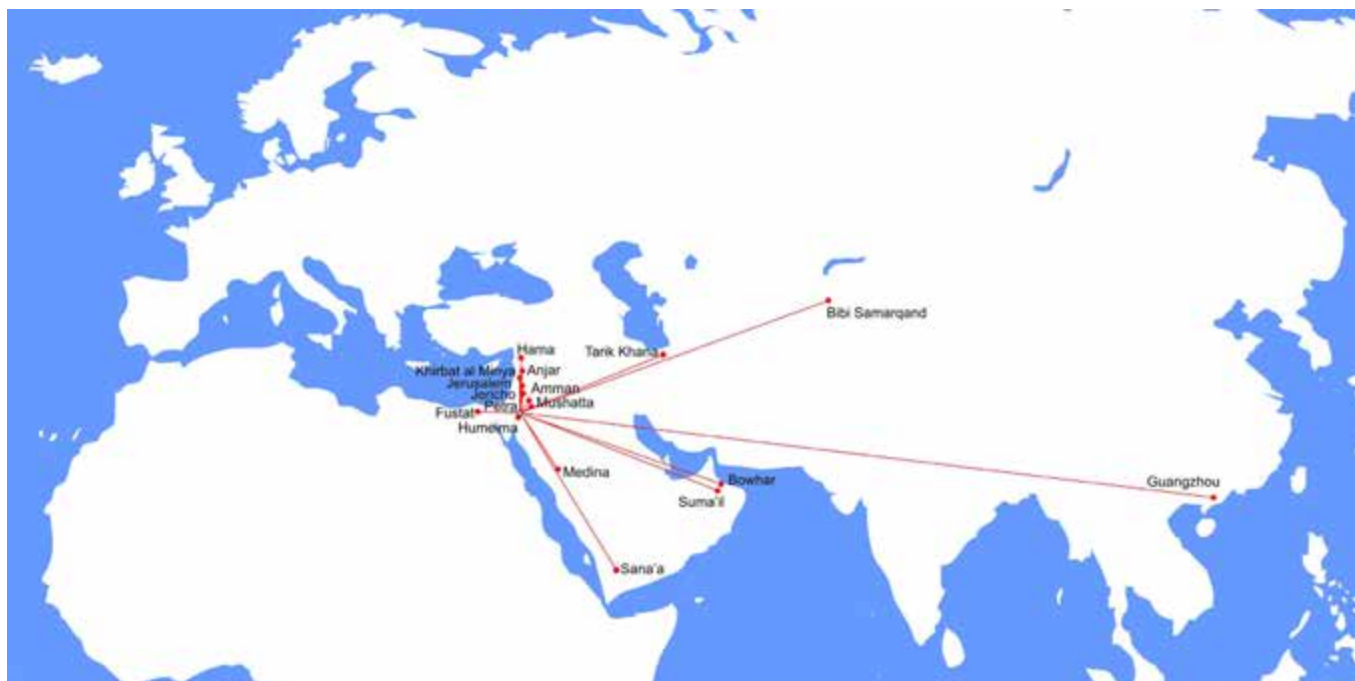


The Short List and Maps

Below are the mosques that point to Petra

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|------------------|--------------|----------------------|----------------|------------------|----------------------|
| 5 | 626 | Medina | Saudi Arabia | Qiblatain Mosque | Petra & Jer. | - | 1987 CE |
| 6 | 627 | Guangzhou | China | Grand Mosque | Petra | 2.81° | never |
| 15 | 637 | Hama | Syria | Jāmi' Hama al'Kabīr | Petra | 0.61° | never |
| 21 | 642 | Fuṣṭaṭ | Egypt | 'Amr ibn -Al-As | Petra | - | 211 AH |
| 80 | 699 | Humeima | Jordan | Qaṣr Humeima | Petra | 7.33° | never |
| 86 | 705 | Ṣan'ā | Yemen | Grand Mosque | Petra & Jer | 0.36° | never |
| 87 | 706 | Khirbat al Minya | Israel | Khirbit al Minya | Petra | 0.8° | never |
| 89 | 708 | Damghan | Iran | Masjid i Tarik Khana | Petra | 5.59° | never |
| 90 | 709 | Jerusalem | Israel | Al Aqṣa Mosque | Petra | 3.43 | never |
| 95 | 714 | Jericho | Israel | Khirbat al-Mafjar | Petra | 0.59° | never |
| 95 | 714 | 'Anjar | Lebanon | 'Anjar Palace Mosque | Petra | 3.61° | never |
| 125 | 743 | Amman Airport | Jordan | Mushatta Palace | Petra | 3.99° | never |
| unknown | unknown | Bowhar | Oman | Sahī Ramdah Mosque | Petra | 0.58° | never |
| unknown | unknown | Suma'il | Oman | Suma'il Omani Mosque | Petra | 1.55° | never |
| unknown | unknown | Samarkand | Uzbekistan | Bibi Samarkand | Petra & Jer. | 1.78° | never |

Note above: Mosque degrees of error vary from 7.33° to 0.26° with an average of 2.5° from Petra.



Above: Mosques from the first century of Islam where we can still determine their original Qibla direction 1 - 109 AH

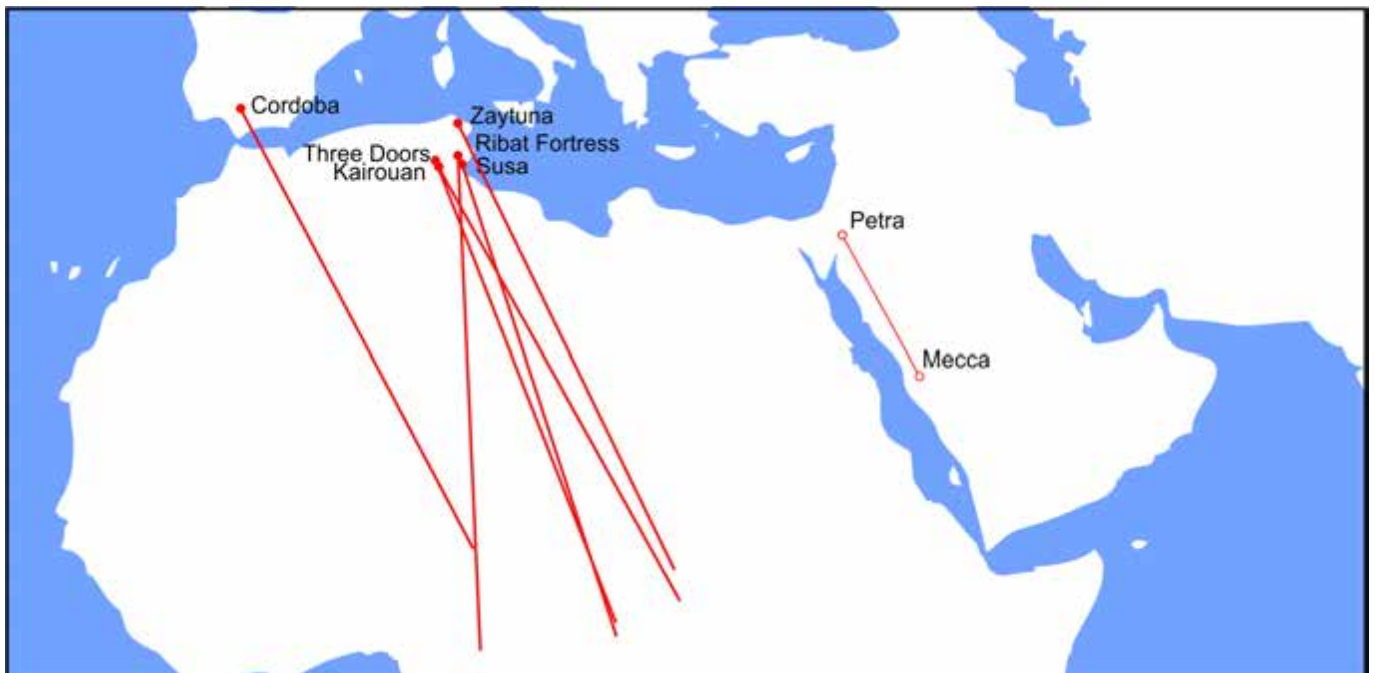
Above: Mosques that point to Mecca where we can still determine their original Qibla direction 109-245 AH.



Above: Mosques that point between Mecca and Petra 87 -155 AH

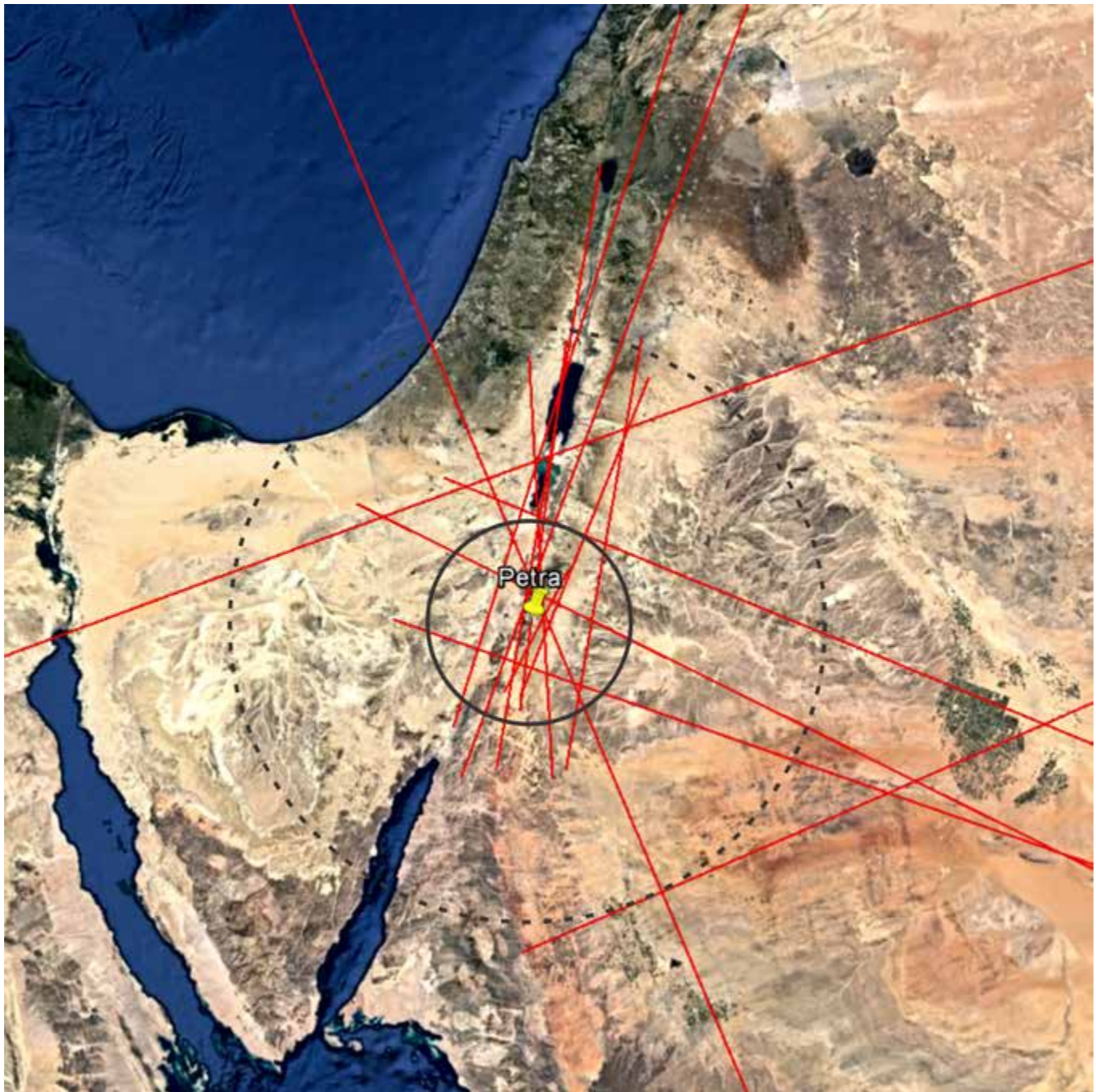


Above: Mosques that point parallel to a line drawn between Mecca and Petra 115- 252 AH



The satellite photo below illustrates the accuracy of the Qiblas that pointed to Petra. While the early Arabs were not able to get their qiblas absolutely exact, there are only two qibas that lie outside of a 75 km (45 mile) circle below. While two qibla are outside of this inner circle, many of the Qiblas are less than 20 kms from Petra, and a few are extremely accurate.

Once I realized that Petra was the focus of the first mosque qiblas, I began a thorough search of all of the early Islamic accounts. I also lived within that 45 mile circle, and searched much of it for three years, carefully checking every major archeological site in that region.







Individual Mosques

In the following pages, I examine each of the individual mosques listed in the charts on the previous pages. I provide further information such as GPS coordinates, a history of the mosque, photos, and comments on the Qibla. To learn more about those mosques that point *between* or *parallel* check the first mosque where this phenomena started. The mosques are listed in order of the Islamic date AH (after Hijra). When unsure, check back to the master chart on pages 8 and 9.

Where I can accurately determine the original Qibla direction, I provide a table and a series of compasses. An example is illustrated below.

The left compass is that of the actual mosque. This mosque points at 304.32° on a 360 degree compass (as compared to a 224 degree early Arab compass which we will use later). The next compass to the right shows a Qibla that would point at Petra. In this case the mosque in question misses Petra by only 0.26 degrees. The next compass to the right shows a Qibla direction to Mecca. This particular mosque's Qibla misses Mecca by 75.01 degrees. The compass on the far right shows what a Jerusalem Qibla would have been from this mosque. In this case the mosque's Qibla misses Jerusalem by 1.65 degrees.

| Actual Mosque | Petra | Mecca | Jerusalem |
|---|---|--|---|
| 304.32° | 304.06° | 229.31° | 305.97° |
| Misses by: | 0.26° | 75.01° | 1.65° |
|  |  |  |  |

These compasses allow you to compare the various possible Qibla directions of this mosque. The conclusion is that this mosque's Qibla points closest to Petra, but Jerusalem is quite close as well. This is why it is important to survey all of the mosques, to get an accurate understanding of where the original Qibla might actually be. The chart above is for the Qubā Mosque, which is the principle example of why Muslims have claimed that they used to pray to Jerusalem. And while it is true that this mosque's Qibla is very close to Jerusalem, it is actually pointing closer to Petra. But it must be compared with other mosques of the same period to get a clear picture of where the earliest Qiblas pointed.

Qubā Mosque

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|--------|--------------|-------------|----------------|------------------|----------------------|
| 1 | 622 | Medina | Saudi Arabia | Qubā Mosque | unknown | - | 435 AH |



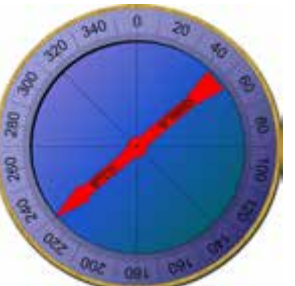

GPS Coordinates:

24.46'83.33"N 39.610833°E

More information can be obtained from:

<http://archnet.org/sites/548>



| Actual Mosque | Petra | Mecca | Jerusalem |
|---|---|--|---|
| 304.32° | 304.06° | 229.31° | 305.97° |
| Misses by: | 0.26° | 75.01° | 1.65° |
|  |  |  |  |

I have not been able to personally visit the mosques in Medina so I have had to rely on reports from friends who have been there and who have taken photos. The Qubā Mosque, which is just outside of Medina, is the first and oldest mosque ever built in Saudi Arabia, and believed to be the oldest surviving mosque anywhere. It is believed that the first stones were positioned by the prophet Muḥammad on his emigration from the city of Mecca to Medina, and that the mosque was completed by his companions. Muḥammad spent more than 20 nights in this mosque (after migrating) praying qasr (a short prayer) while waiting for Ali whose house was behind this mosque. This mosque was originally built around 622 CE, but subsequent renovations and rebuilding have changed it so much that it is not possible to examine the original foundations and determine the direction of the original Qibla.

Some believe that Caliph Uthmān made the first renovations to this mosque during his lifetime.¹⁶ It was renovated again in 435 AH, then in 555 AH and 671, 733, 840, 881 and 1245 AH.¹⁷ In 1985 it was again

¹⁶ Ibn a;-Zubāla, *Akḥbār Al-Madīna*, (Arabic), pg. 115

¹⁷ <http://archnet.org/sites/548> Retrieved September 2016

demolished and rebuilt. With so many renovations, it is no longer possible to determine the original Qibla direction.

There are many Hadiths that mention the mosque of Qubā. It is best known as being the place where they received the announcement about the change of directing of prayer. Below are some of these Hadiths. Notice what these Hadiths say about where the previous Qibla faced. Note that the Arabic word for “north” and also for “Damascus” is the same: sham.

Ibn ‘Umar reported that the people were praying the morning prayer in the Qubā’ mosque when a person came to them and said, “Allah has revealed some of the Qur’ān to the Prophet in which we have been ordered to face the Ka’ba, so face it.” They immediately turned their faces from Sham to the Ka’ba.”¹⁸

While the people were offering the Fajr prayer at Qubā, someone came to them and said: “It has been revealed to Allah’s Apostle tonight, and he has been ordered to pray facing the Ka’ba. So turn your faces to the Ka’ba. Those people were facing Sham so they turned their faces towards Ka’ba.”¹⁹

Narrated Al-Bara: The Prophet prayed facing Bait-ul-Maqdis for sixteen or seventeen months but he wished that his Qibla would be the Ka’ba. and he offered `Asr prayers and some people prayed with him. A man from among those who had prayed with him, went out and passed by some people offering prayer in another mosque, and they were in the state of bowing. He said, “I (swearing by Allah) testify that I have prayed with the Prophet facing Mecca.” Hearing that, they turned their faces to the Ka’ba while they were still bowing. Some men had died before the Qibla was changed towards the Ka’ba. They had been killed and we did not know what to say about them. So Allah revealed:-- “And Allah would never make your faith (i.e. prayer) to be lost (i.e. your prayers offered (towards Jerusalem). Truly Allah is Full of Pity, Most Merciful towards mankind.”

Narrated Ibn Umar: While some people were offering Fajr prayer in the Qubā’ mosque, someone came and said, “Allah has revealed to the Prophet Qur’ānic instructions that you should face the Ka’ba, so you too, should face it.” Those people then turned towards the Ka’ba.”²⁰

Narrated Al Bara: We prayed along with the Prophet facing Bayt al Maqdis for sixteen or seventeen months. Then Allah ordered him to turn his face towards the Qibla: “And from whence-so-ever you start forth (for prayers) turn your face in the direction of al-Masjid al-Harām.”²¹

Narrated Ibn Umar: While some people were at Qubā morning prayer, a man came to them and said, “Last night Qur’ānic Verses have been revealed whereby the Prophet has been ordered to face the Ka’ba so you too should face it.” So they, keeping their postures, turned towards the Ka’ba. Formerly the people were facing sham: “And from whence-so-ever you start forth, turn your face in the direction of al-Masjid al-Harām, and whence-so-ever you are, turn your face towards it.”²²

18 Fiqh us Sunnah, 1.115 and repeated word for word in al Muwatta Hadith 14.6

19 Sahih al-Bukhāri 1.397

20 Sahih al-Bukhāri 6.15, 6:17, 6:18 (4492) (4493) (4404)

21 Sahih al-Bukhāri 6:19

22 Sahih al-Bukhāri 6:20

*Narrated Ibn Umar: While some people were offering Fajr prayer at Qubā mosque, someone came to them and said, “Qur’ānic literature” has been revealed to Allah’s Apostle tonight, and he has been ordered to face the Ka’ba so you too, should turn your faces towards it. Their faces were then towards Sham, so they turned towards the Qibla.”*²³

*Narrated Abdullah bin Umar: While the people were at Qubā offering the morning prayer, suddenly a person came to them saying, “Tonight Divine Inspiration has been revealed to Allah’s Apostle and he has been ordered to face the Ka’ba: therefore you people should face it.” Their faces were towards sham, so they turned their faces towards the Ka’ba.*²⁴

*Narrated Anas: None remains of those who prayed facing both Qiblas except myself.*²⁵

In the illustration below we can see that both Jerusalem and Petra are about the same direction from Medina. They are separated by only 4.45° so they were both basically in the same direction. This would apply to all of the mosques in Medina, so it is virtually impossible to determine from the Medina mosques if they faced Jerusalem or Petra. More mosques must be examined to understand the Qibla more fully. However, it is also interesting to note that this similarity in Qibla directions may have caused later Muslims to believe the first Qibla was towards Jerusalem, when the literature only mentioned *Sham* or north.



²³ Sahih al-Bukhāri 6:21

²⁴ Sahih al-Bukhāri 9:357

²⁵ Sahih al-Bukhāri 6:16

Mosque of the Prophet

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|--------|--------------|---------------|----------------|------------------|----------------------|
| 2 | 623 | Medina | Saudi Arabia | Jami'-al Nabi | unknown | - | 707 & 1951 |

GPS Coordinates:

24.468333°N 39.610833°E

The modern mosque on this site was built in 1951. There are no records of the Qibla direction of the earlier 707 CE or 622 CE mosques.



The Mosque of the Prophet was first built in 622 CE by the Muslim community after they reached the city of Yathrib, which would later be called Medina. There is no record of the Qibla direction of the first mosque. The mosque was situated next to the Prophet's house, and it consisted of a square enclosure built with palm trunks and mud walls. It was accessed through three doors: Rahmah to the south, Jibril to the west and al-Nisā' to the east. Within this enclosure, the Prophet created a shaded area to the south called the suffrah and aligned the prayer space facing north. As we noted in the previous mosque, this could have been towards Petra or Jerusalem as both are in about the same direction.

After the death of the Prophet, the mosque was enlarged to twice its size. In 707, Umayyad Caliph al-Walīd tore down the old structure, in order to build a larger mosque, with stone foundations and a teak roof supported on stone columns. The new mosque included the house of the Prophet under which he was buried.

This reconstruction of the mosque also included changing the Qibla wall. This is clearly communicated by al-Ṭabarī below:²⁶

In this year al-Walid b. 'Abd al-Malik ordered the pulling down of the mosque of the Messenger of God, may God bless and preserve him, and the pulling down of the rooms of the wives of the Messenger of God, may God bless and preserve him, and the incorporation of them into the mosque. Muḥammad b. 'Umar mentioned that Muḥammad b. Ja'far b. Wardan al-Banns ' said: I saw the messenger sent by al-Walid b. 'Abd al-Malik. He ar-

²⁶ Ṭabarī Vol. 23, Year 88, page 141

*rived in the month of Rabi' I in the year 88 (February-March 707 CE) with a turban wound round his head. He entered into the presence of 'Umar b. 'Abd al-'Azīz bearing al-Walīd's letter ordering him to incorporate the rooms of the wives of the Messenger of God, may God bless and preserve him, into the mosque, and to buy (the land) behind it and beside it so that it might [measure] two hundred cubits by two hundred cubits. He also said to him (in the letter) : "Move the Qibla if you are able, and you are able, because of the standing of your maternal uncles ..."*²⁷

Many historians believe that the "moving of the Qibla" at this time refers only to destroying the Qibla wall and rebuilding it again as part of the larger construction. If the reader does not know of the change of Qibla direction at this time, then this interpretation seems logical.

However, the passage specifically mentions moving the Qibla and the possible objection of the people, and 'Umar b. 'Abd al-'Azīz needing to have the support of his maternal uncles, which all points towards a momentous change that the people of Medina might strongly object to. This is one of the evidences that we have in literature that the Qibla was changed at this time. More literary evidences can be found in the book *Qur'ānic Geography*.

27 Ṭabari Volume 23, Year 88, page 141

Qiblatain Mosque, Medina

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|--------|--------------|------------------|----------------|------------------|----------------------|
| 5 | 626 | Medina | Saudi Arabia | Qiblatain Mosque | Petra & Jer. | - | 1987 CE |

GPS Coordinates:

24°29'2.72"N 39°34'43.17"E

For more information see:

<http://archnet.org/sites/580>



Masjid al-Qiblatain (Mosque of the Two Qiblas) is a mosque in Medina that is historically important for Muslims. As the name states, this mosque uniquely contained two Qiblas. This is an important mosque for our study as the original structure was built around 626 CE and further renovations maintained the original two Qiblas. In 1987 the mosque was completely renovated, removing the old prayer niche that faced north, but maintaining the one facing Mecca. This mosque has undergone several major reconstructions, the latest being in 1987. Nothing remains of the original mosque, but 'Abdel Wahid el Wakil, an architect, made excellent drawings of the earlier structures before the mosque was torn down and replaced with the new building. When the old mosque was torn down, the foundation stones of the earlier mosque underneath revealed that the original building faced north towards both Petra and Jerusalem which were in almost the same direction. This is true of every mosque in Medina. (map below).



Janad Mosque

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|-------|---------|--------------|----------------|------------------|----------------------|
| 6 | 627 | Janad | Yemen | Janad Mosque | unknown | - | 1011 CE |

GPS Coordinates:

13°40'7.49" N 44°10'0.06"E

This mosque is located in Yemen, near the city of Ta'iz which I visited in 1984. It was rebuilt in 919-1011 CE (317-407 AH), destroyed in 1162-63 CE (558 AH) and rebuilt in 1180 CE (575 AH.) The qibla of the rebuilt mosque faces closer to Mecca than any other direction. Since this mosque was rebuilt so many times, it is impossible to determine its original qibla direction.

For more information see: <http://archnet.org/sites/3811>







Left: The author (right) with several other young men drove through much of Yemen from 1983-1985. They preferred a Volkswagen van because of its high clearance allowing it to go where many Toyota pick-ups could not. They had permission to travel from the Yemeni government and collected many fascinating stories of their exploits.

Guangzhou Grand Mosque

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|-----------|---------|--------------|----------------|------------------|----------------------|
| 6 | 627 | Guangzhou | China | Grand Mosque | Petra | 2.81° | never |

GPS Coordinates:

23° 7'33.65"N 113°15'13.21"E

| Actual Mosque | Petra | Mecca | Jerusalem |
|---|---|--|---|
| 291.66° | 294.97° | 284.55° | 296.52° |
| Misses by: | 2.81° | 7.11° | 4.86° |
|  |  |  |  |



The Great Mosque of Guangzhou, known also as Huaisheng Mosque (Memorial of the Holy Prophet) or the Guangta Mosque (Light Tower Mosque) is thought to be the earliest surviving mosque in China, and has the earliest freestanding minaret in China. Manuscripts from 1206 claim that the mosque was originally built by an uncle of the Prophet, Abu Waqqas, on a trade mission to China in the 630's, during Muḥammad's lifetime. The mosque was then rebuilt in 1350 during the Yuan dynasty under the rule of Zhizheng (1341-1368), and rebuilt again in 1695 under Emperor Kangzi of the Qing dynasty after it was destroyed in a fire. The Huaisheng Light Tower, the mosque's unique namesake minaret, was built at an earlier period. Like its contemporaries at Quanzhou, Hangzhou and Yangzhou, the Great Mosque of Guangzhou is notable for its integration of the local Han building tradition with imported Arab styles.

I personally examined this mosque with a GPS unit in 2008 and found it challenging to determine if the builders rebuilt on the original foundations. The current mosque faces 12 degrees north of where the qibla should be, meaning that it faces Petra. Because of its great distance from Arabia, local Muslims feel that it is close enough to Mecca.



Left: The author at the door of the mosque complex and beside the light tower that acted as a minaret.



For more information see: <http://archnet.org/sites/3970>

Jowatha Mosque

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|--------------|--------------|----------------|----------------|------------------|----------------------|
| 8 | 629 | al-Kilabiyah | Saudi Arabia | Jowatha Mosque | unknown | - | 9th century |

Above: The Jawatha mosque was rebuilt in the 9th century to face Mecca. The original qibla is unknown.



Jawatha Mosque is located in the village of Al-Kilabiyah, about 12 km northeast of Hofuf, Al-Ahsa, Saudi Arabia. It was the earliest mosque built in eastern Arabia and most of the original structure is in ruins but the site is still used for prayer. It was built in the seventh year of Hijra at the hands of the Bani Abd al-Qays tribe which lived there before and early in the Islamic period. This mosque is believed to be the first mosque built in Eastern Province and is where the second Friday congregation prayer in Islam was offered, the first being held at the Prophet's Mosque in Medina. When the Black Stone was stolen from Mecca by those protesting against Mecca becoming the holy City of Islam, it was apparently kept in this mosque for nearly 22 years.²⁸ Most of the mosque's original structure has been lost and it remains in danger of collapse. Only five small mud-brick arches remain. The visible ruins have been dated from the 9th century CE.

²⁸ Madelung, W., Karmati, Encyclopedia of Islam, Vol IV, Brill, 1997, page 662

Cheraman Juma Mosque

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|-----------------|---------|---------------|----------------|------------------|----------------------|
| 8 | 629 | Methala, Kerala | India | Cheraman Juma | unknown | - | 11 century |

GPS Coordinates:

10°12'46.38"N 10°12'46.38"N

The Cheraman Juma Masjid is a mosque in the Indian state of Kerala. Built in 629 CE, it is the first mosque in India. It was built by Malik Deenar, an Arab propagator of Islam and a follower and contemporary of Islamic Prophet Muḥammad. It is believed that this mosque was first renovated and reconstructed in the 11th century CE and the original qibla cannot be determined.



Masjid ‘Umar ibn al-Khattāb

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|------------------|--------------|----------------------|----------------|------------------|----------------------|
| 13 | 634 | Dawmat al Jandal | Saudi Arabia | ‘Umar ibn al-Khattāb | unknown | - | 1793 |

GPS Coordinates:

29°48’43.30”N 39°52’3.83”E



Dumat al-Jandal is an ancient city of ruins located in North Western Saudi Arabia in the Al Jawf Province. The name Dumat al-Jandal means literally “*Dumah of the Stone*”, since this was the territory of Dumah, one of the twelve sons of Ishmael. The city’s ancient Akkadian name was Adummatu.

The Mosque of ‘Umar Ibn al-Khattāb is situated in the town of Dawmat al-Jandal, a major intersection of ancient trade routes linking Mesopotamia, Syria and the Arabian Peninsula. The mosque itself was built in 634-644 CE. However, the actual building appears to have been built in a much later period, casting doubt upon its attribution to Umar Ibn al-Khattāb. Some scholars attribute it to the Umayyad Caliph ‘Umar bin Abdul Azīz, and some believe that the mosque was named after Bani’Amr, a tribe that settled in Dawmat al-Jandal.

The north (qibla) wall of the mosque faces the al-Marid Castle across a street. On its other three sides, it is surrounded by dense urban housing. Like the other old buildings in the town, the mosque is built in

stone. It is composed of a courtyard preceding the main prayer hall to the south and another space, also used for prayer, to the north.

The mihrab is a narrow, highly pointed niche in the center of the qibla wall, and is defined by a similar niche with three built-in stone steps to its right. The mihrab, the minbar, and the lower part of the qibla wall are plastered white. Viewed from the exterior, one sees that the mihrab and minbar protrude slightly out of the qibla wall. Also visible is an exposed stone staircase constructed along the qibla wall from the street side that reaches the mud roof. The minaret shaft has a rectangular shape that tapers upward to end in a pyramidal roof. The four internal floors of the shaft were accessed by a now-collapsed spiral staircase entered from the mosque.

The Saud family is believed to have rebuilt the prayer hall in 1793. Later, in the mid-nineteenth century, the Saud family restored the mosque. In 1975, buildings surrounding the minaret from the south and the west were demolished, and the minaret and the mosque restored yet again.

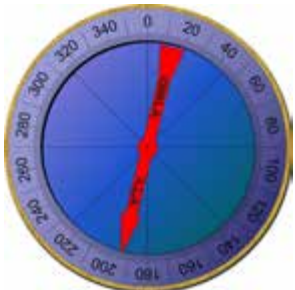
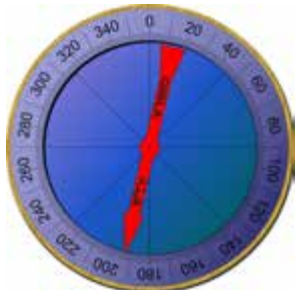
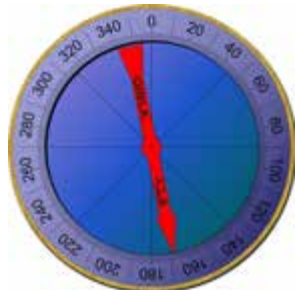
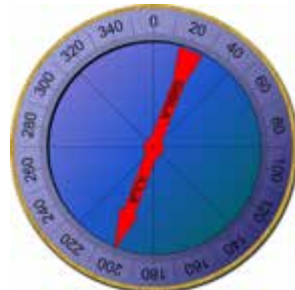
For more information see: <http://archnet.org/sites/3796>



Jāmi' Hama al'Kabīr

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|------|---------|---------------------|----------------|------------------|----------------------|
| 15 | 637 | Hama | Syria | Jāmi' Hama al'Kabīr | Petra | 0.61° | never |

GPS Coordinates: 35° 8'3.87"N 36°44'55.63"E

| Actual Mosque | Petra | Mecca | Jerusalem |
|---|---|--|---|
| 193.87° | 193.26° | 168.06° | 201.04° |
| Misses by: | 0.61 ° | 25.81° | 7.17° |
|  |  |  |  |



Located in Bab al-Qubli Quarter west of the citadel, Jāmi' al-Kabīr, the Great Mosque, was build on the site of a Roman Temple built about 250 CE. The temple was converted into a Byzantine Church approximately 100 years later, and then to a mosque in 636-637 CE/14-15 AH. In the illustration above you can clearly see that the mosque is oriented towards Petra rather than Mecca.

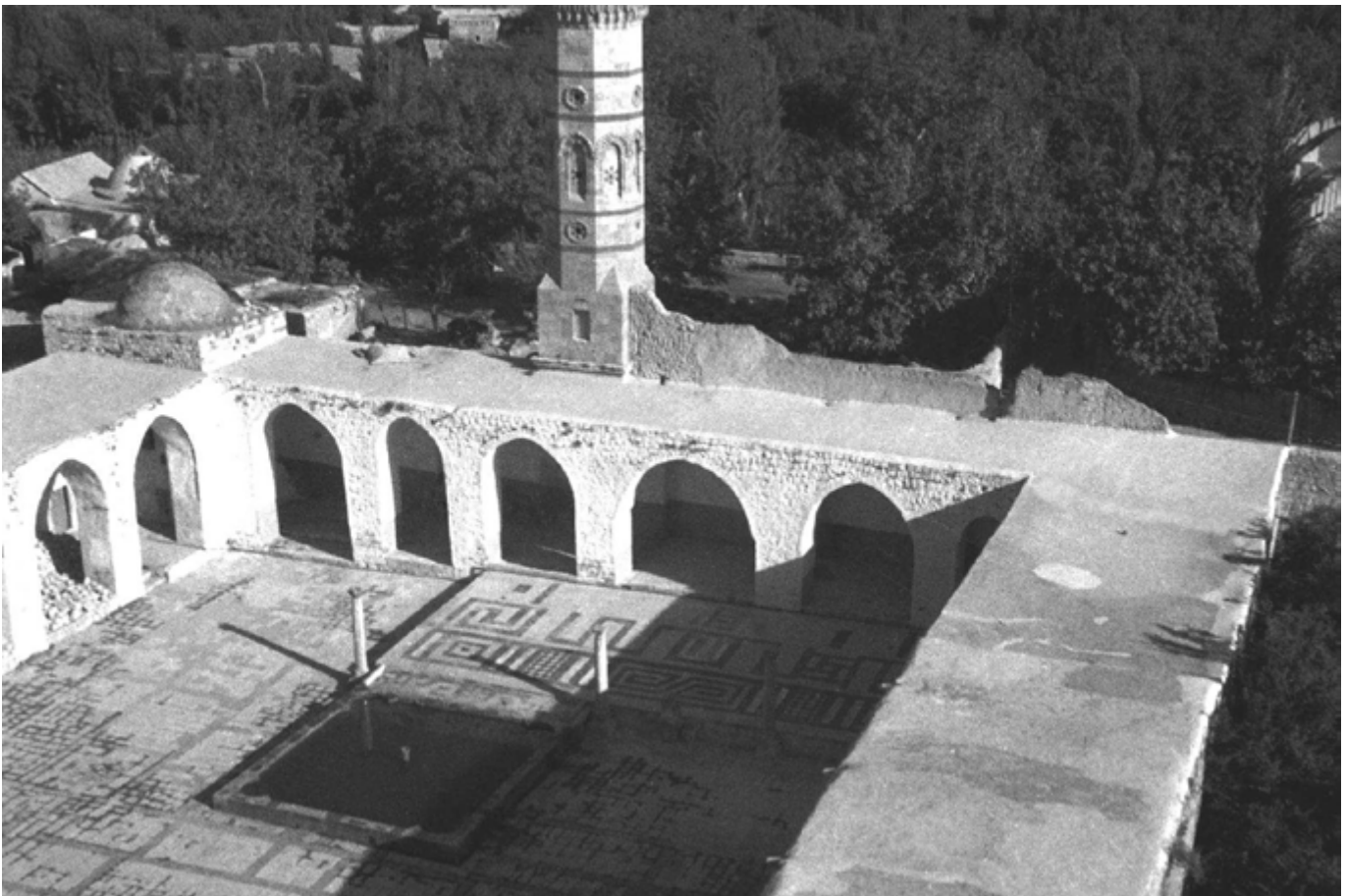
The prayer hall has five domes in the shape of a cross, and originally had five entrances. Two are now

converted to windows. The courtyard is enclosed by a vaulted portico and contains an elevated treasury like the one in the courtyard of the Umayyad Mosque in Damascus (709-15/90-96 AH). There are two minarets. A square minaret is adjacent to the prayer hall and dates back to the early decades of the twelfth century, though sources vary on the exact date of construction. The other, near the north doorway, is octagonal in shape and was built by ca. 1427 CE by the Mamlūks. The western portico opens onto a mausoleum containing the tombs of 13th century Ayyubid Caliphs.

The mosque was destroyed in bombardments to suppress a 1982 uprising in Hama. The Syrian Antiquities Department then rebuilt the mosque according to the original Umayyad design.

Below: the courtyard in 1940 before the modern reconstruction.

For more information see: <http://archnet.org/sites/3497>



Mosque of the Prophet Yunus

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|--------|---------|----------------|----------------|------------------|----------------------|
| 16 | 637 | Mosoul | Iraq | Jami' al-Yunus | unknown | - | 1393 CE |

GPS Coordinates:

36°20'34.45"N 43° 7'36.95"E



A shrine was built on this spot in 16 AH or around 637 CE to commemorate the prophet Yunus (Jonah). Centuries later in 1393 CE, Tamurlane tore down the shrine and built a mosque on the spot. The yellow line comes from Mecca, demonstrating that this mosque's qibla points to Mecca.

On July 24, 2014, the building was blown up by the Islamic State. A security source, who kept his identity anonymous, told the Iraq-based al-Sumaria News that ISIS militants “seized control of the mosque completely.” The militants then closed all doors and prevented worshipers from entering to pray. They then detonated explosives, destroying the mosque and damaging several nearby houses. They stated “the mosque had become a place for apostasy, not prayer.”²⁹

For more information see: <http://archnet.org/sites/14987>

²⁹ IraqiNews.com. 24 July 2014. Retrieved 24 July 2014

Masjid Kūfa

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|------|---------|-------------|----------------|------------------|----------------------|
| 16 | 638 | Kūfa | Iraq | Masjid Kūfa | unknown | - | 749 CE |

GPS Coordinates:

32°01'43"N 44°24'03"E



The date of construction of the original mosque is unknown. It is assumed that it was built by Caliph ‘Umar when he established the city around 16 AH. However, in 686 CE or 67 AH during the second Islamic Civil war, the city of Kūfa sided with Ibn Zubayr against Damascus, choosing Ibn al-Zubayr’s qibla of Mecca in Saudi Arabia as their Qibla: When the armies of Kūfa met Ibn al-Zubayr, *Bujayr ibn ‘Abdallah al Musli spoke: Praise be to God who has tested us with shackles and has tested you by your forgiving us. Ibn Zubayr, we are people who turn to the same Qibla as you.*³⁰

Some believe that the mosque plan was made by Ziyād ibn Abihi around 50 AH but some place its re-construction later, after the end of the Second Civil War (131 AH); based on the lack of manpower and political will due to the intense fighting and reoccurring famine. The new mosque (built in 749 CE) faced Mecca in Saudi Arabia and was surrounded by a trench and an arcade of marble columns that extended 20 meters in length. It measured approximately 100 square meters with the side of the qibla organized into five aisles and the others arranged into two. According to early literary sources, the aisles were demar-

³⁰ Ṭabarī 21:107 [740]

cated by masonry block columns that rose to the height of the mosque's flat roof, which was described as being rather high. Creswell posits that the design was reminiscent of an apadana, an architectural structure similar to a "Hall of Columns" for Persian kings.

This mosque is revered for many reasons: It is claimed to be the place where 'Ali was fatally wounded by a poison-coated sword while prostrating in the Fajr prayer. It also contains the tombs of Muslim ibn 'Aqil, Hani ibn 'Urwa, and Mukhtar al-Thaqāfi. There are markers within the mosque indicating the locations for where the court of 'Ali used to preside, where he was claimed to perform miracles, and where 'Ali ibn Husayn and Ja'far as-Sadiq used to perform ṣalāt. Islamic traditions relate that it was the dwelling place of Noah and that this was the place where he built the Ark. According to Shia belief, it was from this mosque that the diluvium of Noah started submerging earth, as well as being the place from where the water was re-absorbed - also marked within the mosque. Imam Ja'far as-Sadiq said that up to twelve miles of land in all directions from the mosque are blessed by its holiness. Ja'far al-Sadiq was also recorded as remarking that the "mosque in Kūfa is superior to that of Jerusalem" and that "performing two prostrations of prayer here would be better for me than ten others at any mosque." There are also Shia traditions which state that performing one prayer in this mosque is the same as having performed one thousand prayers elsewhere, and performing one obligatory prayer here is equal to having performed an accepted Hajj. The secretariat of Al-Kūfa Mosque and its Shrines describes the mosque as being one of the sole four dignified mosques to which Muslims must travel, and that it comes in third place after the Ka'ba and the mosque of Prophet."

For more information visit: <http://archnet.org/sites/3823>

'Amr ibn -Al-As Mosque

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|--------|---------|-----------------|----------------|------------------|----------------------|
| 21 | 642 | Fuṣṭaṭ | Egypt | 'Amr ibn -Al-As | Petra | - | 211 AH |

GPS Coordinates:

30°0'38.74"N 31°13'54.09"E



The Mosque of 'Amr ibn al-'As was founded by the Muslim conqueror of Egypt in 641 CE near his house in the town of Fuṣṭaṭ, outside of Cairo. This mosque was rebuilt and enlarged in 673 CE during the reign of Mu'awiya, who is said to have added a minaret to each of its four corners.

Today the mosque does not exist in its original form, having undergone numerous restorations so that the original foundation is no longer evident.

However, a description of the original ground-plan of the mosque shows that the qibla pointed east and had to be corrected towards Mecca later under the governorship of Qurra ibn Sharik.³¹

Interestingly this agrees with the later Islamic tradition compiled by Ahmad ibn al-Maqrizi that 'Amr ibn al-'As prayed facing east, and not more towards the south.³²

For more information see: <http://archnet.org/sites/1511>

³¹ Creswell 1969, pages 37,150

³² 31 al-Maqrizi 1326 page 6; Crone-Cook 1977 pages 24,173

Hala Sultan Tekke

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|---------|---------|-------------------|----------------|------------------|----------------------|
| 28 | 649 | Larnaca | Cyprus | Hala Sultan Tekke | unknown | - | 1323 CE |

GPS Coordinates:

34°53'6.56"N 33°36'38.53"E



Most accounts establish a connection between this site and the death of Umm Haram during the first Arab raids on Cyprus under the Caliph Muawiyah between 647 and 649 CE, which were later pursued throughout the Umayyad and the Abbasid periods. According to these accounts, Umm Haram, being of very old age, had fallen from her mule and had died during a siege of Larnaca. She was later buried where she died. According to Shia belief, her grave lies within Jannatul Baqi cemetery in Madinah, Saudi Arabia. The modern mosque was built by this tomb in 1232 AH in Ottoman style. No previous Qibla can be determined.

Mosque of Sidi ‘Ukba

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|--------|---------|----------------------|----------------|------------------|----------------------|
| 67 | 686 | Biskra | Algeria | Mosque of Sidi ‘Ukba | unknown | - | 416&1214AH |

GPS coordinates

34°44’57.81”N 5°53’50.99”E



The original buildings date to 67 AH (686 CE).³³ However, the Sidi ‘Uqba mosque was built around ‘Uqba ibn Nafi’s tomb. The tomb has no qibla or mihrab in itself. There are a number of inscriptions in the mosque. For instance while the construction of the tomb is given as 67/686 according to an inscription on the tomb, there are some epitaphs dating a reconstruction to 416 AH (1025 CE).³⁴ Another inscription on a wooden plank on a wall carries an inscription with the a date of 1215 AH (1800); similarly the mosque’s mihrab is dated to 1214 AH (1789). Since there have been two reconstructions, and one of them specifically dealing with the Qibla, we cannot use this mosque in our study. This mosque is an excellent example of an early mosque that we can no longer be absolutely certain of where the original qibla pointed.

33 Ali Lafer “Sidi ‘Uqba (mosque, minaret and tomb)” in *Discover Islamic Art, Museum With No Frontiers*, 2016. 2016. http://www.discoverislamicart.org/database_item.php?id=monument;isl;dz;mon01;15;en

34 According to Captain H. Simon in his “Notes sur le mausolée de Sidi Okba” (*Revue Africaine*, 1909, pl. III), these dates refer to expansions.

Dome of the Rock

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|-----------|---------|------------------|----------------|------------------|----------------------|
| 71 | 690 | Jerusalem | Israel | Dome of the Rock | unknown | - | never |

GPS Coordinates:

31.7780°N 35.2354°E



Known as Al-Harām al-Sharīf, this monument is part of an enormous open-air platform of artificial construction that houses the congregational mosque of al-Aqṣa, numerous memorial buildings and fountains and is surrounded by many madrasas. The platform was built during Herodian times (1st century CE) to accommodate the new Jewish Temple (that was burned shortly after its completion). The Dome of the Rock is built approximately in the center of the Haram on an additional platform, it is the most prominent building in al-Haram al-Sharīf both in terms of height and colors.

The Dome of the Rock was built by the Umayyad Caliph Abd al-Malik and completed in 691 CE. While it is an early Islamic monument and one of the most admired, the original purposes for its creation have been the subject of much debate from the late Middle Ages to this day.

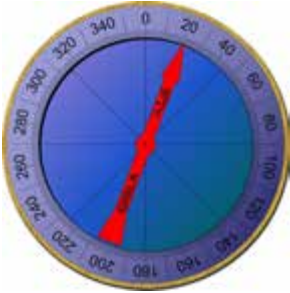

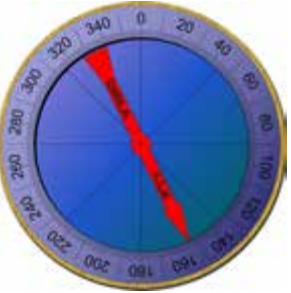
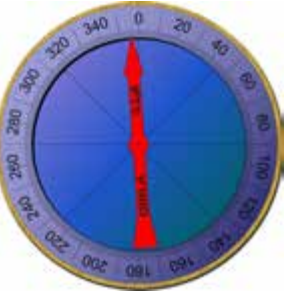
From my study of early Islamic Qiblas, I have determined that the Dome was built during the second Islamic civil war at the time when Ibn Zubayr destroyed the Qibla (I propose in Petra) and moved the Black Stone to Mecca. I believe this may be the reason that the dome contains no qibla, as the qibla direction was being contested at that very time.

For more information visit: <http://archnet.org/sites/2814>

Qaṣr Humeima

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|---------|---------|--------------|----------------|------------------|----------------------|
| 80 | 699 | Humeima | Jordan | Qaṣr Humeima | Petra | 7.33° | never |

GPS Coordinates:
29°56'59.64"N 35°20'45.33"E

| Actual Mosque | Petra | Mecca | Jerusalem |
|---|---|--|---|
| 20.64° | 13.31° | 153.66° | 357.06° |
| Misses by: | 7.33° | 133.02° | 23.58° |
|  |  |  |  |

J.P. Oleson of the University of Victoria (Canada) excavated this site in ancient Hawara or modern Hu-



meima in southern Jordan. The Abbasid Qaṣr was identified in 1993. It is a rectangular structure consisting of a large courtyard surrounded by rooms fronting the court, which also acted as the prayer area until later a small mosque was constructed outside the southwest corner. Ceramics and coins provide rich and

precise documentation of the date, and the remains of frescoes and carved ivory furniture indicate a taste for luxury and wide commercial connections appropriate to this politically active family. The site was abandoned around 750 A.D.

The Umayyad Palace Qaşr at Humeima was built during the early Islamic era by Ali, a grandson of 'Abbas, a paternal uncle of the prophet Muḥammad. The Qaşr would have either included a small prayer room or the central court would have been used for prayer, therefore the alignment of the entire building should have been according to the qibla. The building is oriented northeast corresponding to a Petra qibla, only 27 miles to the north. Later a smaller outside mosque was built with a qibla pointing closer to Mecca.




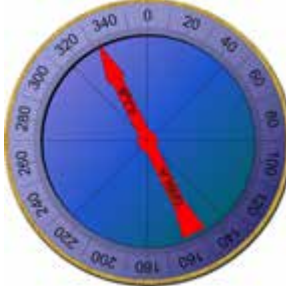


Above: Beside the Umayyad Qaşr is the ancient city of Howara. Water was brought into the city by an aqueduct, and stored in underground cisterns.

Şan'a Grand Mosque

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|-------|---------|--------------|----------------|------------------|----------------------|
| 86 | 705 | Şan'a | Yemen | Grand Mosque | Petra | never | never |

GPS Coordinates:

15°21'11.28"N 44°12'54.80"E

| Actual Mosque | Petra | Mecca | Jerusalem |
|--|--|---|--|
| 333.60° | 333.24° | 326.12° | 335.07 |
| Misses by: | 0.36° | 8.8° | 1.45° |
|  |  |  |  |

Summary: Petra is closer to the mosque Qibla than Mecca or Jerusalem



The Great Mosque of Ṣan'ā is in the capital city of Yemen. According to early sources, the Prophet Muḥammad commanded the construction of this mosque, including its location and dimensions, sometime around 630 CE. While the validity of this claim lacks certainty, the mosque remains one of the early architectural projects in Islam. Sometime between 705 and 715 CE, the Umayyad Caliph al-Walīd I rebuilt and enlarged the mosque. Like previous examples, this mosque points directly towards Petra, but since the Mecca Qibla is close it could be argued that it also points in the general direction of Mecca. In 1972 and 2010, caches of early versions of the Qur'ān were discovered in this mosque.

For more information see: <http://archnet.org/sites/3800>



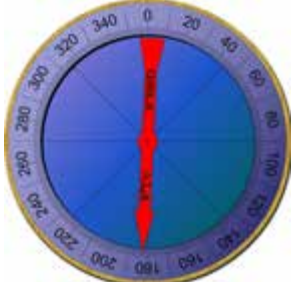
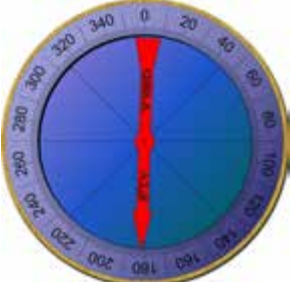


Above: Inside the mosque congregational area. (c) Abdul-Halim Jabr 1987. Used with permission MIT.

Khirbat al Minya

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|------------------|---------|------------------|----------------|------------------|----------------------|
| 87 | 706 | Khirbat al Minya | Israel | Khirbit al Minya | Petra | 0.8° | never |

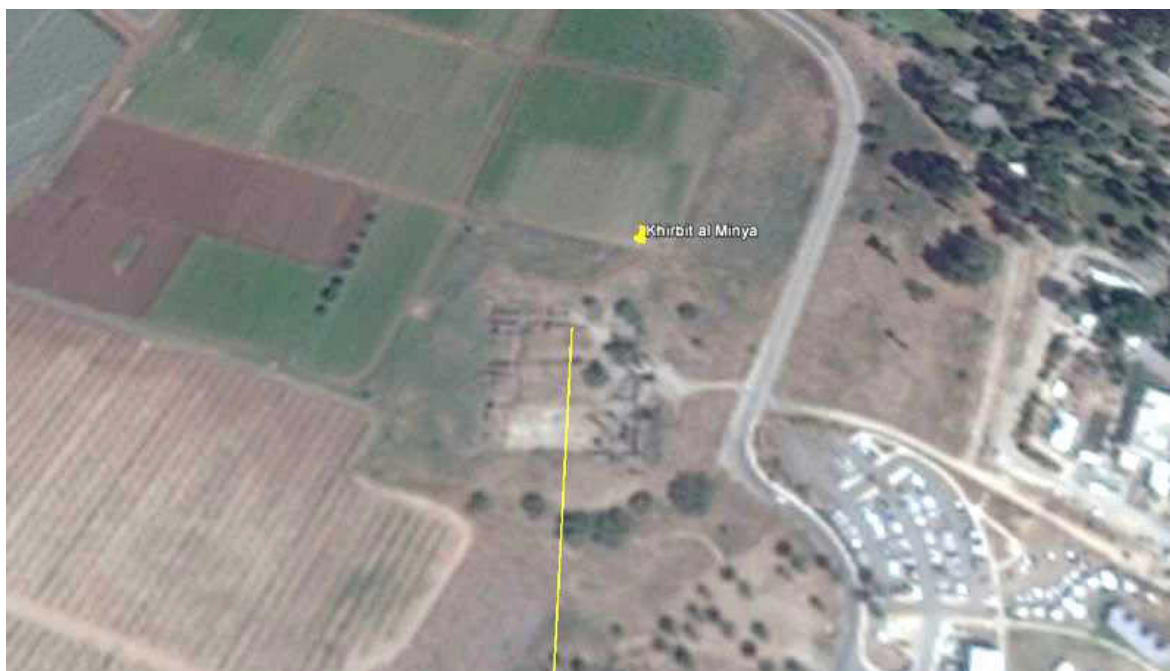
GPS Coordinates:

32°51'56.40"N 35°32'11.72"E

| Actual Mosque | Petra | Mecca | Jerusalem |
|---|---|--|---|
| 182.67° | 181.87° | 160.53° | 193.25° |
| Misses by: | 0.8° | 22.14° | 10.58° |
|  |  |  |  |

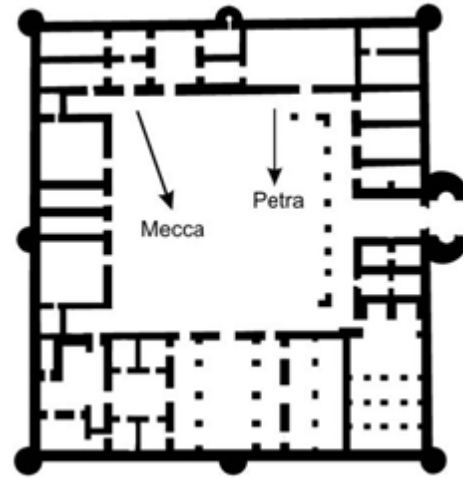
Summary: Petra is closer to the mosque Qibla than Mecca or Jerusalem.

Qaṣr Khirbat al Minya is in Israel.³⁵ This is an Umayyad-built palace located in the eastern Galilee region about 200 meters west of the northern end of Lake Tiberias.³⁶ It was erected as an Umayyad palace com-



³⁵ also known as 'Ayn Minyat Hishām

³⁶ Sea of Galilee



plex with a palace, mosque and bath built by al Walid. (The date of construction is based on an inscription set into a gateway)

The palace contained a room that was constructed for the purpose of being a mosque. It was the room with pillars in the bottom right corner. Because it is almost directly north of Petra, the mosque and the entire building points directly at Petra, not Mecca which is more southeast. The floor plan and photo on the previous page show a line drawn from Petra back to this structure. Below and on the next page are photos of this structure. The floor plan was obtained from www.archnet.org.

For more information please visit: <http://archnet.org/sites/5574>



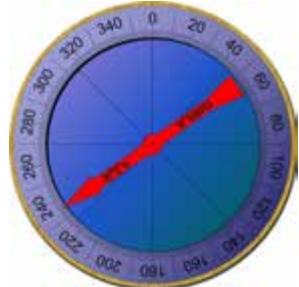


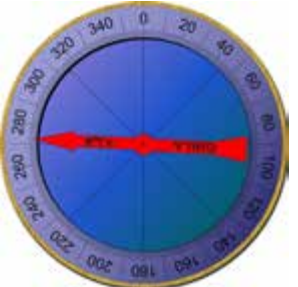


Wāsiṭ Great Mosque

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|-------|---------|---------------|----------------|------------------|----------------------|
| 87 | 706 | Wāsiṭ | Iraq | Ḥajjāj Mosque | between | .29° | never |

GPS Coordinates:

31°46'51.15"N 45°30'42.49"E

| Actual Mosque | Petra | Mecca | Jerusalem |
|---|---|--|---|
| 234.98° | 263.08° | 207.47° | 272.69 |
| Misses by: | 27.51° | 22.14° | 37.71° |
|  |  |  |  |

Summary: This mosque points directly between Petra and Mecca

Wāsiṭ was an Islamic city south of Kut in Iraq, built in the last quarter of the the 7th century CE by al-Ḥajjāj bin Yousif Al-Thaqāfi, as an administrative centre for Iraq. As an ancient city its circumference was 16 KM. It was abandoned in the tenth century after a change in the Tigris river bed. For many years its remains stood sound and safe due to its distant site away from constructive and agricultural influence. Most of its buildings are of bricks. Investigations took place there between 1936-1942, then in 1985. Its large mosque and a building known as the minaret was cleared out, including a tomb and a school that dates back to the seventh century AH. Preservations took place on some parts of the minaret due to walls been worn out, but no real maintenance has been carried out.

The Wāsiṭ Mosque in Iraq has been the center of much discussion. Originally, Creswell and Fehervari studied the ground plans of this mosque and claimed that this mosque pointed to Jerusalem.³⁷ However, further research has shown that this mosque does not point to Mecca or Jerusalem, but somewhere in between. In their Internet article on the website Islamic Awareness, “The Qibla of Early Mosques, Jerusalem or Makkah?:³⁸ the authors clearly demonstrate that the qibla of the Wāsiṭ mosque points to neither Jerusalem (too far north) or Mecca (too far south).

³⁷ Creswell, 1969 pg 137 & 1989, pg 40; Fehervari, 1961, pg 89; Crone-Cook 1977, pgs 23 & 173

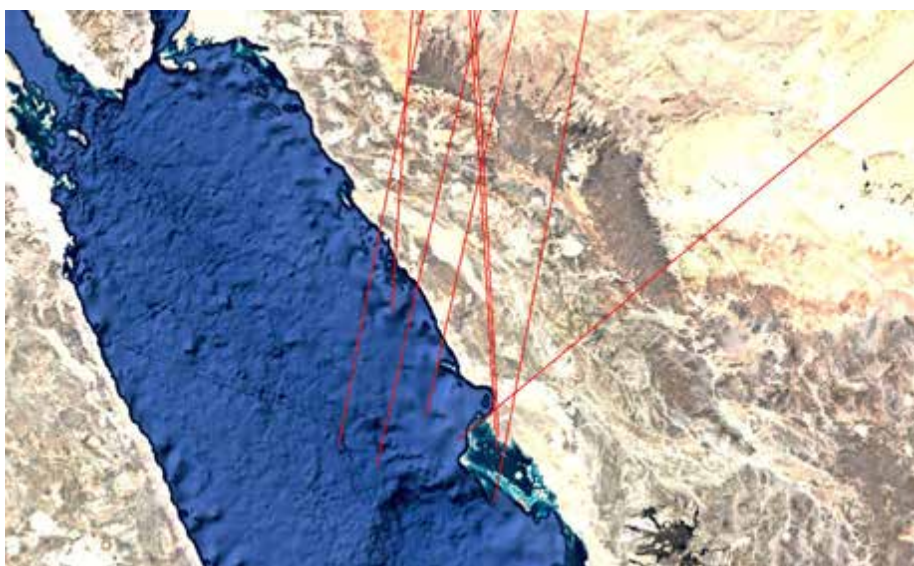
³⁸ http://www.islamic-awareness.org/History/Islam/Dome_Of_The_Rock/qibla.html M S M Saifullah, Muḥammad Ghoniem, 'Abd al Rahman, Robert Squires and Man'ur Ahmed

Instead they discovered that the qibla pointed between Jerusalem and Mecca. From my calculations I demonstrate that this mosque points directly between the Petra and Mecca, within less than one degree of accuracy.

Those familiar with the history of al-Ḥajjāj bin Yūsuf Al-Thaqāfi will remember that it was he who led the fight against Ibn Zubayr in the Holy City. This book demonstrates that this city was Petra in Jordan, so when Ḥajjāj set out to build this mosque that would bear his name, he did not want it to point to that city. Especially since the Black Stone had been moved into Saudi Arabia. However, Ḥajjāj also fought against those who moved the stone, and naturally would have refused to point his mosque at this new usurper city. So he did something totally different.

In a move that surprised everyone, he pointed his mosque directly between the two cities. On the other hand, Jāhiz includes the setting of the qibla of Wāsiṭ among the misdeeds of Walid I and family. (Note: al-Hajjaj's daughter wed Masrur, son of al Walid I.)³⁹

This protest by al-Ḥajjāj against the change of Qibla to Mecca was echoed by others in the Abbasid empire, and was followed by a series of mosques being pointed between Mecca and Petra. (See map below)



Left: The between Qiblas do not point to any particular place: not Meda'in Saleh, Dedan, Tayma, Kaybar nor Jebal Lawz or any other archeological site. They simply point between Petra and Mecca from their particular angle.

For more information see page 172 "*When did the Qibla change?*"


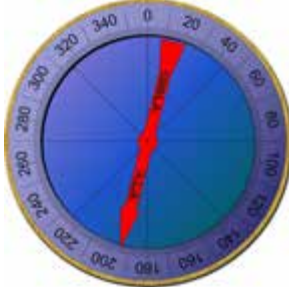
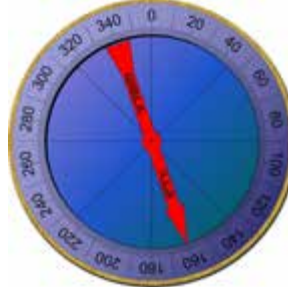
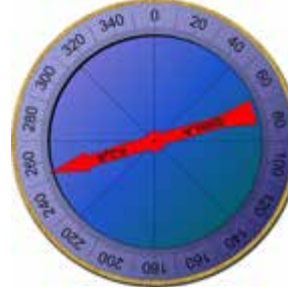
39 al-Sandubi, H. (ed.), *Rasā'il-Jahiz*, Cairo 1933, p. 296; and Crone, *Hagarism*, page 173

Amman Umayyad Mosque

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|-------|---------|----------------|----------------|------------------|----------------------|
| 82 | 701 | Amman | Jordan | Umayyad Mosque | Between | 7.09° | never |

GPS Coordinates:

31°57'16.48"N 35°56'4.53"E

| Actual Mosque | Petra | Mecca | Between |
|---|---|--|---|
| 183.10° | 194.44° | 160.82° | 172.38° |
| Misses by: | 11.34° | 22.28° | 7.09° |
|  |  |  |  |



Summary: This mosque points closer to the Between position than it does to Petra or Mecca

The foundation of the old mosque on the Amman citadel (the square in the centre of the photo above) is about 30 meters square. This building was built around 700 CE. So far, it has not been possible to



absolutely date the time of construction of these buildings, but they were built early during Umayyad rule. However if you examine the photo you can clearly see that the first set of buildings (center) pointed south.

The later buildings (previous photo with the dome) were built around 740 CE and clearly demonstrate a new focus and direction. The original buildings face Petra, but the newer buildings (built some 40 years later) face Mecca. ⁴⁰ During the period between these two constructions 'Abdallāh ibn Zubayr completely destroyed the Ka'ba and rebuilt it, possibly in a new location. This is addressed in detail in my book *Qur'ānic Geography* (pgs 296-300, 331-332. 370-371) As you can see, the old qibla of the old mosque pointed closer to Between position than to Mecca.


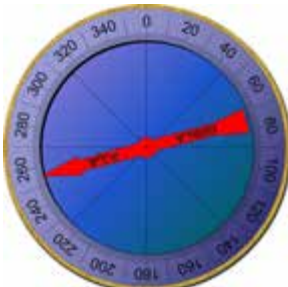
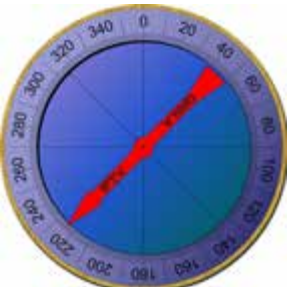
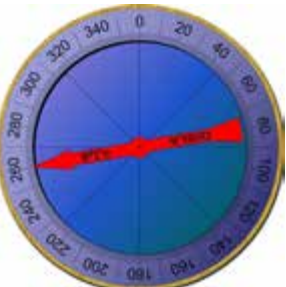
40 See page 69

Masjid al-Tarik Khana

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|---------|---------|-----------------------|----------------|------------------|----------------------|
| 89 | 708 | Damghan | Iran | Masjid al-Tarik Khana | Petra | 5.59° | never |

GPS Coordinates:

36° 9'48.91"N 54°21'15.12"E

| Actual Mosque | Petra | Mecca | Jerusalem |
|---|---|--|---|
| 249.56° | 255.15° | 224.59° | 260.06° |
| Misses by: | 5.59° | 22.39 | 13.08° |
|  |  |  |  |

Summary: Petra is closer to the mosque Qibla than Mecca or Jerusalem

The oldest extant mosque in Iran, the Tarik Khana, or 'House of God' incorporates a simple Arab plan with Sassanian construction techniques. An arcade lines the central courtyard, a single bay deep on all but the qibla side where it increases to 3 bays. The central aisle on the qibla arcade is wider and taller than the others, a form that indicates the Persian architecture. The arcades are formed of fired brick arches, elliptical and sometimes slightly pointed, and massive circular brick piers. The illustration below shows lines drawn from Petra and Mecca. Clearly this mosque faces Petra. More information about this mosque can be found at: <http://archnet.org/sites/1605>



Mihrab Introduced

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|-------------------|---------|------|----------------|------------------|----------------------|
| 89 | 708 | Mihrab Introduced | | | | | |

Immediately after Ibn al-Zubayr's rebellion and rebuilding of the Ka'ba, the mihrab mark or niche began appearing in new mosques and added to old mosques. It seems a bit strange that up until this time there was no question as to which direction the faithful should pray. The entire building faced the qibla, with one wall designated as a qibla wall. Now, however, the mihrab was added to old mosques as well new mosque construction, seeming to indicate that a new qibla direction had been introduced.



Above: Tarik Khana Mosque, Iran

Left: The Ibra Mosque Niche, Oman

From early Islamic literature it becomes clear that there were different theories of how the Mihrab niche practice began. These include:

1. 'Uthmān constructed the first prayer-niche in the Prophet's Mosque⁴¹
2. Marwān was the first to build the prayer-niche⁴²
3. It was 'Umar ibn 'Abd al-'Azīz, during the Caliphate of al-Walīd"^{43,44,45,46}

⁴¹ Ibn Battūṭa 1958, 170

⁴² Ṭabarī Vol. 23, Year 88, page 141

⁴³ 'Uthmān extended the building of the mosque, four years before he was killed p 115

⁴⁴ 'Umar Bin Abdul-Azīz is the one who also extended the Masjid but he did not change the Qibla and asked the people of Medina to witness his renovation. p. 120

⁴⁵ When Mohammad died there was no mihrab for mosques, nor during the time of the Caliphates. The first who made a mihrab was 'Umar Bin Abdul-Azīz. p 83 & 121 - 122 also referred by Samhoudi vol. 1 p. 370 and vol. 2 p. 525 and Al-Moraghy p. 51

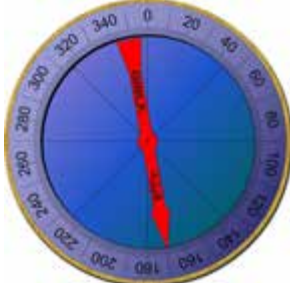
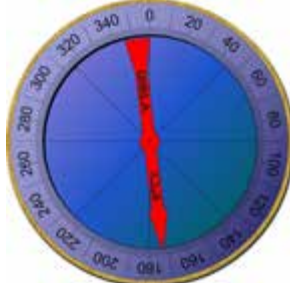

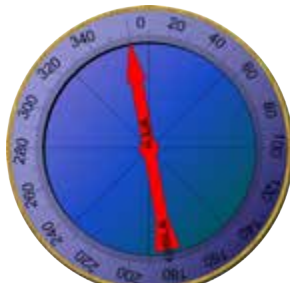
⁴⁶ When 'Uthmān died and there were still no mihrabs nor windows in the mosque. It was 'Umar Bin Abdul-Azīz who initiated the mihrab. pg 120

Al-Aqsa Mosque

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|-----------|---------|----------------|----------------|------------------|----------------------|
| 90 | 709 | Jerusalem | Israel | Al-Aqsa Mosque | Petra | 3.43 | never |

GPS Coordinates:

31°46'32.63"N 35°14'8.27"E

| Actual Mosque | Petra | Mecca | Jerusalem |
|---|---|--|---|
| 169.61° | 173.04° | 157.30° | 349.55° |
| Misses by: | 3.43° | 12.31° | n/a° |
|  |  |  |  |

Summary: Petra is closer to the mosque Qibla than Mecca or Jerusalem.



Above: The Al-Aqsa mosque is in dark grey. A yellow line has been drawn from Petra to this mosque to demonstrate that the mosque faces Petra.

The al-Aqsa mosque in Jerusalem has undergone multiple stages of construction and renovations over the years. It is generally agreed that 'Abd al- Malik, (685-705) the Umayyad Caliph who was the patron of the Dome of the Rock, started the construction of al-Aqsa Mosque at the end of the 7th century.⁴⁷ A major building phase took place during the time of the caliphate of his son, al-Walid (709-715). The building suffered from several major earthquakes and was renovated and reconstructed during the Abbasid period by Caliph al-Mahdī (775-785), and possibly by Caliph al-Manşūr (754-775). This mosque in Jerusalem does not point to Mecca but rather points 169.23° which is towards Petra, only 160 miles away.

John Moschus was born in the mid-sixth century. He wrote "*Pratum spirituale*" or *Spiritual Meadow* which contained 304 short stories on the feats and achievements of holy men, plus anecdotes about suffering, temptation, evil and piety, as well as an appendix of thirty additional stories. Story 19 tells of the Muslims who began to build a mosque on a place called the Capital in Jerusalem. If this account is true, then construction of Al Aqsa on the Temple Mount began soon after its capture around 637 CE. (16 AH)^{48, 49}

The Arabic accounts of 'Umar's visit to Jerusalem are discussed by Bussee, "Umar in Jerusalem." The monk Anastasius of Sinai informs us that after an earthquake he witnessed clearing work being undertaken on the Temple Mount around 660 CE.⁵⁰

For more information see: <http://archnet.org/sites/2809>



47 Ṭabarī Vol. 12, translated by Yohanan Friedmann, page 193

48 *Seeing Islam as Others Saw it*, Robert Hoyland, 1997, pages 63-65

49 Caetani, Chron. 200-201 CE

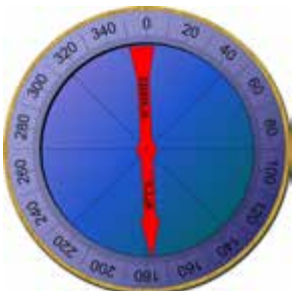
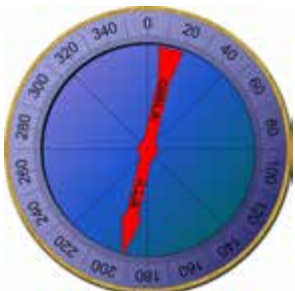
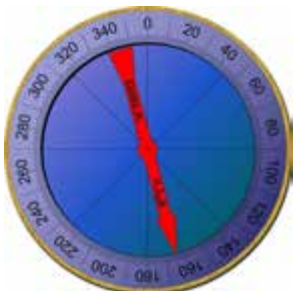
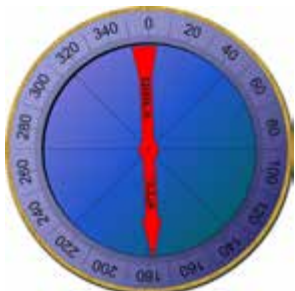
50 Haldon (1992) and Blair, *What is the date of the Dome of the Rock?*

Jāmi' al-Umawi al-Kabīr

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|----------|---------|-------------------|----------------|------------------|----------------------|
| 91 | 709 | Damascus | Syria | al-Umawi al-Kabīr | between | 1.75° | never |

GPS Coordinates:

33°30'41.98" N 36°18'24.85"E

| Actual Mosque | Petra | Mecca | Between |
|---|---|--|---|
| 177.21° | 193.25° | 164.67° | 178.96° |
| Misses by: | 20.25° | 8.33° | 1.75 |
|  |  |  |  |

Summary: This mosque points between Petra and Mecca



This mosque holds a shrine which is said to contain the head of John the Baptist. The head was supposedly

found during the excavations for the building of the mosque. There are also many important landmarks within the mosque for Shi'a Muslims. Among them is the place where the head of Husain (the grandson of Muḥammad) was kept on display by Yazid I. There is also the tomb of Saladin, (Ṣalāḥ al-Dīn) which stands in a small garden adjoining the north wall of the mosque.

The construction of this mosque was based on the design of the house of Muḥammad in Medina, having many functions: it was a place for personal and collective prayer, religious education, political meetings, administration of justice and relief for the ill and homeless. This mosque was the most impressive in the Islamic world at the time. The interior walls were covered with fine mosaics considered to depict paradise, which an interesting tradition holds, so impressed Muḥammad that he declined to enter it, preferring to taste paradise in the afterlife. (Note: this mosque was built 77 years after Muḥammad died.) The Damascus Mosque was considered one of the marvels of the world because it was one of the largest in its time.

This mosque was one of the first mosques (the other being al-Aqṣa Mosque in Jerusalem) to be shaped in such a way so that visitors could easily see the mihrab and each other. The interior of the mosque is mainly plain white, although it contains some fragmentary mosaics and other geometric patterns.

It is thought that the mosque used to have the largest golden mosaic in the world at over 4,000 m². The mosque has been rebuilt several times due to fires in 1069, 1401, and 1893 CE, each time upon the same foundation stones. Many of the early mosaics were lost, although some have been restored since. The minaret in the southeast corner is called the Minaret of Jesus, as some Muslims believe that this is where Jesus will appear at the end of the world. It is interesting to note that the current mosque does not face Mecca but rather a point between Petra and Mecca. (See Wāsiṭ, page: 42)

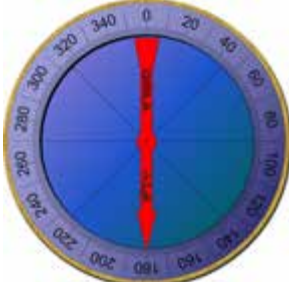
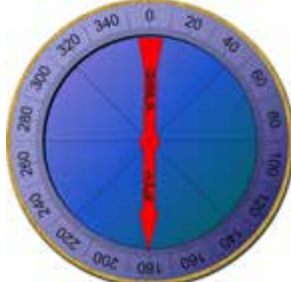
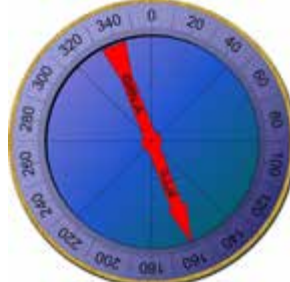



Khirbat al-Mafjar

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|---------|---------|-------------------|----------------|------------------|----------------------|
| 95 | 714 | Jericho | Israel | Khirbat al-Mafjar | Petra | 0.59° | never |

GPS Coordinates:

31°52'58.97"N 35°27'35.81"E

| Actual Mosque | Petra | Mecca | Jerusalem |
|---|---|--|---|
| 180.03° | 180.62° | 158.52° | 241.49° |
| Misses by: | 0.59 ° | 21.51° | 61.46 |
|  |  |  |  |

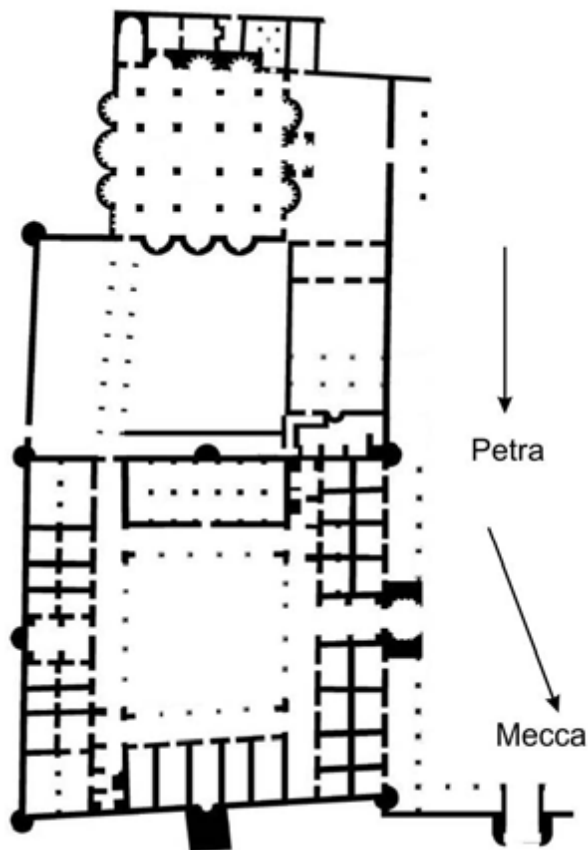
Summary: This mosque points directly at Petra

The Khirbat al Mafjar Mosque is located near Jericho in the Jordan Valley. Due to the poor state of the ruins, and the poor quality satellite photos, I have chosen to use a drawing of the ruins from Archnet.org. Khirbat al-Mafjar (see the plan right) remains one of the most highly sophisticated Umayyad palaces known for its elaborate mosaics, stucco carvings and overall sculptural magnificence.

Khirbat al- Mafjar was built during the reign of Hishām Ibn 'Abd al-Mali, and was abandoned around 744 CE when the Umayyad dynasty collapsed and the Abbasids rose to power. The Abbasids never rebuilt the palace.

Once again this is a palace that contained a mosque. The palace was located almost directly north of Petra, so the mosque (bottom center room) faces south as shown in the floor plan, rather than towards Mecca.

From the drawing we can see that the original mosque



(with no mihrab niche) faced toward Petra, but a later a mihrab niche was added which needed reinforcing. That niche faced more towards Mecca.

See <http://archnet.org/sites/4136> for more information.



Above: A beautiful mosaic floor, possibly depicting the Tree of Life in Khirbat al- Mafjar.

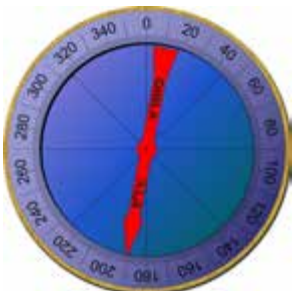
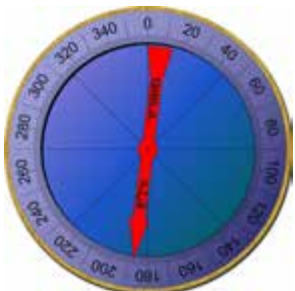
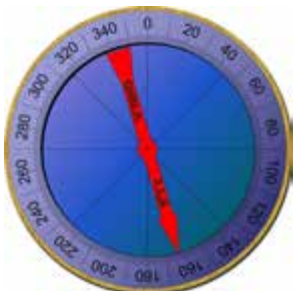
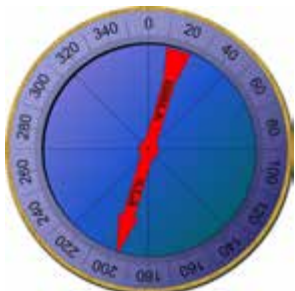


‘Anjar Palace Mosque

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|--------|---------|---------------|----------------|------------------|----------------------|
| 95 | 714 | ‘Anjar | Lebanon | Palace Mosque | Petra | 3.61° | never |

GPS Coordinates:

33°43’55.23”N 35°56’1.79”E

| Actual Mosque | Petra | Mecca | Jerusalem |
|---|---|--|---|
| 190.76 ° | 187.15° | 163.40° | 196.93° |
| Misses by: | 3.61° | 27.36° | 6.17° |
|  |  |  |  |

Summary: This mosque points almost directly at Petra.



In Islamic texts the palace at “Anjar is often called *‘Ayn al-Jarr*. The ‘Anjar palace and mosque are located 58 kilometers from Beirut, just a short distance from the Litani River. ‘Anjar is the only exclusively Umayyad site in Lebanon. Its name originates from the term “‘Ayn Gerrah” which means “the source of Gerrah” in Arabic, referring to an ancient fortress in the region. Commissioned by the Umayyad Caliph al-Walīd, son of ‘Abd al-Malik ibn Marwān in the early 8th century, it prospered as a trading city, situated strategically at the crossroad of the north-south and east-west trade routes. However, by the conclusion of Umayyad political domination, no more than thirty years later, ‘Anjar fell rapidly into disrepair and eventually was abandoned. Historically, it remains unique as the only inland commercial center in Lebanon. As the illustration on the previous page indicates, the entire complex including the palace and mosque are built with an orientation pointing towards Petra.

See <http://archnet.org/sites/3711> for more information.



Jāmi'al Umawi al Kabīr

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|--------|---------|----------------|----------------|------------------|----------------------|
| 96 | 715 | Aleppo | Syria | Umawi al Kabīr | unknown | - | 1260 CE |

GPS Coordinates:

36.199492°N 37.156911°E



This mosque is purportedly home to the remains of Zechariah, the father of John the Baptist. It was built in the beginning of the 8th century. However, the current building only dates back to the 12th century, so we cannot determine its original qibla direction. The minaret was built in 1090 and was destroyed during fighting in the Syrian civil war in April 2013. The modern mosque has a qibla towards Mecca.

You can learn more from: <http://archnet.org/sites/1804>

Masjid al Khamis

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt |
|---------|---------|--------|---------|-----------------|----------------|------------------|---------|
| 99 | 717 | Manama | Bahrain | Masid al Khamis | unknown | - | 449 AH |

GPS Coordinates:

26.2082°N 50.5483°E



The Suq al-Khamis, or Thursday Market is situated in the southern suburb of Manama, four kilometers away from Al Khamis town. The mosque's construction date is highly debated. Some archaeologists suggest that it was built in 717 CE, during the reign of the Umayyad Caliph 'Umar bin Abdul-Aziz. However, an inscription on the qibla wall attests that the current building was built in 1058 (near the end of Qaramatian rule) upon the request of two dignitaries from Bahrain, Abdulla Bin Bahlul and Abu Al Walid Musallam. At that time they oriented the mosque towards Mecca.

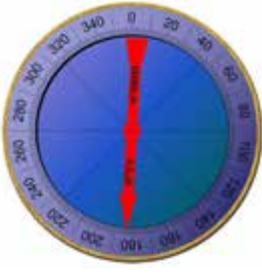

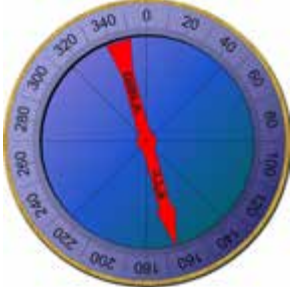
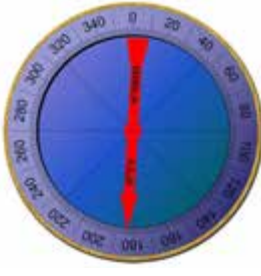
You can learn more about this mosque at: <http://archnet.org/sites/3788>

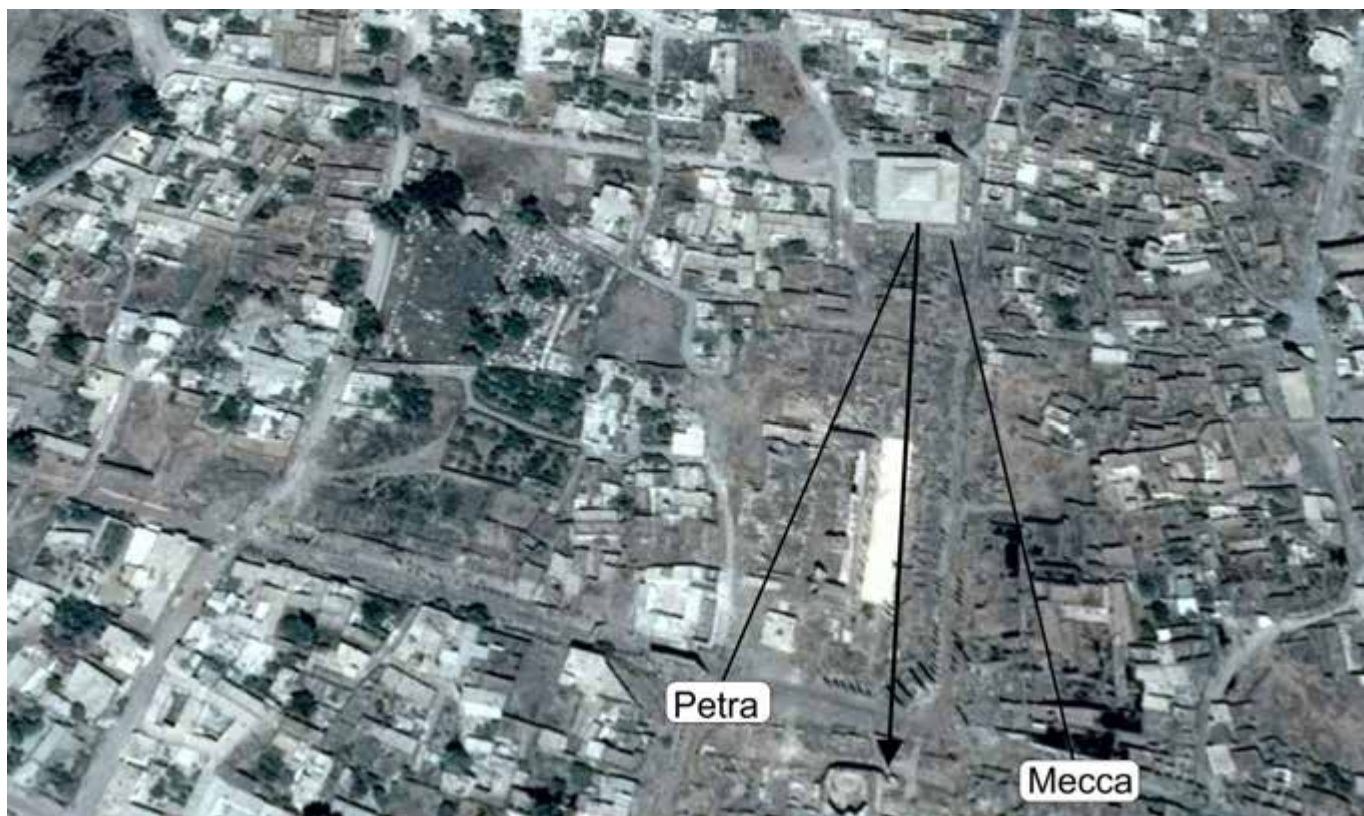
Mosque of Boşra

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|-------|---------|-----------------|----------------|------------------|----------------------|
| 102 | 721 | Boşra | Syria | Mosque of Boşra | between | 0.35° | never |

GPS Coordinates:

32°31'16.95"N 36°28'58.70"E

| Actual Mosque | Petra | Mecca | Between |
|---|---|--|---|
| 183.63° | 202.37° | 164.18° | 183.27° |
| Misses by: | 18.74° | 19.45° | 0.35° |
|  |  |  |  |



Summary: This mosque points between Petra and Mecca.

The Mosque of 'Umar is located in the ancient Nabataean city of Boşra, about 140 km south of Damascus. Although Boşra is known for its famous, still-intact theatre, the city also displays strong Islamic (especially Ayyubid) architectural influences. Some of its Islamic monuments include: Hammam Majak, Mosque of al-Khider, Mabrak Mosque, Faṭima Mosque and the Mosque of 'Umar. Caliph 'Umar, who led the Muslim conquest of Syria in 636, founded the mosque. It was completed in 720 CE by the Caliph Yazid II, and renovated and expanded in the twelfth and thirteenth centuries by the Ayyubid dynasties who also fortified the theatre and baths. As you can see from the illustration above the mosque's orientation does not point towards Mecca. You can read more about this mosque at: <http://archnet.org/sites/10552>

See Wāsiṭ Mosque to learn more about the “between” orientation, page 45.



Mosque of Ruṣāfa

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|------------|------------|---------|---------|------------------|-------------------|---------------------|----------------------------|
| 105 | 724 | Bāghdad | Iraq | Mosque of Ruṣāfa | unknown | - | unknown |

GPS Coordinates:

near 33°19'54"N 44°24'55"E

The name Ruṣāfa is used for several places in the Islamic world from Cordova in the west to Nīshāpūr in the east.⁵¹ Today al-Ruṣāfa is the name of a quarter of the city of Bāghdad which was founded soon after the caliph al-Manṣūr built his Round City. The quarter of al-Ruṣāfa (whose name refers to the paved, embanked causeway across the swampy ground enclosed by the bend of the Tigris within which the quarter was laid out) was, according to the historical accounts was built by al-Manṣūr on the eastern banks of the river, opposite the palace of al-Khuld and the Round City.⁵² The building of al- Ruṣāfa took seven years, and was not completed till 159/776, by which time al-Mahdī had (in 159/775) succeeded to the throne. The new quarter was connected to the western side of Bāghdad by a bridge of boats whose obvious strategic importance was such that each end was guarded by a police post. The foundation of al- Ruṣāfa was the starting-point for the expansion of Bāghdad's suburbs on the eastern bank. Along with the palace a large congregational mosque was constructed in the Ruṣāfa district.⁵³ There are several references also of the Suwayqat Nasr which was adjacent to the Ruṣāfa Mosque and was home to several scholars as well as being a place where traditions were exchanged.⁵⁴ The original mosque is no longer in existence.

51 Yāqūt, *Bulddān*, ed. Beirut, iii, 46-50, (see Yaqut, *Bulddān*, 249, 251, tr. 31-2, 35-6). and also Ṭabarī Vol. 3, p. 365-7

52 H. Kennedy, *Al-Manṣūr and al-Mahdī*, Albany 1990, p56-9.

53 *Crisis and Continuity at the Abbasid Court* By Maaïke van Berkel, Nadia Maria El Cheikh, Hugh Kennedy, Letizia Osti page 234

54 *ibid* page 231

Grand Hussein Mosque

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|-------|---------|----------------------|----------------|------------------|----------------------|
| 106 | 725 | Amman | Jordan | Grand Hussein Mosque | unknown | - | unknown |

GPS Coordinates:

31°56'59.16"N 35°56'5.15"E



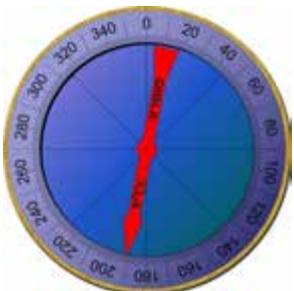
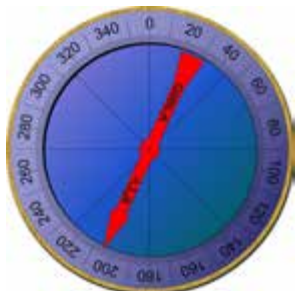
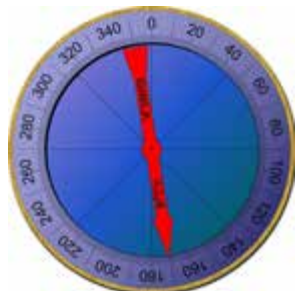
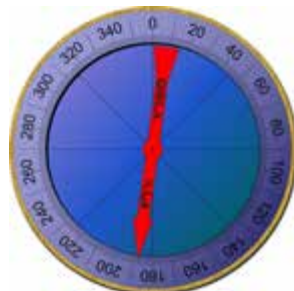
This Ottoman style mosque was rebuilt using striking pink-and-white stone in 1924 by the late King Abdullah I on the site of an ancient mosque built originally by ‘Umar ibn Al-Khattāb the 2nd Caliph of Islam. It is probably also, the site of the cathedral of the old Roman town of Philadelphia. The modern mosque faces Mecca.

Qaşr al Hayr al Gharbi

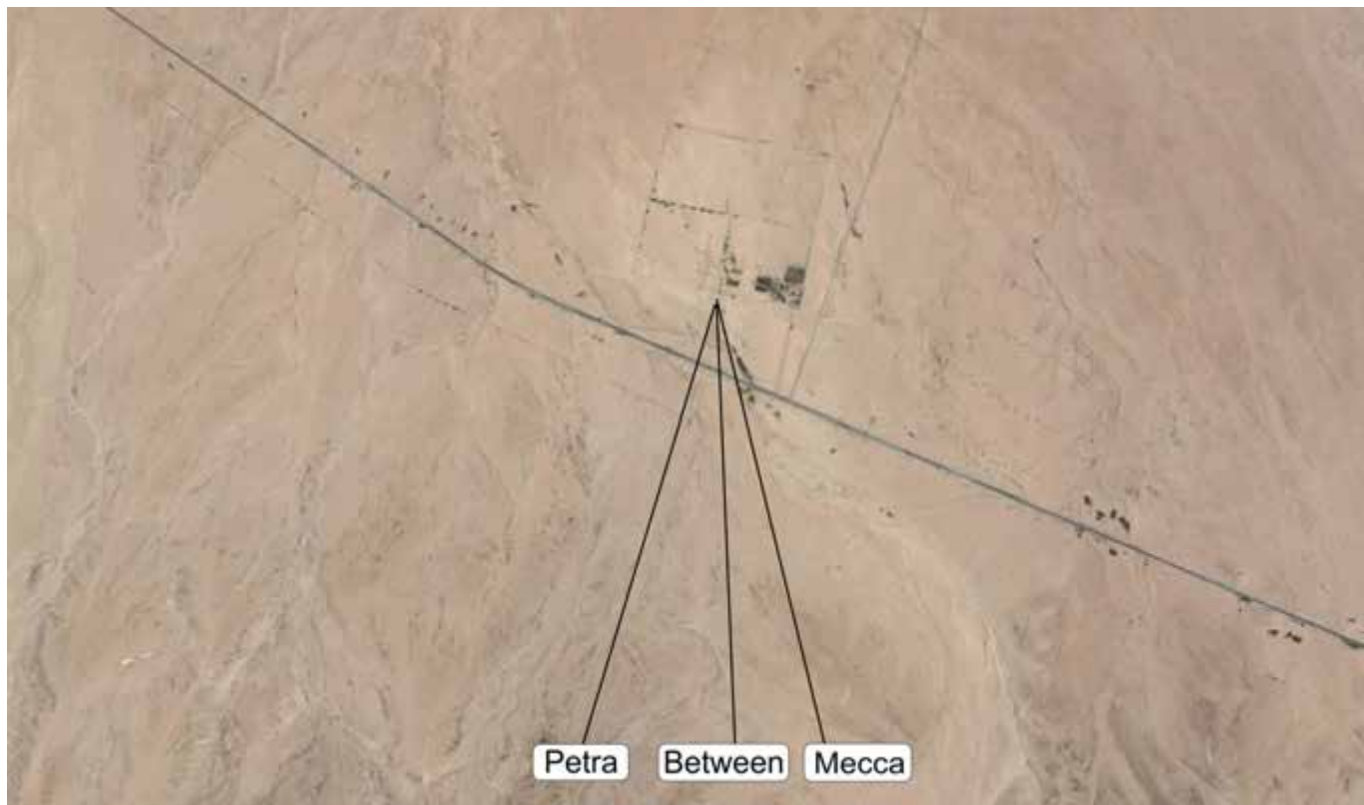
| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|----------------|---------|----------------|----------------|------------------|----------------------|
| 107 | 726 | Hayr al Gharbi | Syria | Hayr al Gharbi | between | 3.21° | never |

GPS Coordinates:

34°20'39.77"N 37°35'3.67"E

| Actual Mosque | Petra | Mecca | Between |
|---|---|--|---|
| 191.01° | 204.87° | 170.74° | 187.8° |
| Misses by: | 13.86° | 20.27° | 3.21° |
|  |  |  |  |

Summary: This mosque points between Petra and Mecca.



Qaşr al-Hayr al-Gharbi is 37 miles west of Palmyra. The mosque is in the lower left corner of this palace. It

played a very small part of the overall plan of the building, and was accessed through several other rooms. Unfortunately, the building is in such a state of ruin that it is almost impossible to accurately determine the direction of the qibla, but the whole complex seems to face somewhere between Petra and Mecca



You can learn more about this site at: <http://archnet.org/sites/4138>

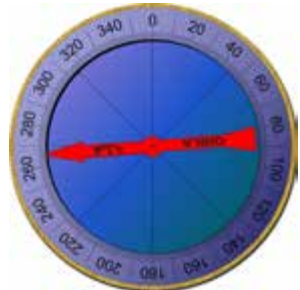

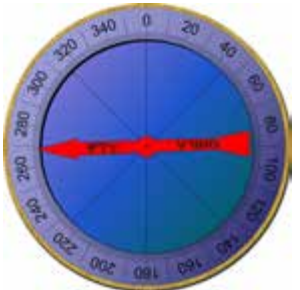

Above: The complex is so badly ruined that it is difficult to determine the exact Qibla direction. The satellite photo on the previous page provides a clue as to how the entire complex was oriented.

Banbhore Mosque

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|----------|----------|-----------------|----------------|------------------|----------------------|
| 109 | 727 | Banbhore | Pakistan | Banbhore Mosque | Mecca | 2.44° | never |

GPS Coordinates:

24°45'8.64"N 67°31'21.11"E

| Actual Mosque | Petra | Mecca | Jerusalem |
|--|--|---|--|
| 265.78 | 288.39° | 268.22° | 291.33 ° |
| Misses by: | 22.61° | 2.44° | 25.55° |
|  |  |  |  |

Summary: This mosque points towards Mecca.



This is the first mosque to point to Mecca where we can determine its original Qibla direction

The Mosque in Banbhore, Pakistan is in an area conquered by the Arab general Muḥammad ibn Qasim in 711 CE. This mosque has a qibla wall, but no mihrab. The building is oriented east to west. Unearthed

during the excavations that began in 1958 in the ancient city of Banbhore, the Jāmi' Masjid of Banbhore is one of the earliest known mosques in the Indo-Pakistan subcontinent. Its plan, deducted from archaeological remains, closely resembles the plans of congregational mosques in Kūfa and Wāsiṭ. Inscriptions found on the site date the mosque to 727 CE. This mosque faces Mecca not Petra. This mosque is notable because it is the earliest surviving mosque that clearly faces Mecca in Saudi Arabia, and it dates to 109 AH or 727 C.E.

You can learn more about this mosque at: <http://archnet.org/sites/3976>



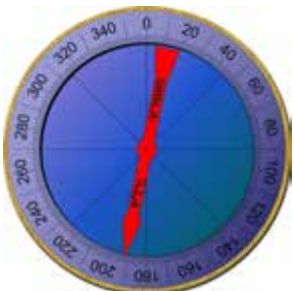
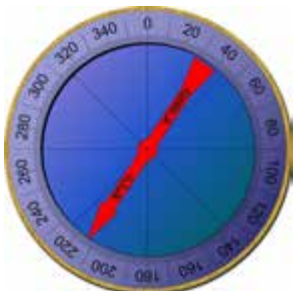
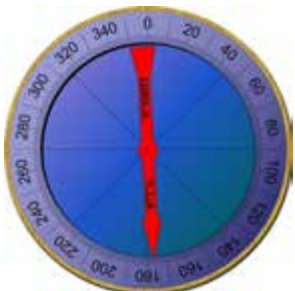
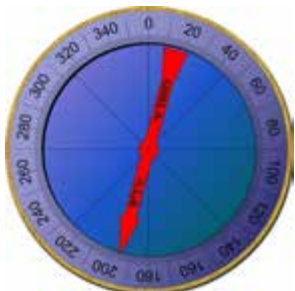
Above: The floor of the mosque remains almost fully intact.

Qaṣr al- Hayr al Sharqī

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|----------------|---------|---------------------|----------------|------------------|----------------------|
| 110 | 728 | Hayr al Sharqī | Syria | Qaṣr Hayr al Sharqī | between | 2.8° | never |

GPS Coordinates:

35° 4'25.52"N 39° 4'14.92"E

| Actual Mosque | Petra | Mecca | Between |
|---|---|--|---|
| 192.61° | 213.78° | 177.02° | 195.4° |
| Misses by: | 27.72° | 12.04° | 2.8° |
|  |  |  |  |

Summary: This mosque points between Petra and Mecca.

Qaṣr al-Hayr al-Sharqī in Syria is approximately 97 km northeast of Palmyra and 64 km to the south of Syrian Ruṣāfa. It was originally constructed in 728-9 under Caliph Hishām to be used as a retreat for the Umayyad caliphs. After Umayyad decline in regional authority, the site as absorbed and embellished by the Abbasids under Caliph Hārūn al-Rashīd and remained functional until the 14th century. The buildings and mosque don't seem to align to either Mecca or Petra but point almost directly between the two. (See page 44 and 174 for more information on “between” mosques)

You can learn more about this building at: <http://archnet.org/sites/4137>



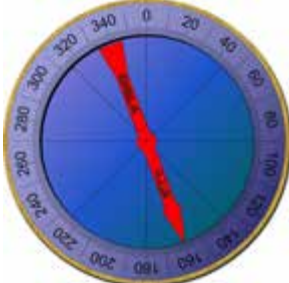
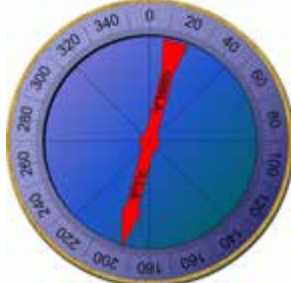
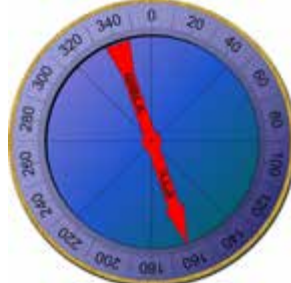
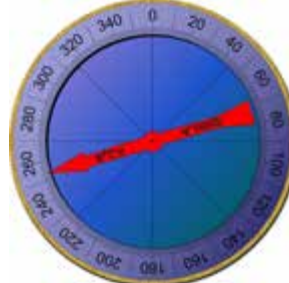


Amman Umayyad Palace

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|---------------|---------|----------------|----------------|------------------|----------------------|
| 112 | 730 | Amman Citadel | Jordan | Umayyad Palace | Mecca | 1.36° | never |

GPS Coordinates:

31°57'16.48"N 35°56'4.53"E

| Actual Mosque | Petra | Mecca | Jerusalem |
|---|---|--|---|
| 159.46° | 194.71° | 160.82° | 253.56° |
| Misses by: | 35.25° | 1.36° | 135.90° |
|  |  |  |  |

Summary: This mosque points almost towards Mecca



The second set of Umayyad buildings on the Amman Jordan citadel were built around 740 CE. The origi-

nal Umayyad palace and large mosque in the lower portion of the satellite image faced Petra⁵⁵ but the newer buildings (with the blue dome) faced Mecca. Clearly the qibla changed direction sometime between the construction of the earlier mosque (facing Petra) and the Palace which faces Mecca. For more information on the palace complex see: <http://archnet.org/sites/3545>



Above: The author outside of the Amman Umayyad Palace. (Taken from the film “The Sacred City.”)





55 See page 38

Jāmi' al-Zaytūna

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|-------|---------|------------------|----------------|------------------|----------------------|
| 115 | 732 | Tunis | Tunisia | Jāmi' al-Zaytuna | parallel | 0.99 | never |

GPS Coordinates:

36°47'50.73" N 10°10'16.88"E

| Actual Mosque | Petra | Mecca | Line - Petra to Mecca |
|--|--|---|--|
| 154.12° (rebuilt: 147.02°) | 99.73° | 112.64° | 155.11° |
| Misses by: | 54.39° | 41.48° | 0.99° |
|  |  |  |  |

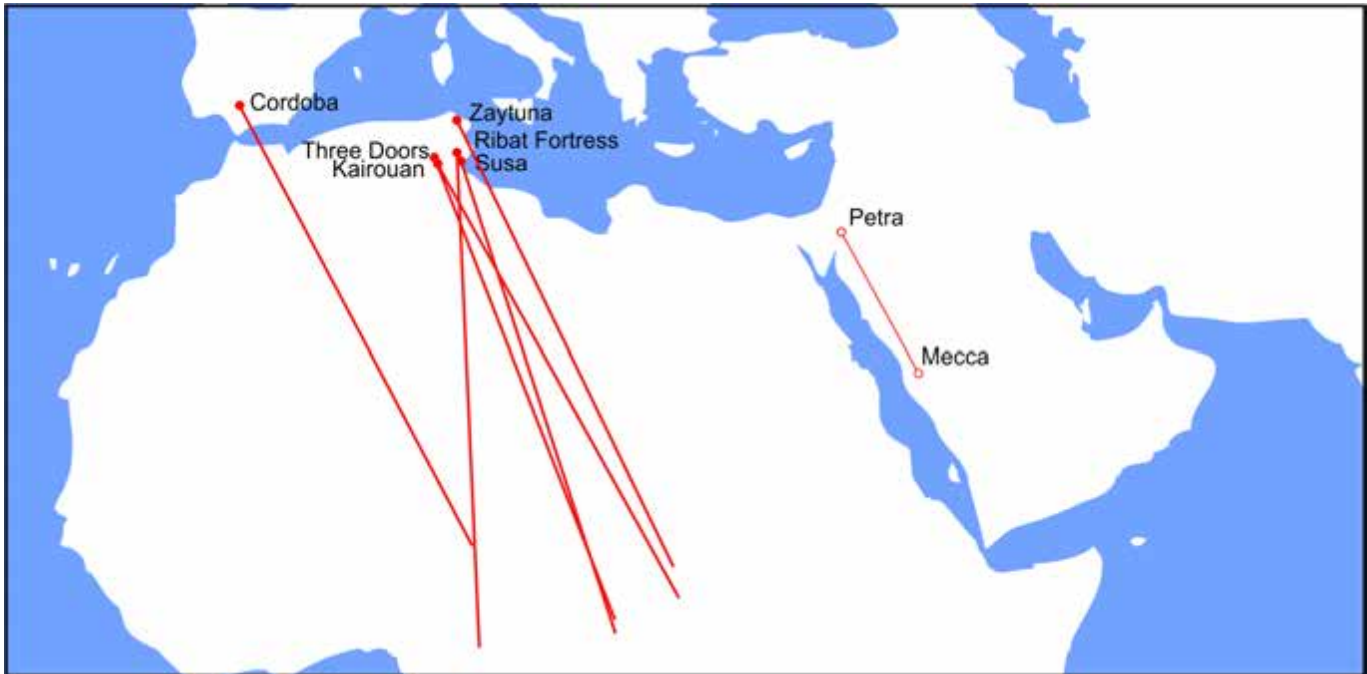


The Zaytūna mosque, or “olive tree” mosque, was initially built in 732 CE on the ruins of an old Roman

basilica in the old city of Tunis, Tunisia. Though the original structure no longer exists, literary sources attribute its construction to builder Hassan ibn Nu'man. A century after its construction, the mosque was completely rebuilt by Aghlabid amir Abu Ibrahim Ahmed (reg. 856-863 CE) to emulate another of his large building projects the Great Mosque at Qayrawān. The two mosques were reconstructed concurrently between 856 and 863 CE. In 864 renovations were funded by the Abbasid caliph Al-Musta'in. There are further similarities between the plan of the Zaytūna mosque and that of the Great Mosque at Córdoba (784-786, 961-976, 987 CE), a testament to the persisting influence that the Córdoba building had upon mosque design in Northern Africa.

You can learn more about this mosque at: <http://archnet.org/sites/3765>

On page 45, we noted that when al-Ḥajjāj started his protest against both the Petra and Mecca qiblas by pointing between them, several other new mosque constructions followed this practice. The Muslims in North Africa and Spain also seem to have used the qiblas on some of their new mosques as a protest. But rather than pointing between Petra and Mecca, they did something different. The qibla of this mosque points to the south, parallel to a line drawn between Petra and Mecca. This practice was followed by other new mosques being constructed in North Africa and Spain. Some of the later mosques had very “sloppy” qiblas indicating that exact qibla direction was probably not considered very important at the time. (See Ribāt Fortress page 87)

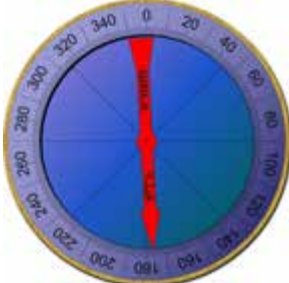
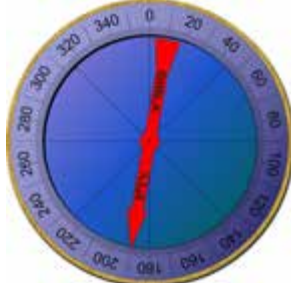
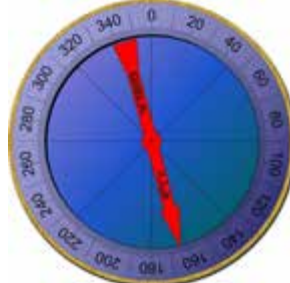
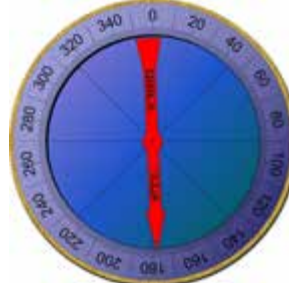


Ba'albeck Mosque

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|----------|---------|------------------|----------------|------------------|----------------------|
| 122 | 740 | Baalbeck | Lebanon | Ba'albeck Mosque | between | 0.67° | never |

GPS Coordinates:

34° 0'26.03"N 36°12'25.59"E

| Actual Mosque | Petra | Mecca | Line - Petra to Mecca |
|---|---|--|---|
| 176.86° | 190.22° | 164.84° | 177.53° |
| Misses by: | 13.36° | 12.02° | 0.67° |
|  |  |  |  |



The Great Mosque of Ba'albek in Lebanon is an Umayyad mosque dating back to about 122 AH. (Some claim it could be as much as 60 years later.) It has suffered from deterioration due to dampness, salt, and structural degradation. The last renovation was conducted with special attention to archaeological

remains, as it is believed that the mosque may have been built upon several older structures dating back to antiquity. Lime mortar and traditional materials were used to preserve the building's character. As you can see in the photo, the Ba'albek Mosque (to the right of the main Ba'albek ruins) has an orientation directly between Petra and Mecca.

You can learn more about this mosque at: <http://archnet.org/sites/4421>



First Mention of Mecca in Literature

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|--------------------------------------|---------|------|----------------|------------------|----------------------|
| 122 | 741 | First mention of Mecca in literature | | | | | |

The city of Mecca is described in the Qur’ān (6:92, 42:5) as *Umm al-Qurā*, or the “mother of all cities.” From the life of Muḥammad we understand that camel caravans went out from this city, and that Muḥammad himself traveled with a caravan to Syria and back. One would expect that a major city, involved with trade across the Middle East, would be well known to the nations around it, especially if it was a merchant city. However, the city of Mecca was not well known. Despite what Islamic literature tells us, there is not a single piece of non-Muslim evidence that points to and corroborates this claim for such prominence during the seventh century. In fact, the earliest substantiated reference to Mecca is in the *Continuatio Byzantia Arabica* - a source from early in the reign of the Caliph Hishām who ruled between 724 and 743 - 100 years after the life of Muḥammad.

The *Chronicle of 741* (or *Continuatio Byzantia-Arabica* or *Continuatio Isidoriana*) is a Latin-language history in 43 sections or paragraphs, many of which are quite short, which was composed in about the years 741-743 CE, in Spain under Arab occupation. It is the earliest known Spanish work from the period of Arab occupation. but it contains little Spanish history; the first 14 sections contain very brief mentions of the Visigothic kings up to the reign of Suintila (621-631)⁵⁶ The remainder of the content consists of alternating sections dealing with the Byzantine Emperors and the parallel leaders of the Arabs beginning with the Prophet Muḥammad.⁵⁷ Some of these sections contain very brief mentions in passing, of the Arab invasions of North Africa, Spain, France, and parts of the Middle East. Little if any of the content is original; the value of the work lies in what it reveals of the author and his times, and the fact the Mecca is mentioned one time.

When challenged with this absence of evidence, Muslims repeatedly point to the 2nd century Greco-Egyptian geographer Ptolemy and his reference to a city called “Makoraba” is Arabia. I have dealt with this topic separately in the paper: *Suggested Solutions or Issues Concerning The Location of Mecca in Ptolemy’s Geography*.⁵⁸

Others have suggested that there is a reference to “the people of ‘Maka’ between Carmania and Arabia.”

⁵⁶ Taken from the *Historia de regibus Gothorum, Vandalorum et Suevorum* of Isidore of Seville

⁵⁷ These sections perhaps derive from the *Chronicon Mundi* of John of Nikiû and from Arabic or Syriac works which have not survived.

Note: Traditionalists contend that the Prophet was born in the year of Abraha’s expedition to Arabia. The year of Abraha’s expedition as provided on the Sabaic Inscription of Abraha translates into about 550 CE. This is 20 years before the traditional 570 CE birth date of the Prophet. The dates we get from Jacob of Edessa are at least 12 years prior to traditional accounts. Given this evidence, some people feel that that the Prophet lived at least 12-20 years prior to when traditional Islamic history claims. This may indicate that the present so-called Islamic calendar is based on an event that took place after the death of the prophet.

⁵⁸ https://www.academia.edu/4735458/Suggested_Solutions_for_Issues_Concerning_The_Location_of_Mecca_in_Ptolemys_Geography

in *Stephen of Byzantium* (c.528-535).⁵⁹ Scholars have been divided on this issues but Sean Anthony argues quite sucesfully that Maka is not a reference to Mecca or Meccans. but that Stephanos copied the entry from Ptolemy. The Arabic ‘k’ is only very rarely transcribed as Greek Kappa, as the normal way is with ‘Chi.’ Also consonant elongation is also usually represented in transcriptions. This makes Maka very unlikely rendition of makkah.⁶⁰

This leaves us with the first clear reference to the city of Mecca to be in the Chronicle of 741. This is over a hundred years after the Prophet Muḥammad. How could a major city, the “mother of all cities” which undertook trade with all the nations around it, be missing from the chronicles of those surrounding nations? Why do they mention Petra as being a major centre of trade and not Mecca?

59 Stephani Byzantii Ethniconum quae supersunt, Meineke, Berlin, ed, 1849, p. 427

60 Sean Anthony, comments on Accademia.edu discussing this paper.

Huajuexiang Mosque

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|------|---------|--------------------|----------------|------------------|----------------------|
| 124 | 742 | Xian | China | Huajuexiang Mosque | unkown | - | 1392 CE |

GPS Coordinates:

34°15'47.88"N 108°56'11.04"E



This mosque is considered to be one of the oldest and most renowned mosques in China, founded in 742 during the Tang dynasty (618-907). However, the majority of the existing Xi'an Great Mosque was constructed during the later Ming dynasty and further expanded in the Qing dynasty. This mosque is still used by Chinese Muslims (mainly the Hui people) today as a place of worship.

Unlike most mosques in Middle Eastern or Arab countries, the Great Mosque of Xi'an is completely Chinese in its construction and architectural style, except for some Arabic lettering and decorations, for the mosque has neither domes nor traditional-style minarets.

Since the original mosque does not exist, there is no way to determine its original qibla direction. For more information see:

<http://archnet.org/sites/3973>

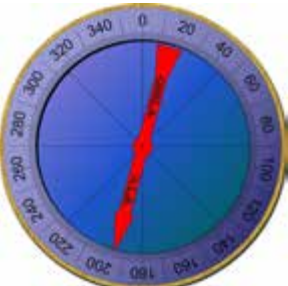
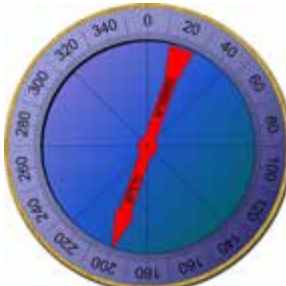
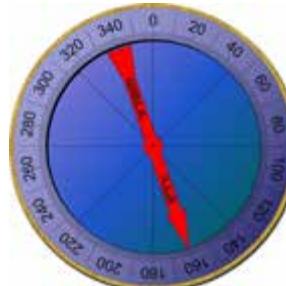
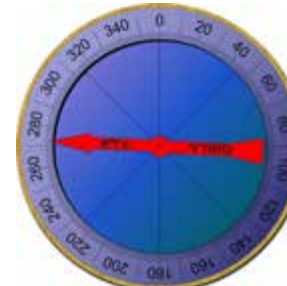


Mushatta Palace

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|---------------|---------|-----------------|----------------|------------------|----------------------|
| 125 | 743 | Amman Airport | Jordan | Mushatta Palace | Petra | 3.99° | never |

GPS Coordinates:

31°44'17.42"N 36° 0'35.95"E

| Actual Mosque | Petra | Mecca | Jerusalem |
|---|---|--|---|
| 195.13° | 199.12° | 160.81° | 273.65° |
| Misses by: | 3.99° | 34.32° | 78.52° |
|  |  |  |  |



One of the largest and most impressive of the Umayyad palaces, Mushatta Palace is an unfinished, limestone and brick complex with entrance hall, mosque, audience hall, and residential quarters, located approximately 32 kilometers south of Amman, Jordan, a short distance from the Queen Alia International Airport.

It is speculated by several scholars that the Umayyad Caliph al-Walid II built Mushatta during his brief reign (743-44) in an effort to commemorate his authority.⁶¹ Construction ended in 744 CE when he was assassinated. Byzantine and Sassanian influence is evident in the stone and brickwork, and its plan and design.

I have visited this site several times. The illustration above demonstrates that the mosque, and the entire palace face directly at Petra.



The most beautiful feature of Mushatta, however, remains in the rich and intricately carved features on its southern exterior, a significant section of which was given to Kaiser Wilhelm as a gift from the Ottoman Sultan ‘Abd al-Hamid just before World War I and today is located in the Pergamon Museum in Berlin.

For more information please see: <http://archnet.org/sites/4135>



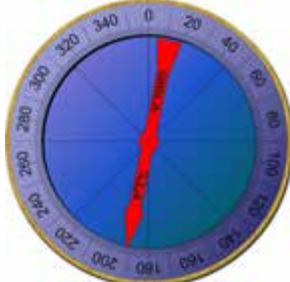
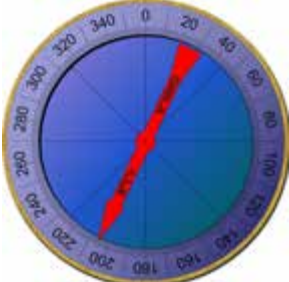
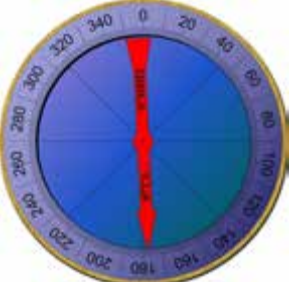

61 Mshatta Palace, Jordan; 743-744 CE”. MuslimHeritage.com. The Foundation for Science, Technology and Civilisation (FSTC). Retrieved 26 December 2015.

Harrān Mosque

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|--------|---------|-----------------------|----------------|------------------|----------------------|
| 127 | 744 | Harrān | Turkey | Mosque and University | between | 0.32° | never |

GPS coordinates:

36°51'57.99"N 39°1'51.24"E

| Actual Mosque | Petra | Mecca | Between |
|---|---|--|---|
| 191.74° | 205.61° | 177.22° | 191.42° |
| Misses by: | 13.87° | 14.52° | 0.32° |
|  |  |  |  |



An ancient citadel stands in the southeast corner of the old walled city of Harran. This citadel dates back to 2000 BCE when the Sabians built a temple to the god Sin. In 642 CE Harran was overrun by the Muslim armies, and later, Caliph Marwān II made Harran his capital from 744 - 750 until it was conquered by the Abbasids in 750 CE. Marwān II built a mosque in the center of the city and a royal palace on the site of the temple of Sin.

The citadel was rebuilt several times, once after 990 CE when Harran became the capital city of the Numayrids, a local northern Syria dynasty ruled by Waththab bin Sabiq al-Numayri. An inscription on the gateway dates its construction to 1059 CE. Nur al Din rebuilt the citadel in 1149. In 1259 the city was overrun by the Mongols and one of the two towers was destroyed. In 1271 the Mongols moved most of the population away and the town was deserted and mostly destroyed. The current citadel structure dates back to the 14th century.

The structure that is of interest to us is the mosque and university built in the centre of the city. During the late 8th and 9th centuries Harran University was a centre for translating works of astronomy, philosophy, natural sciences, and medicine from Greek to Syriac by Assyrians, and thence to Arabic, bringing the knowledge of the classical world to the emerging Arabic-speaking civilization in the south. Baghdad came to this work later than Harran. Many important scholars of natural science, astronomy, and medicine originate from Harran; they were non-Arab and non-Islamic ethnic Assyrians, including possibly the alchemist Jābir ibn Hayyān. Other philosophers and scientists include Al-Battānī who calculated the distance from the Earth to the Moon and Thabit ibn Qurrah, who translated Greek classics and scientific works into Arabic, and wrote on mathematics and astronomy.

The Sabians revered Hermes Trismegistus as their prophet and the *Corpus Hermeticum* as their holy book. Hermes Trismegistus was believed to be an ancient great Egyptian sage, who as the founder of writing and the author of many books on science, medicine, theology, ethics, astrology, alchemy and magic. In the Hermeticum scriptures his teachings appear in the form of mystic visions. Hermeticum portrays Hermes Trismegistus as a divinely inspired teacher, but others have portrayed him as the Greek god Hermes, and the Egyptian god Thoth or Tehuti. Some have equated him with Enoch in the Bible, and Idris in the Koran. Through the Hermeticum's monotheistic teachings, the Harranians were able to claim themselves as one of the "People of the book" though the term Sabian might have referred more to the Mandaean of Iraq, who are Gnostics and known as followers of John the Baptist.

Neither the university building nor the citadel seem to have any qibla direction. The University and mosque in the centre of the city seem to point somewhere between Petra and Mecca



Fenghuang Mosque

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|----------|---------|------------------|----------------|------------------|----------------------|
| unknown | unknown | Hangzhou | China | Fenghuang Mosque | unknown | - | 1281 CE |

GPS Coordinates:

30°14'43.67"N 120°10'14.50"E

This mosque is the third oldest mosque in China, predated only by the Great Mosque of Guangzhou and the Great Mosque at Quanzhou. It was probably first erected sometime in the seventh century under the Tang Dynasty. Because it was destroyed in the Song dynasty (960-1279 CE) and rebuilt in 1281 (possibly 1314) and then again in 1451 and 1646 its original qibla direction cannot be determined. It was rebuilt again between 1314 and 1320 by a Persian Muslim missionary named Aladin, during the Yuan Dynasty, and rebuilt again during the second half of the fifteenth century under the Ming Dynasty. Located on Zhongshan Road in the heart of Hangzhou, this mosque is illustrative of the changing attitudes towards the synthesis of local Chinese and imported Islamic styles throughout the centuries.



The mosque consists of a prayer hall joined to a monumental gateway via a two-storied open pavilion, all clustered within a dense urban complex. The oldest remaining segment of the mosque is the qibla of the prayer hall, which consists of three bays with brick corbelled domes that open into each other with double archways. The central dome is the largest and measures 8.8 meters in diameter. It is flanked to the north and south by lower domes measuring 6.8 and 7.2 meters across.

For more information see: <http://archnet.org/sites/3971>

Shibām Palace

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|--------|---------|---------------|----------------|------------------|----------------------|
| 135 | 753 | Shibām | Yemen | Shibām Palace | unknown | - | unknown |

GPS Coordinates:

15°55'35.62"N 48°37'31.83"E



Above: Shibām, looking from the south

The Great Mosque of Shibām in Yemen is located at the heart of the old city of Shibām and surrounded by towering mud brick houses. The Great Mosque of Shibām was originally built in 753 CE. Much of the mosque as it is today is thought to have been built in the fourteenth century. The presence of red baked bricks, typical of ninth century Abbasid construction, point to reconstruction efforts during the reign of Caliph Hārūn al-Rashīd; this is the only site in Shibām where baked bricks are found. Little remains of the original structure and so it is useless to our study other than to note that it was built during the time of confusion.

For more information please visit: <http://archnet.org/sites/3801>

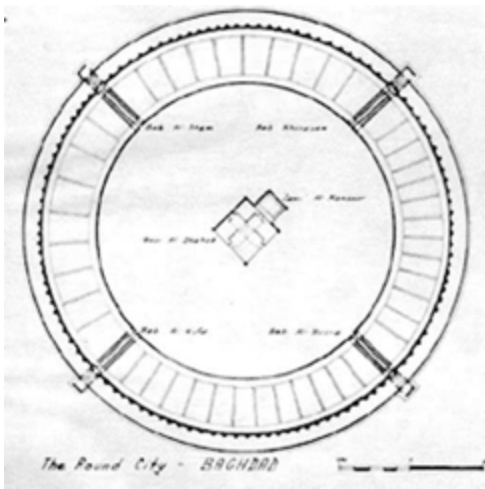
Mosque of Manṣūr

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|---------|---------|------------------|----------------|------------------|----------------------|
| 145 | 762 | Bāghdad | Iraq | Mosque of Manṣūr | Mecca | - | demolished |

GPS Coordinates: unknown, buried under old Bāghdad.

All traces of this mosque have disappeared. However, descriptions of the mosque exist. In 754, al-Manṣūr became the Abbasid Caliph, succeeding his brother Sāffah as ruler. By 762 he commissioned the construction of a new eastern capital, choosing Bāghdad as his site.

The new circular city was designed with ash drawings on the ground for al-Manṣūr to view prior to construction, which began that same year. By its completion in 767 the Round City measured 2000 meters in diameter. It featured four main gates equally distant from each other: the southwest gate was the Kūfa Gate; the southeast was Baṣra; the Khurasan Gate extended to the northeast and the Damascus Gate to the northwest.



The walls were constructed out of mud brick with reed supports, while the domes and vaults were composed of baked brick. The main mosque of the city was about 100 meters by 200 meters with columns used to support the ceiling around the edges of the mosque. There was no mihrab, so one wall was used as the qibla wall. This mosque clearly pointed to Mecca as did all Abbasid

mosques from now on.

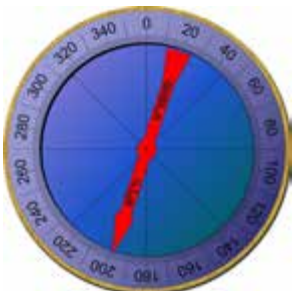
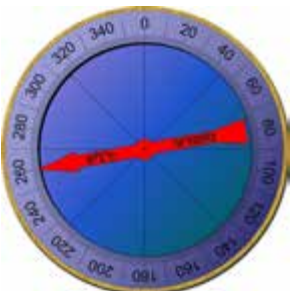
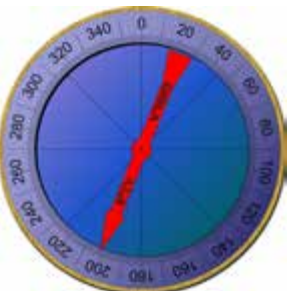
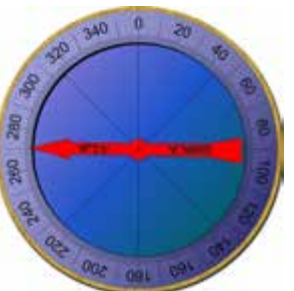
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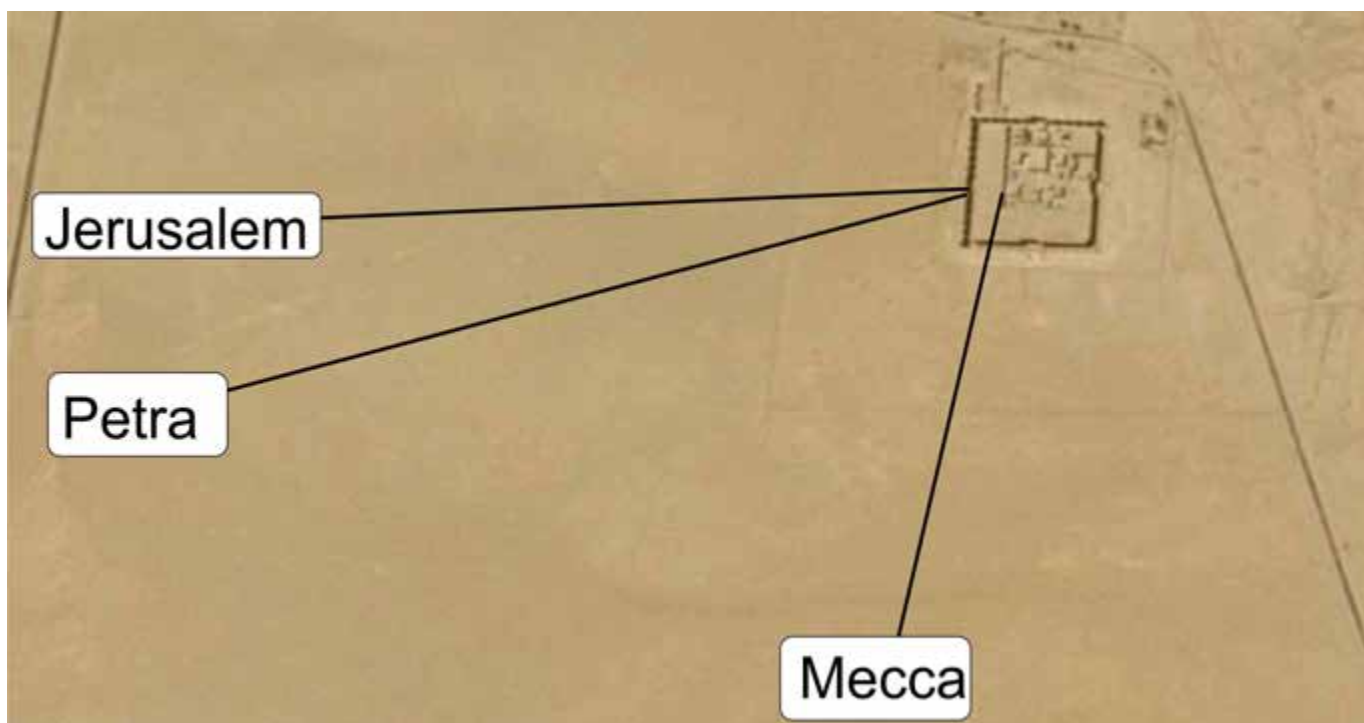
Qaṣr Ukhaydir

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|------|---------|---------------|----------------|------------------|----------------------|
| 146 | 764 | Kūfa | Iraq | Qaṣr Ukhaydir | Mecca | 3.9° | never |

GPS Coordinates:

32°26'25.91"N 43°36'13.39"E

| Actual Mosque | Petra | Mecca | Between |
|---|---|--|---|
| 198.24° | 259.85° | 202.14° | 270.59° |
| Misses by: | 61.61° | 3.9° | 72° |
|  |  |  |  |



Approximately 120 miles south of Bāghdad stand the remains of Ukhaider, a complex encompassing a mosque, palace, and bathhouse enclosed in a rectangular limestone masonry wall measuring 2.6 meters thick and 19 meters high.

Based on architectural evidence, researchers put the date of the construction of the palace at between 720 and 800 CE. This 80 year period provokes a serious historical problem, since within this period the Umayyad dynasty gave way to the Abbasids, who gained power in year 750 CE. So is this palace Umayyad or Abbasid? First, there are indications which suggest that the palace is Umayyad, built before 750 CE. Features such as the presence of few semi-circular arches and the use of corner slabs to support the scalloped dome all point to the Umayyads whose architecture continued to use these elements. The Abbasids introduced the pointed arch, dome squinches and other features. But who could have built Ukhaidir during these troubled times when the Umayyad were waging wars against the Khārijī and the Abbasids? Additionally, most princes and wealthy Umayyads had known residences.

Similarly, early Abbasid rulers can be ruled out as Al-Sāffāh, the founder of the dynasty, for example, lived in his palace beside the Persian city of Anbar (about 45 miles west of Bāghdad) and died there in 754. His successor Al-Manṣūr at first lived in his palace between Kūfa and the old Persian town of Hira, and later settled in his capital Bāghdad.

This leaves us with two remaining theories. Creswell's theory proposes that the construction was due to the nephew of Al-Manṣūr, Isa ibn Mūsa (d. 783/4), who received large sums of money from the Caliph to prevent him making a claim to the throne.⁶² Isa was somehow promised the Caliphate after Al-Manṣūr who later changed his mind in favor of his son Al-Mahdī. Isa was then expelled from his governorship of Kūfa in 778 and made to renounce his claim to the Caliphate. It is reported that on his expulsion he returned to his estates and used to visit Kūfa every Friday for the congregational prayer. However, some scholars raised



doubts about this thesis arguing that the two way journey of 200 km from Ukhaidir to Kūfa through the desert could not have been an easy undertaking for a man who is known to have been a permanent invalid.

For more information visit: <http://archnet.org/sites/3827>

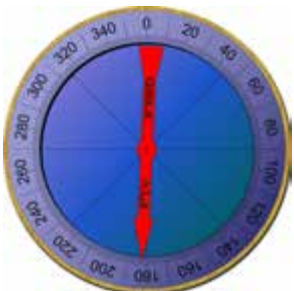
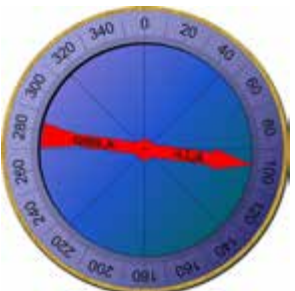

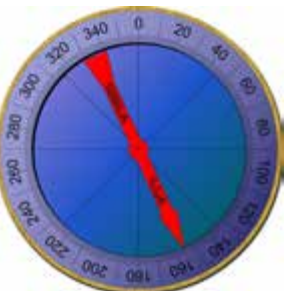
62 Creswell K.A.C. (1958), 'A short account of early Muslim Architecture', Penguin Books, pp.201-3

Ribāṭ Fortress

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|-------|---------|----------------|----------------|------------------|----------------------|
| 153 | 770 | Ribāṭ | Tunisia | Ribāṭ Fortress | parallel | - | never |

GPS Coordinates:

35°49'39.45"N 10°38'19.42"E

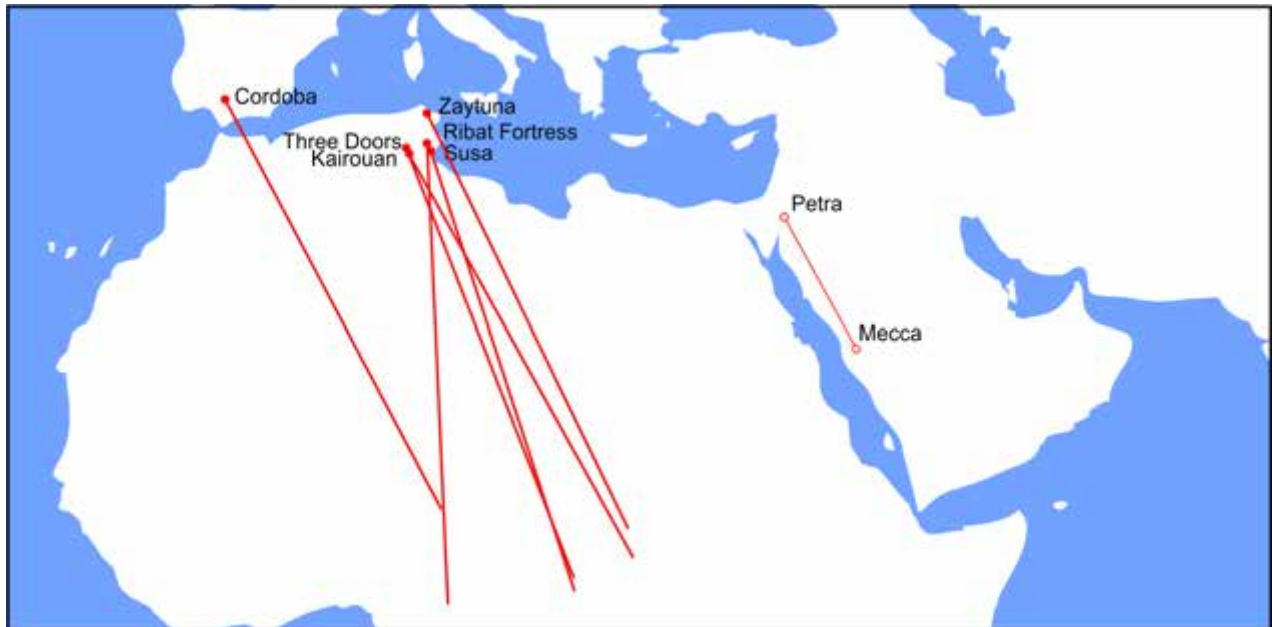
| Actual Mosque | Petra | Mecca | Between |
|---|---|--|---|
| 182.59° | 97.74° | 111.58° | 155.11° |
| Misses by: | 84.87° | 171.01° | 27.48° |
|  |  |  |  |



The Ribāṭ fortress in Sūsa, Tunisia is at the top of the photo above. (The Susa Mosque is in the centre of the photo, with a different Qibla that points parallel to a line draw between Petra and Mecca. (See page 105). The Ribāṭ fort's foundations were allegedly laid in 770 CE, and its last stage of construction was in 822 CE. It is attributed to the Aghlabid Ziyādat Allah, but the foundations may have been from an older building. The fort consists of a fortified enclosure with one entrance, and attached towers in the corners

and in the middle of the walls. The courtyard is surrounded by vaulted porticoes on two levels with cells behind. The southern side of the second floor has a small mosque with a mihrab in its center. This qibla points south rather than towards Mecca or Petra.

The Qibla of this fortress is unique, as no other mosque or Islamic building has a qibla like it. Perhaps this is due to its intended use as a fortress, and the room used for the mosque on the second floor may have been an afterthought, resulting in a qibla pointing south at 176.8 degrees. While I have classified the Ribāt fortress as being a “parallel mosque” (this is the closest to any standard Qibla practice) I must assume that the builders of the fort had not considered its qibla when laying the foundations.



Above: The qibla pointing directly south belongs to the Ribāt fortress.

Be'er Ora Qiblatain

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|-----------|---------|---------------------|----------------|------------------|----------------------|
| unknown | unknown | Be'er Ora | Israel | Be'er Ora Qiblatain | unknown | - | never |

GPS Coordinates:

29°42'41.53"N 34°58'39.11"E



Be'er Ora is located in the Negev, in the southern Arava Valley, about twenty kilometers north of Eilat-Aila. This rectangular prayer area consists of stones on the ground marking the boundaries of the prayer area. The enclosure has in it two round niches, one facing south-east and the other north-east.⁶³ Further excavations at this site led to the conclusion that this is a unique form of an Early Islamic open-air mosque⁶⁴ in which the direction of the mihrab was converted from the eastern side to the southern side of the structure, providing rare evidence for the changing of direction of prayer in early Islamic religious practices.⁶⁵

In the photo you can see the top niche (which points north generally towards Petra) and the bottom niche which points south generally towards Mecca. Since this is an old open-air mosque, it is difficult to date, and also to calculate the exact qibla direction. What is unique about this site, is that it contains two qibla niches.



⁶³ Rothenberg 1972, pages 221-222

⁶⁴ Sahron, Avner, and Nahlieli 1996



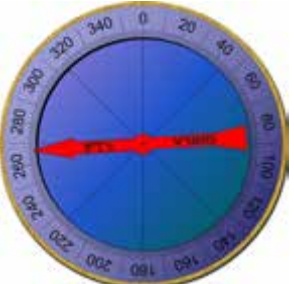

⁶⁵ Sharon 1988:230-33; Sharon, Avner, and Nahlieli 1996:108-9

Sahī Ramdah Mosque

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|--------|---------|--------------------|----------------|------------------|----------------------|
| unknown | unknown | Bowhar | Oman | Sahī Ramdah Mosque | Petra | 0.58° | never |

GPS Coordinates:

23°32'36.06"N 58°23'54.99"E

| Actual Mosque | Petra | Mecca | Jerusalem |
|---|---|--|---|
| 292.79° | 293.37° | 266.60° | 297.03° |
| Misses by: | 0.58° | 26.19° | 4.24° |
|  |  |  |  |



Bowshar is an old village in Oman, inland from Muscat. The locals pride themselves in their history, reaching back to the time of Muḥammad. It is interesting that their mosque, built on the foundations of a still older mosque points exactly to Petra and not to Mecca in Saudi Arabia.



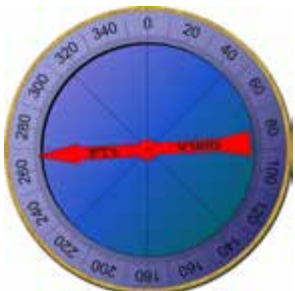



Suma'il Omani Mosque

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|---------|---------|----------------------|----------------|------------------|----------------------|
| unknown | unknown | Suma'il | Oman | Suma'il Omani Mosque | Petra | 1.55° | never |

GPS Coordinates:

23°18'42.14"N 58° 0'39.85"E

| Actual Mosque | Petra | Mecca | Jerusalem |
|---|---|--|---|
| 295.67 | 294.12° | 267.13° | 297.79° |
| Misses by: | 1.55° | 28.54° | 2.12° |
|  |  |  |  |



For millennia, Wadi Suma'il has wound its way between two mountain ranges providing a rich green environment for many civilizations, as well as protection from the harsh desert environment. Throughout this valley ancient and modern buildings exist side by side. So it is not surprising to find a modern mosque

built on the foundations of a much older mosque. What is interesting about this mosque, is that it's qibla points directly to Petra. Unfortunately this mosque has not yet been studied or dated by archeologists.

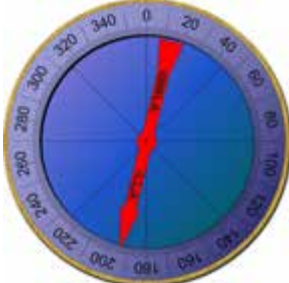

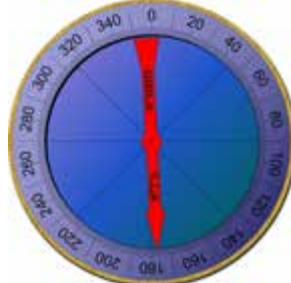
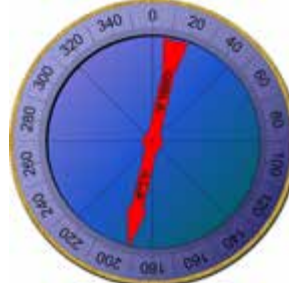


Raqqa Mosque

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|-------|---------|--------------|----------------|------------------|----------------------|
| 155 | 772 | Raqqa | Syria | Raqqa Mosque | between | 0.86° | never |

GPS Coordinates:

35°57'7.39"N 39° 1'15.64"E

| Actual Mosque | Petra | Mecca | Between Point |
|---|---|--|---|
| 193.9° | 209.07° | 177.01° | 193.04° |
| Misses by: | 15.17° | 16.89° | 0.86° |
|  |  |  |  |



The Great Mosque in Raqqa in Syria is located in the northern section of the city's heart. Its plan is rectangular (108 meters x 92 meters) with 1.7 meter thick mud brick walls fortified with semi-circular towers at the corners. All that remains today are the baked-brick minaret and the prayer hall facade with eleven arches that were added by Nur al-Din al-Zanki during the 1165 CE renovation of the mosque. The whole building and complex do not face Mecca but points within one degree of accuracy between Petra and Mecca.



For more information please visit:
<http://archnet.org/sites/1859>

Masjid al Jāmi'

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|--------|---------|-----------------|----------------|------------------|----------------------|
| 155 | 772 | Ishfan | Iran | Masjid al Jāmi' | unknown | - | 419 AH |

GPS Coordinates:

32°40'10.96"N 51°41'6.80"E



Today the modern mosque, built in 419 AH or 1028 CE faces Mecca in Saudi Arabia. No evidence remains of the original mosque or its qibla. Reconstruction also took place in 480, 515 AH, 776 851, and 1077 AH. Located in Isfahan, 340 km south of Tehran, the current Friday mosque of Isfahan is a prominent architectural expression of the Seljuk rule in Persia (1038-1118). In 1051, Isfahan became the capital of the Seljuks, who arrived in Khwarazm and Transoxiana from central Asia in the eleventh century. Defenders of Sunnism, they aimed at the restoration of the Abbasid Caliphate. The conquest of Isfahan by Tughril Beg elevated the city's status, which was manifested in the rich architectural projects representing the Seljuk's powerful empire - the first of which was the Friday mosque.

For more information please visit: <http://archnet.org/sites/1621>

Job's Tomb Shrine

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|---------|---------|-------------------|----------------|------------------|----------------------|
| unknown | unknown | Şalālah | Oman | Job's Tomb Shrine | unknown | - | unknown |

GPS Coordinates:

17° 6'42.00"N 53°59'38.57"E



The Tomb of Job near Şalālah in Oman is one of several alleged burial sites of Job. This complex is located in the hills overlooking the city of Şalālah in Oman's Dhofar region. Other "Job tombs" are in Israel, Syria, Lebanon and Turkey. In 2010 I visited this site and examined the foundations of the old shrine. The custodian claimed that the original building pointed to Jerusalem. However, since Petra and Jerusalem are only 60 miles apart, and are 1470 miles or 2370 kilometers distant they are almost in the same direction and a Petra Qibla could be easily mistaken for a Jerusalem one. The new mosque now points to Mecca.

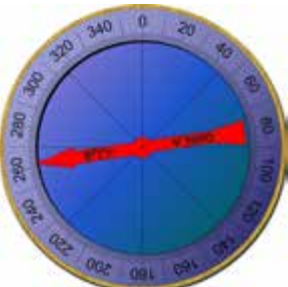
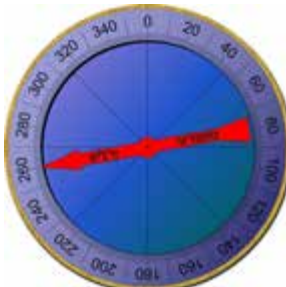

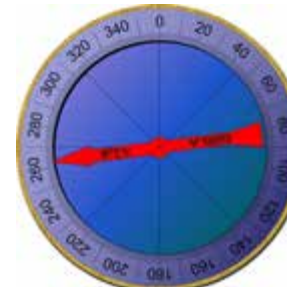
The current shrine (tomb) is small. You can see it above the mosque as it has dome over the center. Inside, beneath the dome, is a rectangular opening in the floor containing the tomb of the prophet Job. The tomb is little more than a mound of dirt, normally draped in cloth. According to tradition, another body is buried within the tomb next to Job. It is not known whose body it is, not even by tradition. All of the current buildings seem to be oriented to Mecca with the exception of the houses against the wall where one enters the compound. The custodian did not know when the current buildings were built, or re-built. With so little information it can only be assumed that these buildings are relatively modern.

Bibi Samarkand

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|-----------|------------|----------------|----------------|------------------|----------------------|
| unknown | unknown | Samarkand | Uzbekistan | Bibi Samarkand | Petra & Jer. | 1.78° | never |

GPS Coordinates:

39°39'38.39"N 66°58'49.57"E

| Actual Mosque | Petra | Mecca | Jerusalem |
|---|---|--|---|
| 261.64° | 259.86° | 239.78° | 262.87° |
| Misses by: | 1.78° | 21.86° | 1.23° |
|  |  |  |  |



The Bibi Khanum Mosque is in Samarkand, Uzbekistan. This mosque was probably built on the location of a much earlier mosque established by Arab traders traveling along the Silk Route.

Then in 1399, Timur (historically known as Tamerlane) decided to undertake the construction of a gigantic mosque in his new capital, Samarkand. The mosque was built using wealth looted during his conquest of India. When Timur had returned from his military campaign in 1404, the mosque was almost completed. However Timur was not happy with the progress of construction, therefore he had immediately



made various changes, especially concerning the main cupola. From the beginning of the construction, problems of statistical regularity of the structure revealed themselves. Various reconstructions and reinforcements were undertaken in order to save the mosque. However, after few years the first bricks had begun to fall out of the huge dome over the mihrab.

During the 15th century it was one of the largest and most magnificent mosques in the Islamic world. But by the mid-20th century only a grandiose ruin of it still survived, but now major parts of

the mosque have been restored. Only four large fragments and a minaret survive from this large mosque.

Even though it is now in a ruinous state, I believe it is safe to say that the qibla did not face Mecca. The locals acknowledge this anomaly and have a quaint legend stating that the Hanafi who used the mosque prayed due west, and the Shafi'i who used the same mosque prayed due south. In the end they agreed on a qibla between the two. Since the mosque's qibla points to Petra it is more plausible that the mosque was built on the



site of an earlier mosque whose qibla already faced Petra.


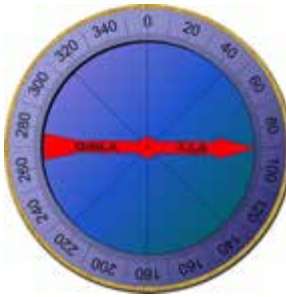
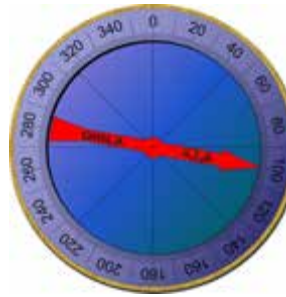

For more information see: <http://archnet.org/authorities/3928/sites/2464>

Córdoba Mosque

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|---------|---------|----------------|----------------|------------------|----------------------|
| 168 | 784 | Córdoba | Spain | Córdoba Mosque | parallel | 2.01° | never |

GPS Coordinates:

37°52'45.23"N 4°46'46.46"W

| Actual Mosque | Petra | Mecca | Line: Petra to Mecca |
|---|---|--|---|
| 157.12° | 90.62° | 100.29° | 155.11° |
| Misses by: | 66.5° | 56.86° | 2.01° |
|  |  |  |  |



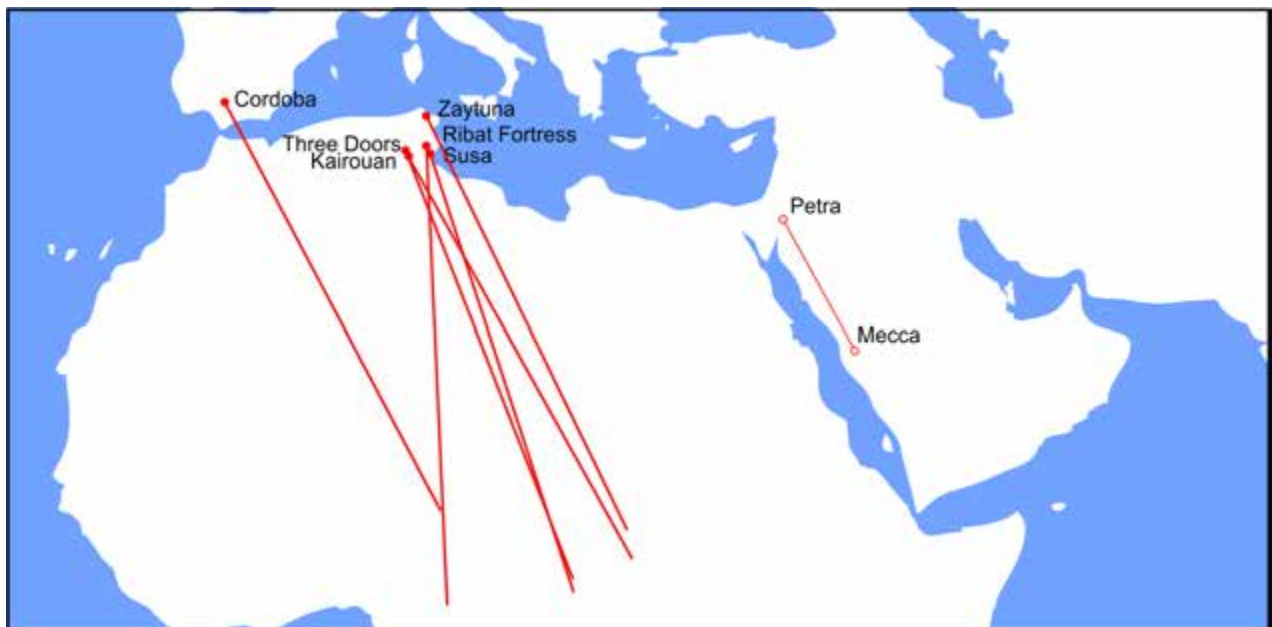
The Great Mosque of Córdoba was considered a wonder of the medieval world by both Muslims and Christians. Built on a Visigothic site, which was probably the site of an earlier Roman temple, the Great Mosque of Córdoba was begun between 784 and 786 CE during the reign of ‘Abd al-Rahman I, who escaped from Syria to the Iberian Peninsula after his family was massacred by a rival political dynasty.

The qibla of this mosque has puzzled researchers for many years as, like the Sūsa mosque, it points to neither Mecca nor Petra. I suspect that since the Umayyad rulers were at odds with the Abbasid rulers, they

refused to use the same qibla (Mecca), and yet felt that they could not point to the original Holy City as the Black Stone was no longer there. In the end, they pointed the mosque south (60 degrees south of east) which was more towards South Africa, just as the Sūsa mosque was oriented. The last major renovation of this mosque was in 987 CE. For many years this mosque was the second largest in the world.

More information is available at: <http://archnet.org/sites/2715>

As you can see below, the qibla of this mosque points parallel to a line drawn between Petra and Mecca.



Shrine of Kāẓmiyya

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|---------|---------|--------------------|----------------|------------------|----------------------|
| 183 | 799 | Bāghdad | Iraq | Shrine of Kāẓmiyya | unknown | - | unknown |

GPS Coordinates:

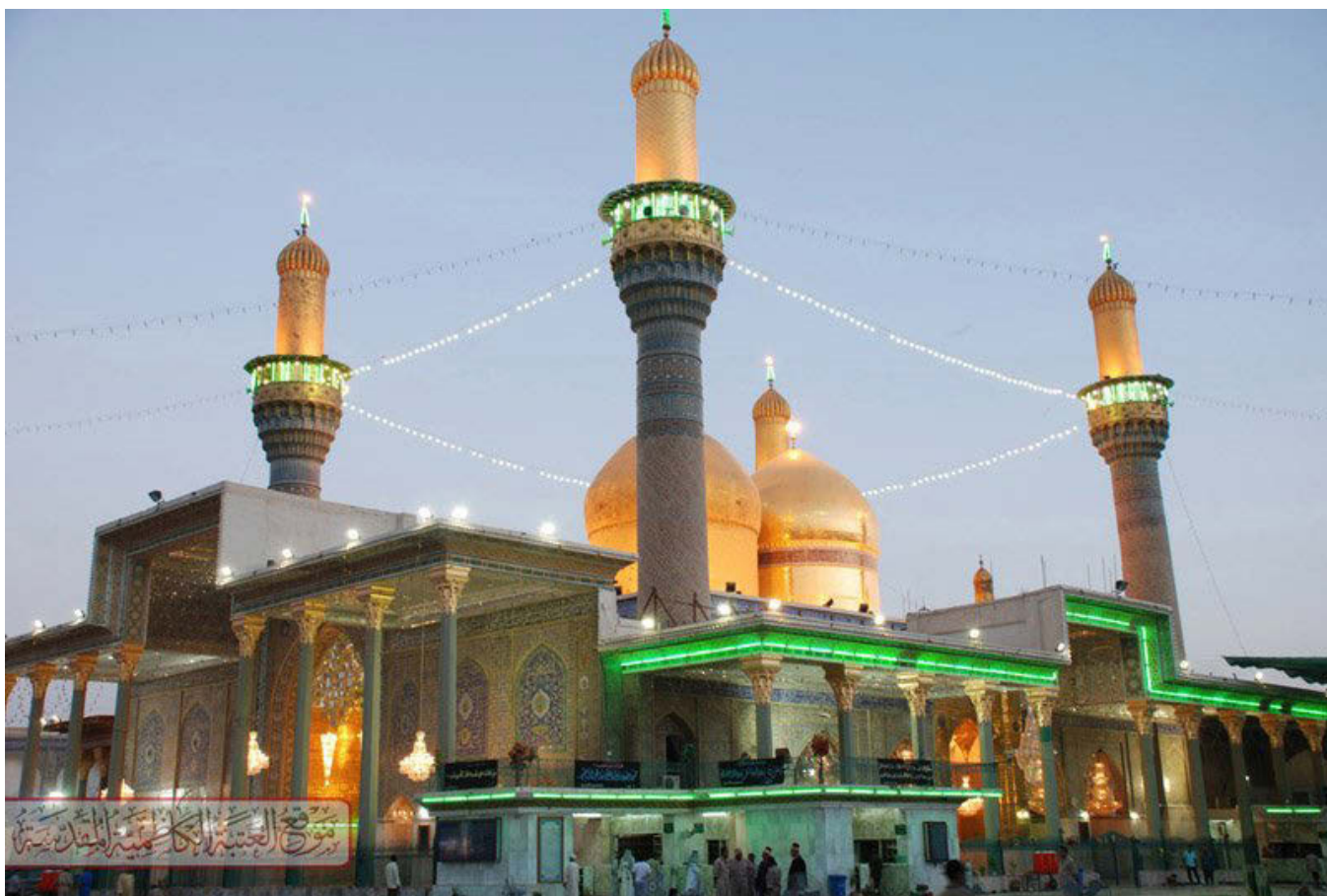
33°22'47.20"N 44°20'17.08"E



Before the foundation of Bāghdad was drawn out, the place where the Kāẓmiyya shrine now stands was the location of the Shunayziyyah cemetery. (You can see the small tombs that surround the shrine above.) After the establishment of Bāghdad, al-Manṣūr used this cemetery as the burial ground for the caliph's family. In 799 CE Imam Mūsa, the seventh imam, died and was buried at the actual spot of the shrine. The shrine then became a pilgrimage site for the Shi'ite community, a status later reinforced by the subsequent burial in 835 of the ninth Imam who died in Bāghdad.

Under the Buwaihid Shi'ite dynasty, several restoration and addition works were undertaken. Abd ud-Dawlah first restored the sanctuary after the flood of 978 CE according to a contemporary description of the structure, the two tombs were described as topped by wooden domes and surrounded by an enclosure. In 1052, the building was described as having a large dome in the middle and minarets on the sides. Several restorations followed in 1097, 1159 and 1154. At that time, the sanctuary was used as a madrasa and an orphanage.

During the Abbasid caliphate of al-Zāhir, the dome caught fire and was restored by al-Mustansir. From that time on, the shrine was called al Maqbarah al Jadidah meaning the new tomb. It acquired greater significance as it was considered one of Bāghdad's principal monuments from the thirteenth century onward.



It is described as having a large dome, a library and an orphanage. The sanctuary was preceded by a wide courtyard probably surrounded by rooms and a façade with a large diwan similar to other Seljuq monuments of that same period. It was sufficiently damaged during the Mongol invasion. Its first reconstruction dates back to Imad al-Din al-Qazwini. Ibn Baṭṭūṭa describes it in the fourteenth century as having a large enclosure and the tombs being of wood with a silver coating. In 1356, a second flood caused more damage to the shrine. It was then restored according to the previous layout with two smaller domes that are probably quite close in design to its current form.

In 1508 CE, when the Ṣafavid Shah Ismail entered the city, he ordered a total reconstruction of the shrine. The rawdah was enlarged, marble was laid on the floor of the shrine, the sarcophagi were rebuilt of wood, and a Qur'ānic inscription was carved on the outer walls. The minarets were increased to four in number in a way to resemble mosques of that period.

This shrine does not appear to have any qibla direction. If it did, it appears that it faces the Grand Mosque in Kūfa.


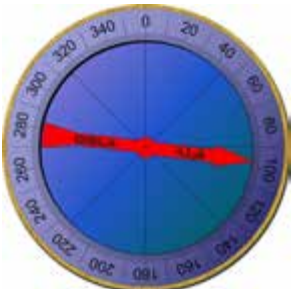

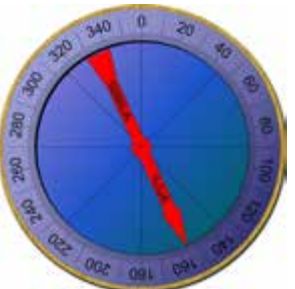
You can learn more about this shrine at: <http://archnet.org/sites/3848>

Jāmi' Uqba Ibn Nafi'

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|----------|---------|----------------------|----------------|------------------|----------------------|
| 221 | 836 | Qayrawān | Tunisia | Jāmi' Uqba Ibn Nafi' | parallel | 4.22° | never |

GPS Coordinates:

35°40'54.16"N 10° 6'13.75"E

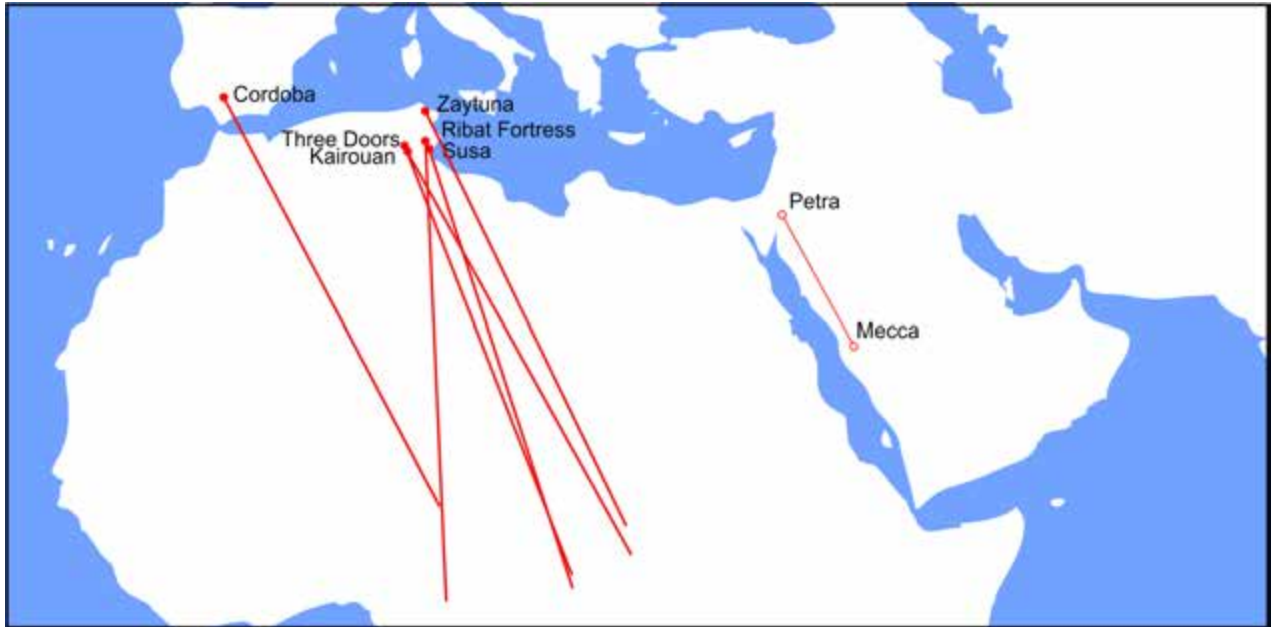
| Actual Mosque | Petra | Mecca | Line: Petra to Mecca |
|---|---|--|---|
| 150.89° | 96.92° | 110.75° | 155.11° |
| Misses by: | 53.97° | 40.14° | 4.22° |
|  |  |  |  |



The Great Mosque of Kairoua is also known as the Uqba Ibn Nafi' Mosque. This mosque was built by the governor of Qayrawān, Ziyādat Allah, between 817 and 838 CE and is sometimes referred to as the Qayrawān Mosque or the Kairoua Mosque. He erected the building on the site of an older mosque, originally constructed by 'Uqba ibn Nafi at the time of the 670 CE Arab conquest of North Africa. Although the current mosque retains virtually no trace of the original seventh-century building, it is still often referred to as "Mosque of Sidi 'Uqba," or "Mosque of 'Uqba Ibn Nafi." Historically, it has been accorded great significance as one of the first mosques built in a major town of Islam in the West.

This mosque also points within 5 degrees of a line drawn between Petra and Mecca, like the other mosques of north Africa.

You can learn more about this site by visiting: <http://archnet.org/sites/3763>

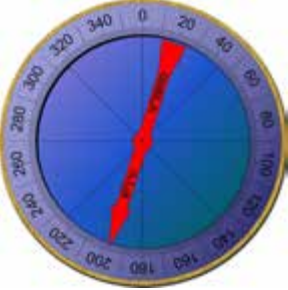
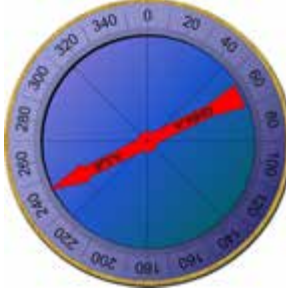

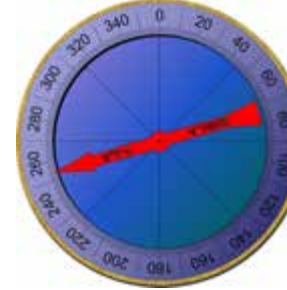


Great Mosque of Sāmarrā

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|---------|---------|-------------------------|----------------|------------------|----------------------|
| 232 | 847 | Sāmarrā | Iraq | Great Mosque of Sāmarrā | Mecca | 1.13° | never |

GPS Coordinates:

34°12'25.29"N 43°52'51.57"E

| Actual Mosque | Petra | Mecca | Jerusalem |
|---|---|--|---|
| 197.79° | 243.80° | 196.66° | 253.89° |
| Misses by: | 46.01° | 1.13° | 56.1° |
|  |  |  |  |



Al-Mutawakkil commissioned the construction of the Great Mosque of Sāmarrā upon his succession to the Abbasid caliphate in the mid-ninth century. While the outer wall still stands, little remains of the interior of the mosque today. In its time, it was the world's largest mosque. This mosque faces Mecca as does every Abbasid Mosque from this time.

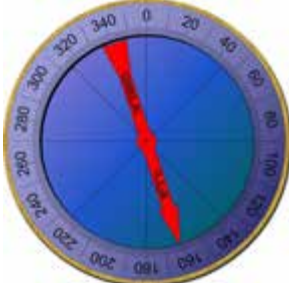
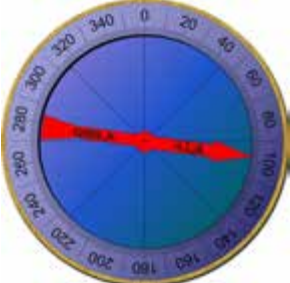


More information can be found at: <http://archnet.org/sites/3828>

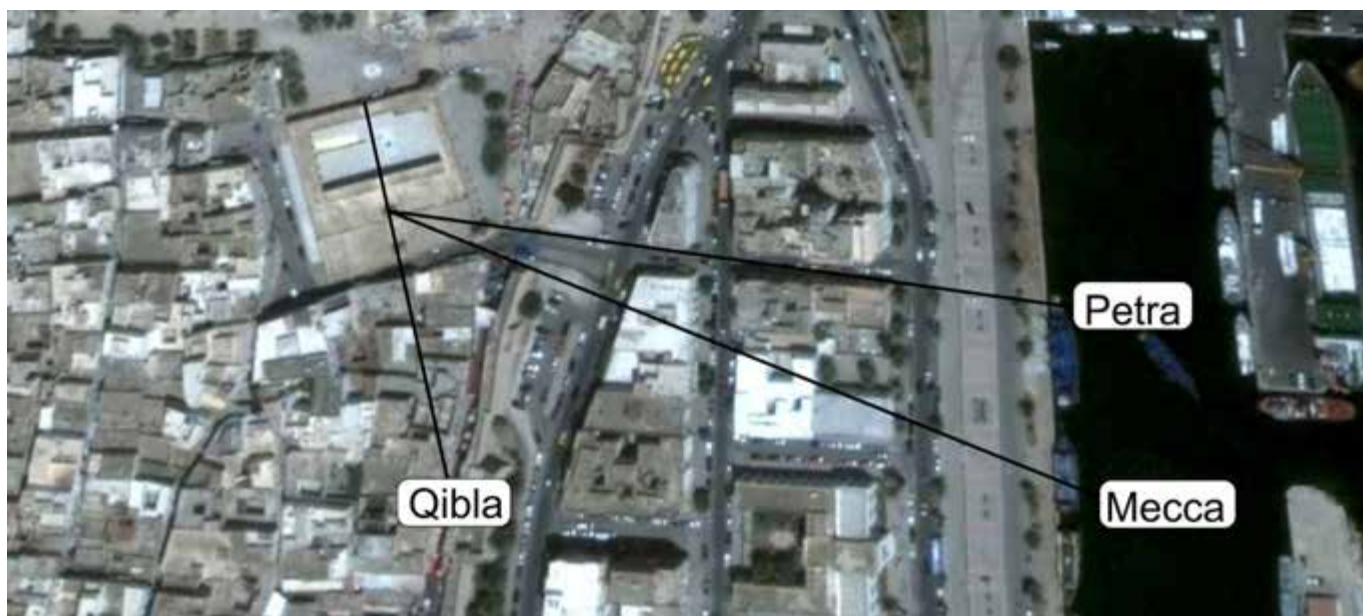
Great Mosque of Sūsa

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|------|---------|----------------------|----------------|------------------|----------------------|
| 236 | 850 | Sūsa | Tunisia | Great Mosque of Sūsa | parallel | 6.78° | never |

GPS Coordinates:

35°49'36.76"N 10°38'23.07"E

| Actual Mosque | Petra | Mecca | Line: Petra to Mecca |
|---|---|--|---|
| 161.89 | 97.74° | 111.58° | 155.11° |
| Misses by: | 64.15° | 50.31° | 6.78° |
|  |  |  |  |

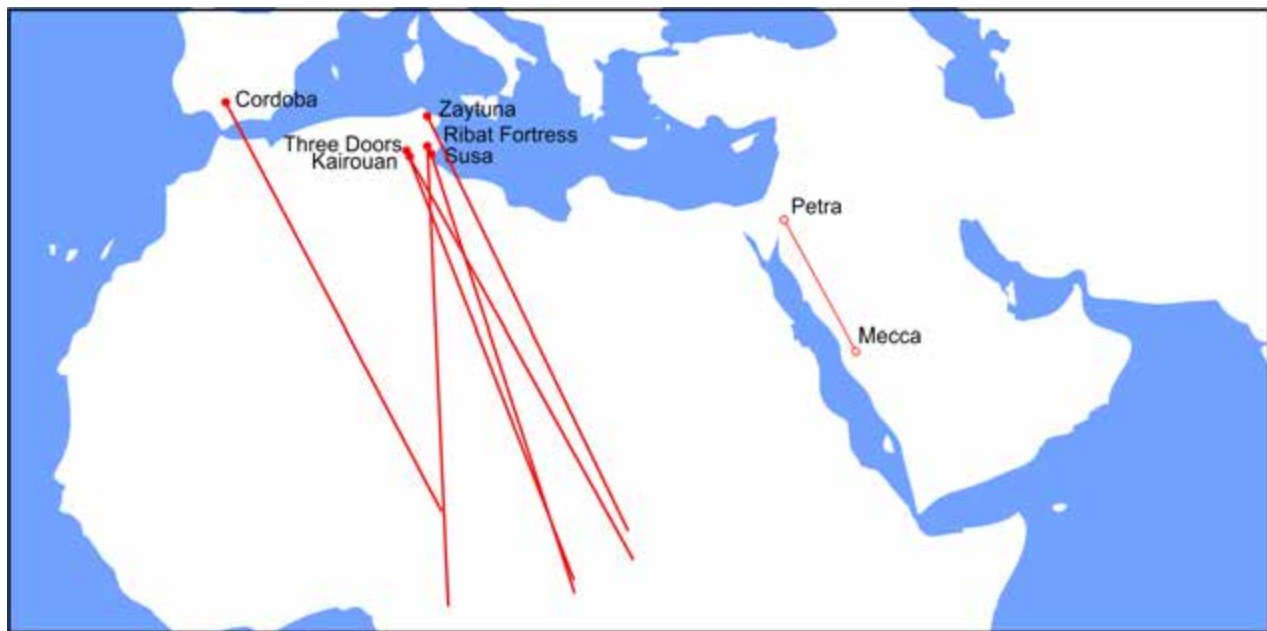


The Great Mosque of Sūsa in Tunisia is near the Ribāt Fortress. The qibla direction of this mosque points south at a different angle than that of the fortress. (see page 86 for Ribāt fortress.) This qibla is 6.78° off from being parallel to a line drawn from Petra to Mecca.

You can learn more about this mosque at: <http://archnet.org/sites/4194>



Above: The mosque of Susa.

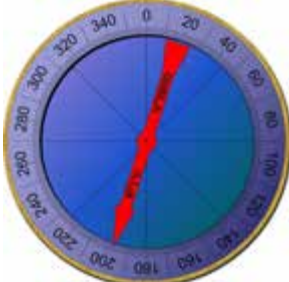
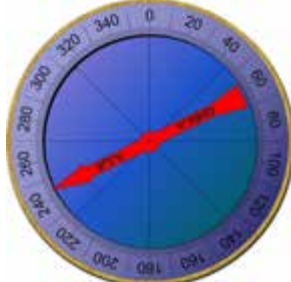
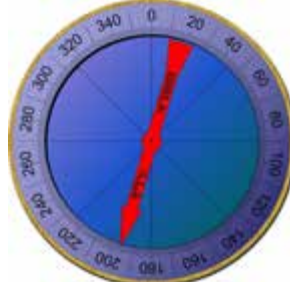
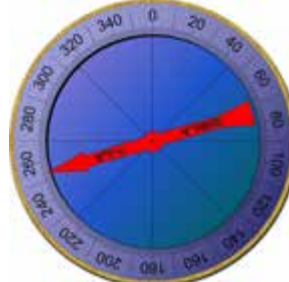


Abu Dulaf Mosque

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|---------|---------|------------------|----------------|------------------|----------------------|
| 245 | 859 | Sāmarra | Iraq | Abu Dulaf Mosque | Mecca | 4.6° | never |

GPS Coordinates:

34°21'39.60"N 43°48'9.00"E

| Actual Mosque | Petra | Mecca | Jerusalem |
|---|---|--|---|
| 191.57° | 242.59° | 196.17° | 252.59° |
| Misses by: | 51.02° | 4.6° | 61.02° |
|  |  |  |  |



Between 859 and 861 CE, al-Mutawakkil relocated the Abbasid caliphate temporarily from Sāmarra to a new settlement that he named Ja'fariya, a site just up the river to the north. The Mosque of Abu Dulaf became the new main congregational mosque not unlike the Great Mosque in Sāmarra. The walls of the mosque barely remain. While this mosque does not point directly at Mecca, its orientation is closer to Mecca than any other.




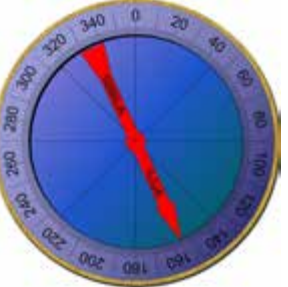
You can learn more about this mosque at: <http://archnet.org/sites/3830>

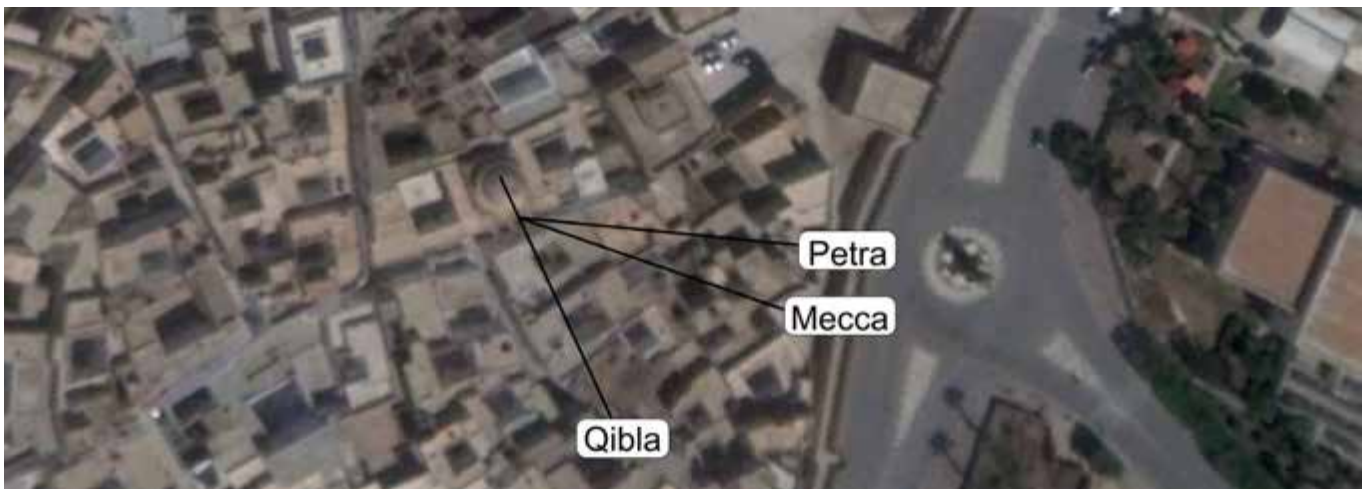
Mosque of the Three Doors

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|--------------------|---------|---------------------------|----------------|------------------|----------------------|
| 252 | 866 | Qīrūwān (Kairouan) | Tunisia | Mosque of the Three Doors | parallel | 3.54° | never |

GPS Coordinates:

35°40'44.01"N 10° 6'13.66"E

| Actual Mosque | Petra | Mecca | Line: Petra to Mecca |
|---|---|--|---|
| 158.65° | 96.92° | 110.75 | 155.11° |
| Misses by: | 61.73° | 47.9° | 3.54° |
|  |  |  |  |



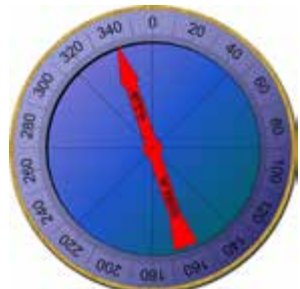
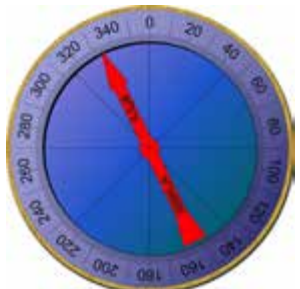


The Mosque of the Three Doors, previously known as the Mosque of ibn Khayrūn, was colloquially named after the three portals located along its west elevation. Its elaborate public entry is the oldest extant decoratively carved facade in the Islamic world, rendering the otherwise modest structure significant to the study of architecture. The mosque was constructed during the ninth century CE (third century AH). The structure underwent a major renovation sponsored by the Hafids during the fifteenth century CE (ninth century AH). Like the other North African mosques, this mosque has a qibla that points south at 155.5 degrees.

For more information please see: <http://archnet.org/sites/3766>

Shibām Aqyan

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|--------------|---------|----------------|----------------|------------------|----------------------|
| 257 | 871 | Shibām Aqyan | Yemen | Jāmi' al Kabīr | unknown | - | 12 century |

GPS Coordinates: 15°30'33.55"N 43°54'10.49"E

| Actual Mosque | Petra | Mecca | Jerusalem |
|---|---|--|---|
| 341.13° | 333.81° | 327.44° | 335.63° |
| Misses by: | 7.32° | 13.69° | 5.5° |
|  |  |  |  |

This badly misplaced Qibla points towards Aabda in northern Lebanon



The Great Mosque of Shibām Aqyan (not to be confused with the Shibām of the Wadi Hadramawt) near Kawkaban is approximately 35 kilometers to the northwest of Sana'a in Yemen. This mosque is built on the site of one of the oldest mosques in Yemen, but the current mosque dates to the 12th century CE. It is interesting that the qibla of this mosque is closer to Petra than it is to Mecca. You can read more about this mosque at: http://archnet.org/sites/3803/media_contents/212


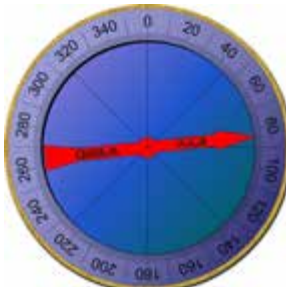

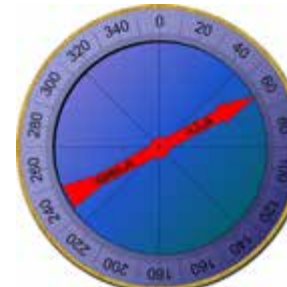


Ibn Ṭūlūn Mosque

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|-------|---------|------------------|----------------|------------------|----------------------|
| 263 | 876 | Cairo | Egypt | Ibn Ṭūlūn Mosque | Mecca | 9.27° | - |

GPS Coordinates:

30°01'44"N 31°14'58"E

| Actual Mosque | Petra | Mecca | Jerusalem |
|---|---|--|---|
| 145.40° | 84.19° | 136.13° | 61.89° |
| Misses by: | 61.21° | 19.27° | 83.51° |
|  |  |  |  |



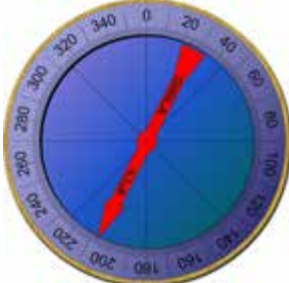

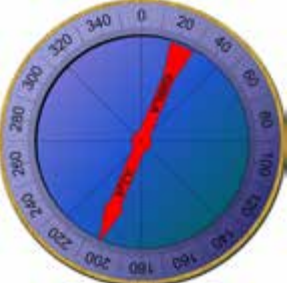
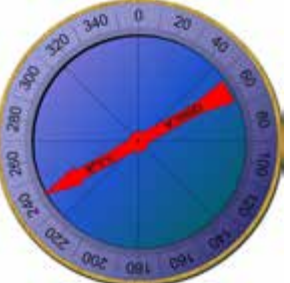
This mosque was built for Ahmad ibn Ṭūlūn, son of a Turkish slave of the Abbasid caliph al-Ma'mun. He was sent to Egypt in 868 CE as governor of al-Fusṭaṭ, but within two years he had been made governor of the whole country. Shortly thereafter, by refusing to send the annual tribute to the Abbasid court, he established himself as an independent ruler of the province. His family ruled in Egypt for 135 years, until 905 CE . I have included this mosque in my study to demonstrate that mosques now all pointed towards Mecca. You can read more about this mosque at: <http://archnet.org/sites/1522>

Ansaq Friday Mosque

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|-------|---------|---------------|----------------|------------------|----------------------|
| unknown | unknown | Asnaq | Iran | Friday Mosque | Mecca | 4.15° | - |

GPS Coordinates:

38° 3'42.97"N 47°11'20.90"E

| Actual Mosque | Petra | Mecca | Jerusalem |
|---|---|--|---|
| 207.11° | 234.93° | 202.96° | 240.88° |
| Misses by: | 27.82° | 4.15° | 33.7° |
|  |  |  |  |

This old village mosque is oriented towards Mecca. Locals claim that it is very old, but it has never been dated.

You can learn more about this mosque at: <http://archnet.org/sites/5436>

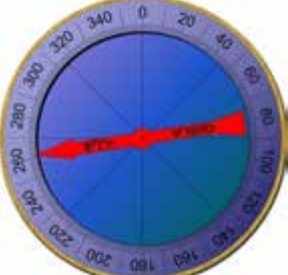
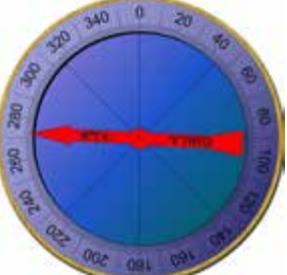
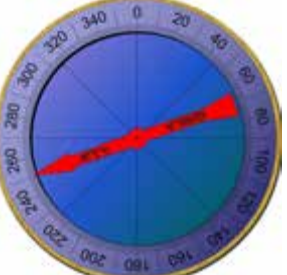



Masjid i Jāmi' Fahraj

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|--------|---------|-----------------------|----------------|------------------|----------------------|
| unknown | unknown | Fahraj | Iran | Masjid i Jāmi' Fahraj | Mecca | 10.84° | 9 century |

GPS Coordinates:

28°57'11.47"N 58°53'4.55"E

| Actual Mosque | Petra | Mecca | Jerusalem |
|---|---|--|---|
| 261.56° | 279.67° | 250.72° | 283.81° |
| Misses by: | 18.11° | 10.84° | 22.25° |
|  |  |  |  |



This is another old undated village mosque. The Masjid i-Jami of Fahraj is the congregational mosque of the town of Fahraj thirty kilometers east of the city of Yazd in Iran, dated: 8th-10th c./2nd-4th AH. The qibla line to Mecca is illustrated above.





You can learn more about this mosque at: <http://archnet.org/sites/3855>

Şalālah Al-Balīd Mosque

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------|---------|---------|---------|-----------------|----------------|------------------|----------------------|
| unknown | unknown | Şalālah | Oman | Al-Balīd Mosque | Mecca | 5.33° | 10th century |

GPS Coordinates:

17° 0'21.45"N 54° 7'49.83"E

| Actual Mosque | Petra | Mecca | Jerusalem |
|--|--|---|--|
| 285.05° | 311.39° | 290.38° | 314.27° |
| Misses by: | 26.34° | 5.33° | 29.82° |
|  |  |  |  |



Al Balid was an Omani city on the coast of the Indian Ocean. It is known as Salalah today. Evidence from recent excavations has shown that this site was inhabited in the pre-Islamic period. Since its origins, (about 1,000 BCE) in the Bronze Age and its continued rise in the late Iron Age, it was a key center which dominated the East African, Indian and Chinese trade. Both Arab and European historical references indicate that the city was rebuilt a number of times from the 4th century AH (10 Century CE) to its final

demise at approximately 618 AH (1221 CE). Al Balid or ancient Zafar was a prosperous port and trading centre. Arab travelers, including Ibn Majawir, (1232 CE) and Ibn Baṭṭūṭa (1329-1363 CE) visited the city and described its people and economy. Shifting economic ecological, and political conditions along the North Indian Ocean led to its slow demise by the mid 16th century CE.

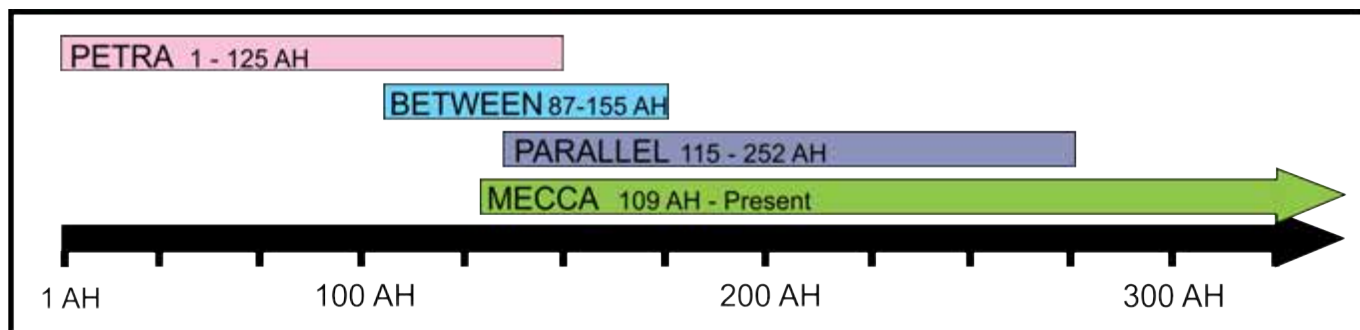


Al Balid's layout is similar to other Southern Arabian ports, such as Sohar. A major lagoon or khor is situated immediately north of the city. This lagoon is created by a series of spring run-offs from the Dhofar hills, thus providing al Balid with an abundance of fresh water. Concerning its prosperity from foreign trade, smaller boats would enter the lagoon to a customs house off-loading the cargo from the ocean-going dhows anchored offshore. A formidable city wall with perhaps four gates and associated bastions as described by Ibn Majawir (1232 CE) is at least 2 km long and 4 meters high in places, protecting the western sector of the city which covered 25 hectares. The large urban area dominated by formal buildings such as mosques and houses can be seen along the western portion of the city. The large open spaces of the eastern part of the city may have been a caravansari held camels, horse stables, sardine drying fields and frankincense storage. The low lying hills of dressed stone rubble as well as numerous artifacts strewn across the surface are indicative of buried buildings. I visited this city in 2010 and examined the mosque ruins in person.

Summary

In this chapter I have tried to bring together the information that I have gathered over the last two decades concerning the early mosques of Islam. The core of this information is displayed in a master table on pages 8 & 9. Out of the 60+ plus mosques I have listed, 15 of the early mosques appear to have had a qibla directed towards Petra, while 9 point directly between Petra and Mecca and 6 African and Spanish mosques have a qibla that is generally parallel to a line drawn between Petra and Mecca. When these are placed on a timeline, we can clearly see that Petra was the original Qibla, before other Qiblas were introduced. Today only the Mecca Qibla remains.

In the master table, I have listed all the mosques I could find from the first centuries of Islam, up until Mecca became the sole surviving Qibla direction. I have noted which mosques have the original foundations and which were rebuilt later thus obliterating their original qibla direction. This leaves us with a clear overview of the Qiblas used in the first three hundred years of Islam.



From this evidence, I have drawn several conclusions.

1. There are no existing mosques from the first century AH that point to Mecca in Saudi Arabia. Every surviving mosque with an original Qibla points to the ancient city of Petra in Jordan. The Mecca Qibla was clearly a later development.
2. During the second century of Islam, there was a time of confusion. On page 41, I introduce Ḥajjāj bin Yūsuf Al-Thaqāfi, who was responsible for building the first of 8 new mosques that pointed directly between Petra and Mecca. Starting on page 69, the Umayyad Muslims in the west build new mosques which have a Qibla that points parallel to a line drawn between Petra and Mecca. In summary, there are no mosques pointed to Mecca during the first century of Islam and only 4 new mosques pointing to Mecca in the second century of Islam. It is not until the third century that Mecca Qiblas become commonplace.
3. One of the surprising results of this survey, is that the early mosques seemed to be well plotted. Many of the Qiblas are accurately plotted to less than 5 degrees, although some of the later mosques seem to be less accurate. This seems to indicate that as time passed, the knowledge of setting an accurate Qibla diminished, and accuracy was only revived at a later date.

There is much more that we can learn as we examine these Qiblas. For instance, we will discover that once the earlier Qiblas vanished, later Muslims attributed the earlier mosques of having “erratic” Qiblas, and believed that inaccurate “folk” methods were used to plot early Qiblas. However, the data clearly indicates

that there were four Qiblas. It is only when we record them in a master table, and then analyze the data chronologically that it becomes clear that there were four distinct Qiblas: Petra, Mecca, Between, and Parallel. I trust that the rest of this book will be useful in clearing up what people have believed about Qiblas for so many centuries. While I realize that the data I have uncovered may be shocking and disturbing to some readers, there are reasonable explanations when the evolution of Islamic Qiblas is compared to early Islamic history. Unfortunately, the changing of the Islamic Qibla also raises disturbing questions. If the Qibla was originally towards Masjid al-Ḥarām, then that holy place must have been located in the city of Petra. Since the Qur’ān directs all Muslims to face Masjid al-Ḥarām, and since the prophet Muḥammad and the four rightly guided caliphs after him all lived during the time of the Petra Qibla, then surely true prayer must have been made towards Petra. What does this mean for Muslims who have directed their prayers to a Black Stone in Saudi Arabia? What does this mean for Muslims who have taken pilgrimage to the city of Mecca in Saudi Arabia? Does this mean that meat dedicated to Mecca is not ḥalāl? If Petra is the original Masjid al-Ḥarām, can the locations mentioned in the early Islamic accounts be found in and around Petra? Are Islamic religious rites all canceled because prayer, pilgrimage and other rites are all performed in the wrong direction? As some Muslims have asked me, “Who had the power and authority to change the location of Masjid al-Ḥarām to Saudi Arabia?”

In the following pages, we will have to examine a number of questions that have arisen from my study of these Qiblas. It all began with my book *Qur’ānic Geography* (Independent Scholars Press, 2011), which is still available today. That book raised many questions, that this book attempts to address. While I am not a Muslim theologian, I do wonder how these questions can be answered. Please understand that the following pages do not address theological issues, although they were written to answer some of the questions that Muslims have asked about the accuracy and meaning of the data that I uncovered during the last two decades.

Accuracy of Google Earth

I have been fortunate to be able to live or visit in the Middle East for much of the last thirty years. During this time, I have been able to visit a good number of the mosques listed in the first chapter. For some of the mosques that I could not visit, I have been able to access measurements and GPS readings from other scholars, and for a few I have had personal friends who have been able to visit and take GPS readings. There are a few mosques however, that are located in areas where it has been unsafe to travel because of wars and internal conflicts. For those mosques, which have no published archeological research, I have had to resort to taking measurements using online tools like Google Earth and Earthdata's ASTER. However, at the beginning, let me emphasize, that although I use Google Earth images to illustrate my research, I only used online data for a small number of mosques, and only as a last resort.

When I first started using Google Earth, I wondered about the accuracy of using such a tool. First, there is Google Earth's own disclaimer about accuracy:

Google makes no claims as to the accuracy of the coordinates in Google Earth. These are provided for entertainment only and should not be used for any navigational or other purpose requiring any accuracy whatsoever. Our imagery varies from sub-meter resolution in major cities to 15 meter resolution for most of the earth's surface, with a global base resolution of 1KM. Since our database is constantly being updated, we cannot state a specific resolution for any geographic region. Google acquires imagery from many different sources with many different file formats, projections and spectral characteristics. All imagery sources are fused into a single global database with a proprietary format that has been developed for the specific purpose of streaming to our client software.

There are several things here that we should take note of. First, Google distances themselves from accuracy claims, obviously so that they do not end up in court battles. Imagine two land owners measuring their property using Google Earth, each deciding where the boundary should be between them. Google Earth must publish such disclaimers, so that they are not involved in such legal disputes. However, at the same time, Google Earth does strive for accuracy, which they are constantly improving.

When considering the issue of accuracy, there are a number of issues that must be dealt with. First, Google Earth's ruler has several uses. It can be used to measure the distance between two points. However, since Google's globe is made up of many square satellite photos mounted on a circular globe, they struggle with a host of problems.

Let's start by considering how accurate a measurement on an image can be. If the resolution of a satellite image pixel is 1 square meter on the ground, and if you are zoomed in far enough to see individual pixels (original, not re-sampled for display purposes), you can measure to within ± 1 meter. Now let's get that into GIS, which requires both orthorectification and georeferencing. Both can introduce small errors. On top of which, you're looking at errors introduced by (re)projection onto your computer screen.

Now you must put this one image into Google Earth and mix it thousands of other images, all of which

may vary in their original resolution and quality. Google then mashes them together to make what appears to be a seamless interface. This is one reason why Google has a disclaimer about accuracy.

All of that is just for the accuracy of the imagery you're measuring from. Then add in the user interface:

- How far out are you zoomed when you do your measurements?
- Far enough in to see those individual original pixels, if they're even available to you?
- Or out far enough to see the entire mosque? ... or the mosque and its surroundings?
- What display resolution is your computer running?
- How accurate/precise is your hand with the cursor as you mark Qiblas and their direction?

The distortions introduced by the projection(s) Google Earth uses may change depending on where you are looking and how far out you are zoomed. The best you can do is find something of known distance near your mosque and see what it measures at to estimate the error in that area. This is why visiting a mosque and taking measurements is so important. You can later compare your "on the ground" measurements with the satellite images.

To test this, one user measured the area of an individual farm using the Google Ruler and compared it to the legally defined area of his property contained on the title deeds (2334.6Ha) at the highest resolution possible on GEP (2299.7Ha). He discovered that the "accuracy" in this instance was 98.51%; ie ~1.5% error. That is for measuring with straight lines.

Now comes a tricky part. When you are looking at Google Earth, you are not actually looking at a single satellite photo. For instance, when I am zoomed out at 700 miles and look down on the city of Vancouver, the image is dated from December 1969, and is labeled Data LDECO-Columbia, NSF-NOAA, Image Landsat, Data SIO NOAA, US Navy, NGA, GEBCO.

However, as I zoom in to about 50 miles, I am suddenly looking at an image dated December 2015. However, if I move a bit over and look down on Mount Baker, the image changes to 2013. So there are not just multiple images, but also multiple images on different layers from different dates.

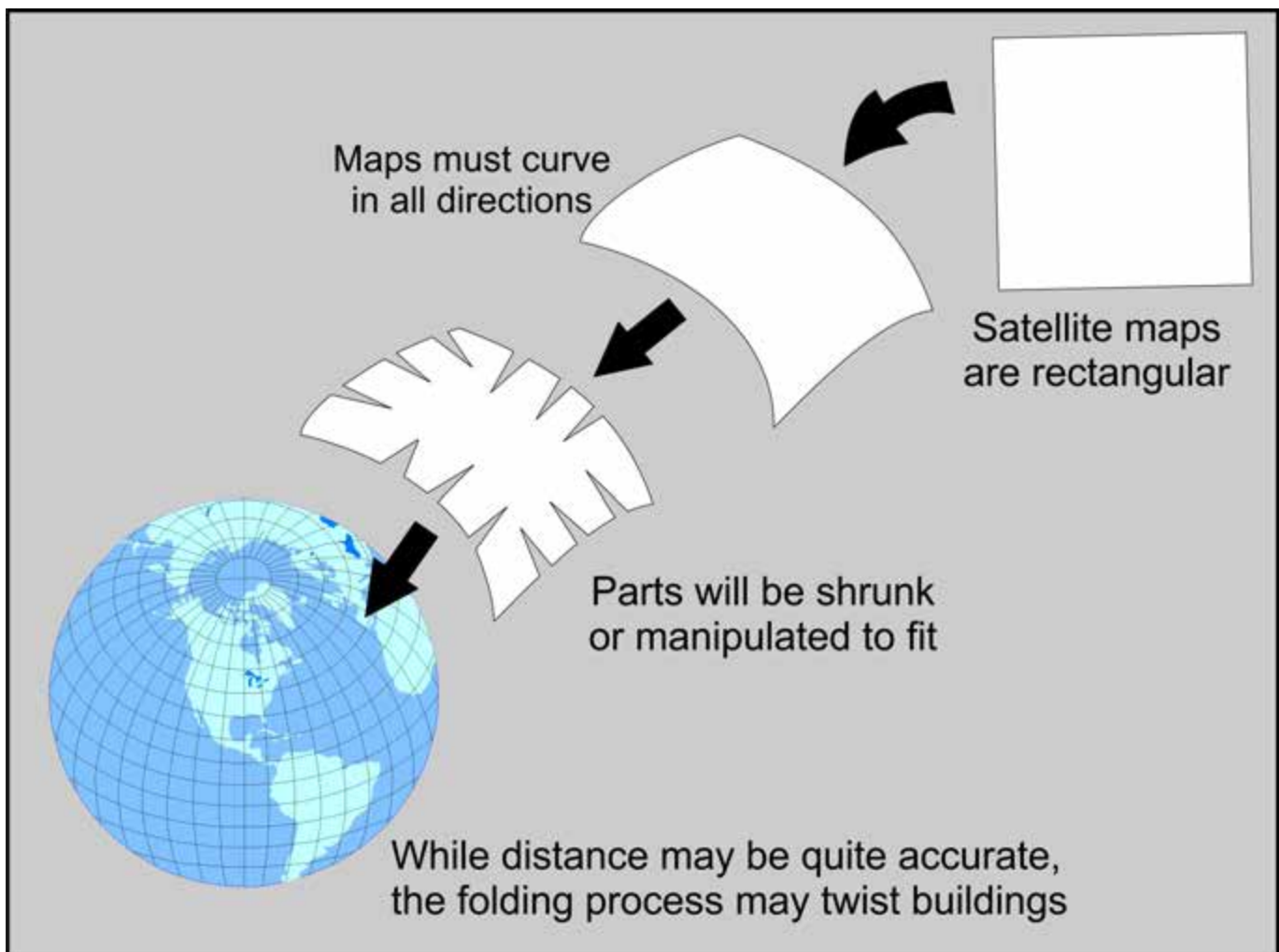
As I move over the globe at a given altitude, say 37 thousand feet, I can discover the edge of some of the images, because the date changes. Since Google Earth has customers who pay for specific data, the images over some cities are far more numerous and complex than the images over wilderness or desert.

Now, on top of this, I have noticed that some of the images I captured seven years ago have been removed and replaced by more modern images. And to make it even more complex, in some of the images, the angle of the satellite looking down from space is different. Consider the two images on the next page. The B&W image is from Google Earth over the walled city of Shibam in Yemen in 2009. The second image came from Google Earth in 2016. There are differences. As you check the photos, remember that many of these mud buildings are 8 and 9 stories tall.



Note some of the changes. The image on the right (2016) is from a different perspective. The 2009 image (B&W) was taken from almost directly above, But you can see the front sides of some of the buildings. In the 2016 image, the satellite is positioned differently While the newer image has higher resolution, the angles of the buildings are different so that the back sides of the buildings are visible. This is very important when measuring mosque qibla angles.

While Google has not revealed how its images are placed and welded together, the issue of placing a square image onto a convex surface also requires that the image be manipulated. Google is not saying how this manipulation is being done, but it is obvious that it can affect accuracy at the edges of the image.



The image below is taken from Google Earth, showing the borders where different satellite photos are brought together.



It is fascinating to see how images of different resolutions and different angles are brought together to make the Google world appear to be seamless. However, the seams are sometimes blurred as Google tries to bring similar objects together. Given the thousands of maps involved, I would imagine that this is done by computers and complex algorithms.

In 2016, I approached Google and asked them about the issues being raised concerning the accuracy of using Google earth to plotting Qiblas. They explained to me that Google Earth internally uses the WGS84 datum. That means its model of the planet is a spheroid. That's better than just a sphere, but still only an approximation of the actual shape of the planet. Complicating things further, there are variables like continental drift adding effects that change over time.

On the question of accuracy, they said that in most places, the imagery in Google Earth is located to within 100 - 200 meters of what you'd get with a GPS. In some remote places or places where there's not a good tie-point (eg. islands) it can be worse, but generally the misplacement is under 20 meters. In Mecca, some features have a displacement of ~15 meters between the imagery they had in 2004 and the imagery used now in 2016.

When I asked them what model the ruler tool uses, and what it mean to "face" a direction on a spheroid they replied: *The ruler uses a geodesic line. That means a line that follows the great circle distance (shortest path) between two points. On a sphere, this can be very counter-intuitive. For instance, the shortest-distance path from San Francisco to Mecca is nearly due north (9 degrees), up and over the north pole (and that's 9 degrees from the sphere's center of rotation, not magnetic north, which also moves around and varies from location to location).*

They suggested that instead of trying to measure "direction" on a sphere, people instead should use "direction preserving" projections.

See <http://www.progonos.com/furuti/MapProj/Normal/CarlProp/Rhumb/rhumb.html>. But, they added, as points get farther and farther apart, it becomes less and less clear what "direction" means.

Having said all this, several things seem apparent:

1. Google Earth provides us with an excellent overview of places and situations that is readily available to the public. In locations where Google Earth has done in-depth research, the accuracy is higher as there are more higher resolution images available, and more good tie-points with actual GPS readings. I have found this to be true. When measuring the distance from point A to point B in the Middle East, Google Earth is very accurate. Even over very long distances, they can be accurate to within ~200 meters. My son, who at this writing is in the Middle East, made measurements with his GPS, and communicated with me in my office in Canada. He would measure short distances and various way-points on the ground, and we discovered that these favorably compared to the measurements on Google Earth Professional.
2. When using Google Earth's ruler, measuring the accuracy of the "heading" tool is more difficult. So much depends on how the tool is used. For instance, when zoomed in close to a structure, the tool provides a line that is one pixel wide. The accuracy of this pixel depends on the resolution of the

map. When one zooms out and then heads for another location, the width of the yellow line varies according to the resolutions of the images it is passing through. So in short, the best way to measure the axis of a mosque is to visit the site, and use a dedicated GPS unit rather than Google Earth.

3. Google Earth, however, is an excellent tool for making illustrations. In my research I have used Google Earth images to illustrate the direction of Qiblas. When I first started collecting data, Google Earth did not exist, but GPS units could be purchased. Before visiting a mosque I would do a careful study of what was published about the mosques. Then when visiting the mosque I would take GPS readings. By the time Google Earth became available, I realized that the majority of the mosques were facing Petra in Jordan. At that time I experimented and discovered that I could also include a line from Mecca and Petra back to the mosque to see which one was more accurate. So in the first chapter “*Early Islamic Qiblas*” when illustrating mosques, I sometimes would include a line back to the mosque under examination, to demonstrate the closest Qibla direction. Not surprisingly these Google Earth images are very close to the data we found when examining mosques on the ground.

4. While Google Earth is an easy solution for making illustrations, better tools are available for measuring. For online measuring I prefer to use Earthdata’s ASTER. This is the *Japanese Advanced Thermal Emission and Reflection Radiometer*, or ASTER. It is an instrument on board NASA’s Terra spacecraft. NASA launched the Earth Observing System’s flagship satellite “Terra,” named for Earth, on December 18, 1999. Terra has been photographing the earth since then. Terra carries five state-of-the-art sensors that have been studying the interactions among the Earth’s atmosphere, lands, oceans, and radiant energy. The map it produces is called a global digital elevation model and the satellite images the entire earth every 1 to 2 days.

Because ASTER uses images taken from a single high quality camera on one satellite, at one elevation, it does not have the problem of multiple images at multiple elevations. Second, because ASTER takes long seamless images around the earth, it has fewer issues with overlapping or connecting images. ASTER also provides high-resolution images of planet Earth in 14 different bands of the electromagnetic spectrum, ranging from visible to thermal infrared light. The resolution of images ranges between 15 and 90 meters.

An update to the ASTER data adds 260,000 images to the already-expansive map, and improves basically every measurement—spatial recognition, horizontal and vertical accuracy, and recognition of bodies of water. The map covers 99 percent of Earth’s landmass, and its measurement points are just 98 feet apart.

The ASTER data has been validated by NASA, METI, Japan’s Earth Remote Sensing Data Analysis Center (ERSDAC), and the U.S. Geological Survey, and the U.S. National Geospatial-Intelligence Agency, but users are still warned that there will be a few “anomalies and artifacts” that limit its use for certain projects.

Therefore, for research purposes I applied for permission to use ASTER data, and only use Google Maps for illustrations. But for the best measurements, nothing tops visiting the mosque and checking it with a good GPS unit, before checking the same points on Google Maps.

Obtaining Qibla Calculations

After publishing the book *Qur'ānic Geography*⁶⁶ in 2011, fellow historians and academics encouraged me to publish my research data on early Qiblas more fully. *Qur'ānic Geography* focused on the geographical references in the Qur'ān, with only minor attention given to the mosques of early Islam that pointed to the city of Petra in Jordan.⁶⁷ As a result, this book attempts to provide some of my research data more fully and address a few resulting issues in greater detail.⁶⁸

This chapter concerns the techniques I used to measure the qiblas of mosques, both through visiting the mosque, and also through using online resources. The casual reader might imagine that one needs only to briefly visit an old mosque to determine its original qibla direction, or they might imagine that one simply has to zoom over it with Google Earth.

While these may be helpful activities, it actually entails more work. When undertaking this research, I first needed to locate appropriate mosques. The Middle East is filled with mosques, and many of them claim a long history. But few actually date back to the founding years of Islam. Additionally many of the old mosques are hard to date.

My research spanned several decades of traveling and collecting data, which was later augmented by colleagues and interested friends who forwarded to me coordinates of mosques that they had “discovered” and wondered if they would fit into my research. Because there are so many mosques, each with varied histories, I began by researching papers written by historians and archeologists. Later, when I discovered the online database at archnet.org I added more mosques that I had previously missed.

Before I visit a mosque, I preferred to first learn as much as I can about the mosque, such as when was it built and when might it have been reconstructed. Most functioning older mosques have undergone extensive rebuilding over the centuries. One might imagine that when visiting an early mosque it will look like the beautiful structures that commonly amaze western tourists. Usually the opposite is true, as many of the earliest mosques are just piles of stones with a bit of foundation, usually with nothing standing more than a meter high. Whatever the case, I needed to work my way back through various levels of remodeling and rebuilding to understand the earliest structure and what its qibla might have looked like.

When I learn of a mosque, I usually begin with an online visit to Archnet⁶⁹ where I search for the mosque in question. This website is a globally-accessible, intellectual resource focused on architecture, urbanism, environmental, landscape design, visual culture, and conservation issues related to the Muslim world. Archnet's mission is to provide ready access to unique visual and textual material to facilitate teaching, scholarship, and professional work of high quality. Officially launched in 2002, it began as a partnership

66 *Qur'ānic Geography*, by Dan Gibson, Independent Scholars Press, 2011, Vancouver, Canada

67 These are found in *Qur'ānic Geography*, starting in page 251, chapter eighteen, which is a mere 22 pages out of total of 480 pages

68 Feel free to email me at: research@canbooks.ca

69 . <http://archnet.org>

between the Aga Khan Trust for Culture and the Massachusetts Institute of Technology (MIT). Archnet has since evolved into the largest open, online architectural library with a focus on Muslim cultures. Its digital archives form a comprehensive resource on architecture, urban design, landscape, development, and related issues. Archnet provides a bridge for interested persons to learn how to enhance the quality of the built environment, to compensate for lack of resources for students and faculty in academic institutions, and to highlight the culture and traditions of Islam.

Archnet's ambition is to become the authority in the field of architecture in Muslim societies today by providing an unparalleled resources featuring vetted and refereed articles, data, and research. Through contributions from the Aga Khan Trust for Culture, the Aga Khan Program for Islamic Architecture at Harvard and MIT, and donated collections of historic archives and documentation on contemporary building trends shaping the built environment today, Archnet continues to grow and is an excellent resource to begin with.

The new version 2.0 of Archnet was launched in 2014 and is a partnership between the Aga Khan Trust for Culture and the Aga Khan Documentation Center at MIT Libraries. Together, these two institutions, established over three decades ago, share an integral education mission to generate and disseminate knowledge and resources; provide a venue for debate and discussion; showcase best practices and lessons learned; and, present Muslim visual and material culture with historic, cultural, and geographic specificity. Despite all of this, Archnet does not provide us with any data on the qibla direction of the buildings in their database.

As an example, let's assume that we want to examine the palace and mosque complex in Lebanon known as 'Anjar. A search on Archnet will bring us to site number 3711.⁷⁰ If we choose "DATA" from the menu, we will discover that this Umayyad site was constructed in 714-715 CE or 96 AH. There are no dates given for remodeling or rebuilding because this site was never rebuilt, although if you read the attached article there is evidence of some Byzantine influence in the architecture. When reading the attached article by Hafezk, K. Chehab titled *On the identification of 'Anjar ('Ayn al-Jarr) as an Umayyad Foundation*, we are alerted to some of the earlier archeological work that has been done on the site starting in 1953.⁷¹

From this website we learn that 'Anjar was a large palace complex, with a palace mosque occupying a spot in the south east quadrant of the complex, but near the centre of the complex.

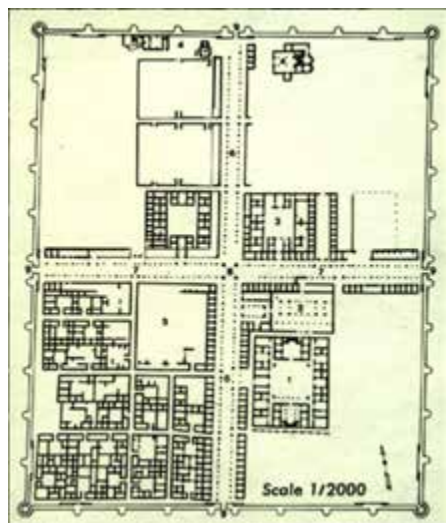
From a general internet search, we can also discover that 'Anjar is a UNESCO Heritage site.⁷² By contacting UNESCO, we can get the address of the National Council of Tourism in Lebanon and a list of the archeological excavations and perhaps even an email address of those who did the excavations. If we have done our research right, we will visit 'Anjar with a ground plan of buildings. The most popular is one done by Creswell that is available on the Internet.⁷³

70 <http://archnet.org/sites/3711>

71 Hafezk, K. Chehab, *On the identification of 'Anjar ('Ayn al-Jarr) as an Umayyad Foundation*

72 <http://whc.unesco.org/en/list/293>

73 <http://www.mousaler.com/anjar/ruins/data/excava.html>



When I first arrive at a site, I usually have to take a moment to orient myself. Most ancient sites are a maze of fallen stones and rubble and it takes a few minutes to locate where you are in relation to the plans you have downloaded. What we want to do is locate the palace mosque before we get sidetracked in exploring more of this amazing site.

Once we have identified the courtyard of the mosque which is surrounded by a portico with two bays to the east and west, and one to the north we can start to look for clues for the qibla direction. There are various pieces of evidence. For instance, on the south side, the prayer hall has two naves parallel to the qibla wall, like the Great Mosque of Damascus. Walls mark the location of a maqṣūra in front of the mihrab. A small door next to the mihrab led to the great palace

adjoining the mosque, of which a high fragment of the façade still stands.

Once the mosque is clearly identified, it is important to examine the foundation around the mosque to see if there is any evidence of an earlier mosque beneath it. One indication of this might be the use of different stones, masonry, or building material that is obviously different in style or weathering.

It is important to remember that one should never “move stones” or “unearth” anything. It is highly illegal in most countries to carry out an “excavation” without permission from the government.

Once we are satisfied that this is the original mosque, we can then go about determining the qibla direction.

I purchased my first dedicated GPS unit back in 1999, and thankfully they have improved over the years both in accuracy as well as in ease of use.

Despite this, not all GPS's are same. Some will give you a compass so you can determine direction and degrees on an angle while others will require that you set way points. If you want to set way points, then in 'Anjar it is probably best to try several things. First, set waypoints around the mosque. Fortunately the mosque roof has collapsed so we have access to satellites from within the mosque itself.





Second, I suggest standing in the middle of the central passageway that divides Anjar in half, (see photo above and map on the previous page) probably somewhere in the north. (Use of a long tape measure will guarantee that the waypoint is in the middle of the road. This road runs directly parallel to the mosque, and will provide us with an easy reference, which we can check later in the mosque itself.

Set the first way-point in the middle of the pathway and then walk down that pathway a good distance and set a second way-point in the middle of the passageway. This could be repeated for the length of the pathway. This will provide us with a line that moves in the same direction as the entire 'Anjar structure. If you note the GPS coordinates of these way-points you can enter them in Google Earth to get a rough estimate. It is better to use Earthdata's ASTER data. The ASTER data has been validated by the U.S. Geological Survey and the U.S. National Geo-spatial-Intelligence Agency. However, if you want to use ASTER, you need to ask for permission first, and explain your purpose for wanting access to their data.

Here are some guidelines I have made for myself over the years. First, if the mihrab is not evident, or if the mosque or building was constructed before the mihrab was first used, then I need to find the qibla wall. Sometimes there is a mark on this wall to indicate that it is a qibla wall. Sometimes it is just evident from the architecture that people lined up for prayer towards that wall. Remember that many early mosques were wider than they were deep. This is to allow people to stand in a wide line facing the qibla wall, rather than in short lines going towards the back, like you might find in an older church.

It is important not to measure the qibla direction using a side or back wall. There was no need for early mosques to be square or rectangular. Some have very odd shapes. However, it is usually obvious where people stood in a wide line facing a wall. Again, let me repeat, I strongly recommend NOT using side walls or back walls, as most of the early mosques were far from square. In my calculations I projected 90 degrees from the Qibla wall ignoring all the other walls unless they were at a right angle to the qibla wall. The mosque I demonstrate in the film⁷⁴ was anything but square, so that is why the Qibla wall alone must be used.

74 <http://TheSacredCity.ca>

Second, as I have examined many mosques, I now recognize that there are only a few qibla choices. Most mosques face Mecca in Saudi Arabia. They may be off a few degrees, but it is obvious that Mecca is their qibla. However, after examining a number of early mosques it became obvious that they were not facing Mecca but were facing southern Jordan. Only after correlating data from eight or nine such mosques was it obvious that they faced the city of Petra. However, some mosques faced directly between Petra and Mecca. The third choice were the mosques of North Africa and Spain that were more or less parallel to a line drawn between Mecca and Petra. There are very few mosques that do not follow one of these four patterns.


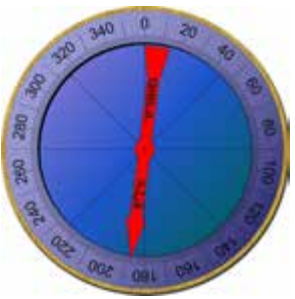
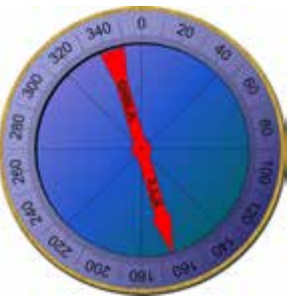

Another helpful action, is to speak to the custodians of the mosque or to the older men of the town or village, if there is one close-by. While they may only know the local explanation and history of the mosque, they may have some interesting insights. It is also advisable to spend some time in the neighborhood talking to people and getting the various names used for the mosque and asking about its history. Another good lead is to visit local historians and old men who like history. Sometimes I have asked for those who can recite poetry and genealogies. These men often have retained information that is not known to everyone. After returning home from the mosque, I would put all the information together, and then check what I had found with online satellite photos.

One of the dangers I found in calculating the qibla direction, is to simply look down from space at a satellite photo and try and imagine where this particular building points. One or two degrees variable in the satellite photo can have the qibla pointing off several degrees, which will shift it considerably if the place it is pointing at is several thousand kilometers away.

So, after researching over fifty mosques, I also found it helpful to also draw lines on a satellite photo from Mecca to the mosque. If Mecca was obviously not the qibla, then I would choose Petra, or one of the other common directions. It was usually very obvious which direction the mosque pointed.

The biggest challenge is to find mosques that have not been rebuilt over the centuries to face towards Mecca. Once a mosque has been rebuilt, it is very hard to tell its original qibla direction.

Below in the data that I collected for the 'Anjar Mosque and placed in Early Islamic Qiblas.

| Actual Mosque | Petra | Mecca | Jerusalem |
|---|---|--|---|
| 190.76 ° | 187.15° | 163.40° | 196.93° |
| Misses by: | 3.61° | 27.36° | 6.17° |
|  |  |  |  |

Summary: This mosque points closer to Petra than any other Qibla direction, and is out by only 3.61°.

When I first released my finding on early Islamic Qiblas in 2010, most readers assumed that I had simply looked at satellite photos and jumped to conclusions. This was reinforced by the black and white photos I used in *Qur'ānic Geography*, illustrating the Qibla direction of various mosques. As fellow academics examined my writings, they asked for a full release of my data, as my findings seemed unbelievable and utterly fantastic. It was assumed by everyone that the early Muslims were incapable of correctly establishing accurate Qiblas.

In the next chapter I will examine how it was that we all came to believe that the early Muslims were either incapable or very sloppy at calculating their qiblas.

The Qibla Misunderstanding

Much has been written over the last thousand years on the topic of how Muslims can correctly identify the qibla direction when they pray. From about 900 until 1800 CE, thousands of Arabs wrote thousands of books and articles on how this could be done using astronomy and geography.⁷⁵ Despite this, there is still disagreement on the technique used by the earliest Muslims.

In relation to finding the Qibla direction, King and Hawkings divide Islamic history into two parts.⁷⁶ First, they suggest that the earliest Muslims used “folk astronomy” to determine the Qibla, and King claims they were wildly inaccurate. For the second section (9 - 16th century), King and Hawkings note that “the techniques of folk astronomy were employed by the legal scholars to determine the Qibla...” but the era really belongs to the mathematicians. It is on this second era that King, Hawkings, Hogendijk and others focus most of their attention.⁷⁷

In this short chapter, we will focus on what King calls “folk astronomy” but we need to challenge the mistaken idea that the early Muslims used inaccurate or inadequate methods. Ahmad Dallal, who wrote *Beyond the Hijaz (by the Red Sea)*, reflects: “Syria and Iraq, which were near enough to Mecca so that pre-mathematical methods of computing the direction of the qibla provided fairly accurate results, many of the mosques built in the early period of Islamic expansion were misaligned. With increased knowledge of mathematical astronomy, this flaw was recognized and although some of the misaligned mosques retained their orientation, others were rebuilt to face in the correct direction.”⁷⁸

I wish to present a different opinion, and in doing so realize that I am not only going against modern scholars, but against the general opinion expressed by Muslim writers for the last thousand years. I trust that in the next few pages I will be able to explain that the early qiblas were actually very accurate, why the change took place to preferring mathematical solutions, and why there were misunderstandings about how the early qiblas were determined.

In the first chapter I attempted to demonstrate that the early mosques in Islam were not misaligned because of poor tools or inadequate techniques, but rather because they were facing different qibla directions. For the first century of Islam, all qiblas pointed to Petra in Jordan. This was not a mistake as we

75 King, David, A, *World maps for finding the direction and distance to Mecca*, Brill 1999, Page 4 & 5 “... the sources are some 10,000 odd scientific manuscripts in Arabic, Persian and Ottoman Turkish, and several hundred scientific instruments; we know of over 1,000 Muslim scientists who worked between the 8th and 18th centuries.”

76 King, David A, *World maps for finding the direction and distance to Mecca*, Brill, 1999, 1.2 Folk astronomy, Page 2

77 After the 16th century, we enter into the modern era when chronometers and modern time keeping methods became available, allowing for the adoption of a universal system of latitude and longitude.

78 Dallal, Ahmad, *Islam, Science, and the Challenge of History*, Tseng Information Systems, Inc, 2010 Page 2

will see later, but as the archeology clearly demonstrates, Petra was the first original holy city of Islam. According to traditional Islamic history, in the year 61 AH (October 10, 680) Abdulla Ibn Zubayr declared himself caliph in the Holy City, which the later chroniclers of Islam call Mecca, but after this we will call Petra, as all of the Qiblas pointed there. Ibn Zubayr’s actions started the second Islamic Civil War. Ḥajjāj ibn Yusuf was sent with an army to retake Petra. In the process, Petra was destroyed, and as I explain in the book “*Qur’ānic Geography*” the Black Stone was whisked away into the Arabian desert, eventually finding its place in the location we call Mecca today. This location became the second Qibla.

Later, in 702 when al-Ḥajjāj founded the city of Wāsiṭ, situated midway between Basra and Kufa, he decided to build a new mosque in his honor. But it seems he faced a problem. He refused to pray to the old city of Petra which he helped destroy, and he refused to pray to the new qibla in Mecca.⁷⁹ In his protest, he chose to point his new mosque in Wāsiṭ directly between Petra and Mecca. This became the third qibla. And for the next 68 years, seven large new mosques in Iraq and Syria adopted the same practice. In much the same way, the Muslims of North Africa and Spain also refused to point their qiblas at Mecca and chose rather to point their qiblas south, most of them parallel to a line drawn between Mecca and Petra, and this became the fourth qibla.

While there is little written evidence for all of this, outside of charting the physical qiblas of ancient mosques, and then interpreting Islamic history at the time of their construction, it does provide explanation of why the Qiblas pointed where they did, and we suddenly realize that the early mosque Qiblas were quite accurate.

Since Muslims writing in the second era, all the way up until modern times did not recognize Petra or any of the other options as possible Qiblas, they assumed that Mecca was the only Qibla ever used, and thus assumed that the early Muslims were very inaccurate at measuring their Qiblas.

But were they? In the first chapter of this book I demonstrated that many of the early qiblas were amazingly accurate, sometimes to less than one degree. Below are four tables each demonstrating the accuracy of the mosques that pointed to the four different qiblas.

Mosques Pointing to Petra

| Y e a r AH | Y e a r CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------------|---------------|------------------|---------|---------------------|-------------------|---------------------|----------------------------|
| 6 | 627 | Guangzhou | China | Grand Mosque | Petra | 2.81° | never |
| 15 | 637 | Hama | Syria | Jāmi’ Hama al’Kabīr | Petra | 0.61° | never |
| 80 | 699 | Humeima | Jordan | Qaṣr Humeima | Petra | 7.33° | never |
| 86 | 705 | Ṣan’ā | Yemen | Grand Mosque | Petra or Jer | 0.36° | never |
| 87 | 706 | Khirbat al Minya | Israel | Khirbit al Minya | Petra | 0.8° | never |

79 See page 45-46

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|------------|------------|---------------|-----------------|-------------------------|-------------------|---------------------|----------------------------|
| 89 | 708 | Damghan | Iran | Masjid i Tarik Khana | Petra | 5.59° | never |
| 90 | 709 | Jerusalem | Israel | Al-Aqsa Mosque | Petra | 3.43° | never |
| 95 | 714 | Jericho | Israel | Khirbat al-Mafjar | Petra | 0.59° | never |
| 95 | 714 | ‘Anjar | Lebanon | ‘Anjar Palace Mosque | Petra | 3.61° | never |
| 125 | 743 | Amman Airport | Jordan | Mushatta Palace | Petra | 3.99° | never |
| unknown | unknown | Bowhar | Oman | Sahī Ramdah Mosque | Petra | 0.58° | never |
| unknown | unknown | Suma’il | Oman | Suma’il Omani Mosque | Petra | 1.55° | never |
| unknown | unknown | Samarkand | Uzbeki- stan | Bibi Samarkand | Petra & Jer. | 1.78° | never |

Note the pink column which shows how close the Qibla is to pointing towards Petra in Jordan. The average accuracy is within 2.9° (1.9° if we remove the two worst examples) This is amazingly accurate for mosques that are as far away as China and India.

Mosques Pointing Between Petra and Mecca

| Year AH | Year CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|------------|------------|----------------|---------|-----------------------|-------------------|---------------------|----------------------------|
| 87 | 706 | Wāsīt | Iraq | Ḥajjāj Mosque | between | 0.29° | never |
| 91 | 709 | Damascus | Syria | al-Umawi al-Kabīr | between | 1.75° | never |
| 102 | 721 | Boşra | Syria | Mosque of Boşra | between | 0.35° | never |
| 107 | 726 | Hayr al Gharbi | Syria | Hayr al Gharbi | between | 3.21° | never |
| 110 | 728 | Hayr al Sharqi | Syria | Qaşr Hayr al Sharqi | between | 2.8° | never |
| 122 | 740 | Baalbeck | Lebanon | Ba’albeck Mosque | between | 0.67° | never |
| 127 | 744 | Ḥarrān | Iraq | Mosque and University | between | 0.32° | never |
| 155 | 772 | Raqqa | Syria | Raqqa Mosque | between | 0.86° | never |

Once again note the pink column. This is for mosques built under the control of al-Ḥajjāj ibn Yūsuf. The average accuracy is within 0.98°.

Mosques Pointing Parallel to a line drawn between Petra and Mecca

| Y e a r AH | Y e a r CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------------|---------------|----------|---------|----------------------------|-------------------|---------------------|----------------------------|
| 115 | 732 | Tunis | Tunisia | Jāmi' al-Zaytuna | parallel | 0.99° | never |
| 168 | 784 | Córdoba | Spain | Córdoba Mosque | parallel | 2.01° | never |
| 221 | 836 | Qayrawān | Tunisia | Jāmi' Uqba Ibn Nafi' | parallel | 4.22° | never |
| 236 | 850 | Sūsa | Tunisia | Great Mosque of Sūsa | parallel | 6.78° | never |
| 252 | 866 | Qayrawān | Tunisia | Al-abwan al-thal- athah | parallel | 3.54° | never |

Once again, the average accuracy of these mosques is an amazing 3.5°

Mosques Pointing to Mecca

| Y e a r AH | Y e a r CE | City | Country | Name | Original Qibla | Degrees of Error | Rebuilt facing Mecca |
|---------------|---------------|---------------|----------|-------------------|-------------------|---------------------|----------------------------|
| 109 | 727 | Banhore | Pakistan | Banhore Mosque | Mecca | 2.44° | never |
| 112 | 730 | Amman Citadel | Jordan | Umayyad Palace | Mecca | 1.36° | never |
| 146 | 764 | Kūfa | Iraq | Qaṣr Ukhaydir | Mecca | 3.9° | |
| 232 | 847 | Sāmarra | Iraq | Mosque of Sāmarra | Mecca | 1.13° | |
| 45 | 859 | Sāmarra | Iraq | Abu Dulaf Mosque | Mecca | 4.6° | |
| 2263 | 876 | Cairo | Egypt | Ibn Ṭūlūn Mosque | Mecca | 9.27° | - |
| unknown | unknown | Asnaq | Iran | Friday Mosque | Mecca | 4.15° | - |
| unknown | unknown | Fahraj | Iran | Masjid i Jāmi' | Mecca | 10.84° | 9th cent. |
| unknown | unknown | Ṣalālah | Oman | Al Balid Mosque | Mecca | 5.33° | 10th cent. |

The average accuracy of the Mecca oriented mosques, build during the 2nd and 3rd centuries of Islam are within 4.78°

If we take the above average accuracies and compare them, it starts to become obvious that the average Qibla accuracy was deteriorating, rather than improving over time.

Petra: 6-125 AH Average accuracy is within 2.9°

Between: 87-155 AH Average accuracy is within 0.9°

Parallel: 115-252 AH Average accuracy is within 3.5°

Mecca: 109-262 AH Average accuracy is within 4.8°

This data seems to indicate that not only were the early Arabs accurate in determining their qibla direction, there seems to be a breakdown in technique as the accuracy of later mosques lags behind those of earlier mosques.

This is exactly the opposite of what Muslim writers between the 9th and 17th centuries claimed. Obviously, as they did not have the tools or ability to visit mosques all over the world to determine their Qibla direction, they were unaware of the four different qiblas. Therefore they concluded that the early methods were wildly inaccurate. And so until now, scholars of Islamic history have assumed the same thing. Not only is it difficult to accept that Petra was the object of the original qibla, we must also adjust our thinking to accept that the earliest Muslims had some method of setting their Qiblas with great accuracy.

So instead of King's proposed two categories (poor early techniques followed by more accurate mathematical techniques) I would like to suggest a slightly different scenario. From my reading of Islamic writings, I have come to the conclusion that the art of determining the qibla direction came out of early navigation, not mathematics. In the ancient past the Arabs sought for methods to help them guide their camel caravans across the trackless deserts of Arabia. They needed to know where cities lay over the horizon in order to guarantee that their caravans arrived at the correct city, and not one of an enemy.

Therefore we need to go back to the time of the caravans to understand how this "folk astronomy" as it has been called worked. The goals of folk astronomy were quite clear. The early Arabs were not interested in mapping the world using latitude and longitude. Rather, they needed to plot their way across the trackless desert,⁸⁰ using the stars as their guide, being able to adjust their course with each night's viewing of the stars. I believe that the Arabs developed unique ways of doing this, but they left little in the way of written record of how they did it. So it is impossible to simply point to a book that explains how it was done. We must accept that the early system was lost after the last person skilled in this "folk astronomy" passed away, probably sometime in the late 8th century, as caravan trade shifted from the deserts into lands using modern Roman roads with inscribed milestones.

From the 9th century until now researchers have turned to mathematicians to help solve this problem, rather than to navigators. In the process, many different mathematical solutions have been proposed. At the same time, religious teachers and scholars of Islam have tried to discover what the earlier "folk system" was. They did this, because the Qur'ān praised the earlier system when it stated:

وَأَلْقَىٰ فِي الْأَرْضِ رَوْسًا أَن تَمِيدَ بِكُمْ وَأَنْهَارًا وَسُبُلًا لَّعَلَّكُمْ تَهْتَدُونَ
وَعَلَّمَتْهُمُ الْنَّجْمَ ۖ وَهَبَتْ لَهُمُ الْيَمِينَ ۚ وَهَبَتْ لَهُمُ الْيَمِينَ ۚ وَهَبَتْ لَهُمُ الْيَمِينَ ۚ وَهَبَتْ لَهُمُ الْيَمِينَ ۚ

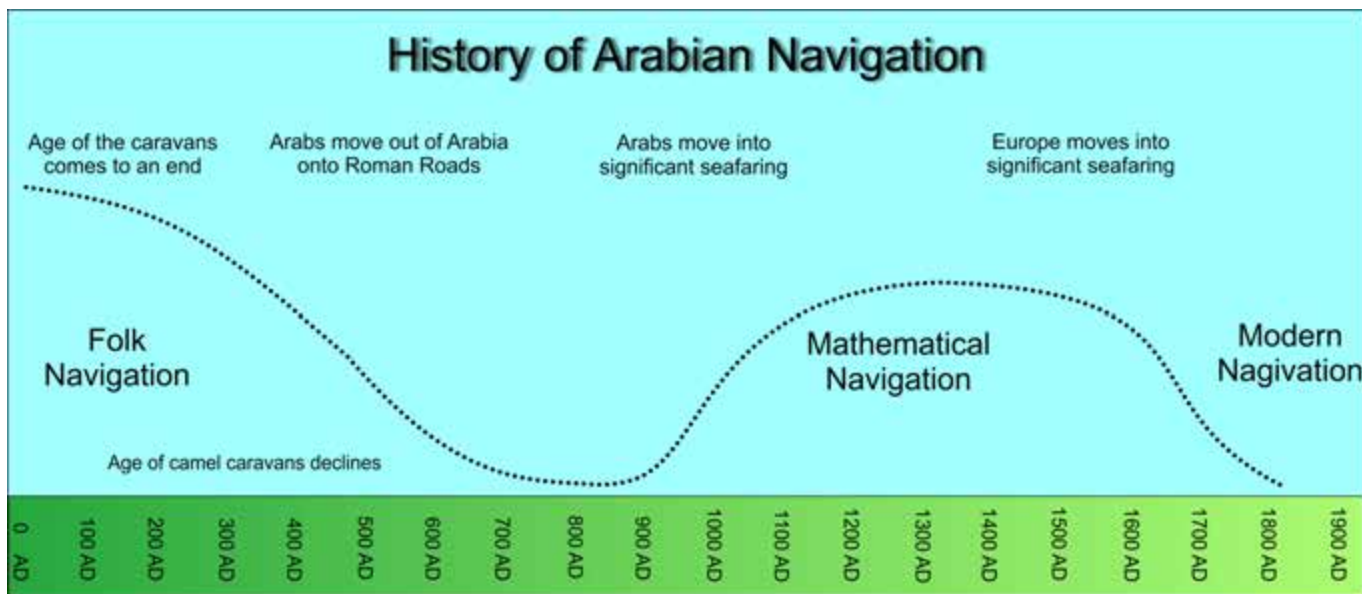
"And He (Allah) has cast into the earth firmly set mountains, lest it shift with you, and rivers and paths, that you may be guided, as well as landmarks. And by the stars men are also guided."

Qur'ān, 16:15&16

⁸⁰ *Qur'ānic Geography*, page 149 explains that Nabataean camel caravans often avoided regular trade routes as these were taxed by local tribes. They preferred to travel across the desert where others could not go, using hidden water cisterns.

From this verse we learn that Allah made river, paths and landmarks for mankind to find his way. And he gave them the stars to guide them. So from a religious viewpoint, it appears that the introduction of new mathematical formulae was a turning away from what God had provided. Therefore, from the 9th century onwards, religious teachers seem to feel that mankind was drifting away from real Islam towards man-made systems. The religious teachers wanted to explain how to find the Qibla using the stars, as this was what the Qur'ān encouraged but by that time much had been forgotten. But that did not keep them from proposing all sorts of solutions.

Below is a rough diagram of what I am proposing how Qibla-finding-knowledge may have developed.



So while we can learn many things by reading the proposals made from the 9th century to the 16th century, we must look farther afield for the answers we are looking for. And we must look to early Arab navigation to provide us the clues.

However, before trying to discover just how the Qibla was set in early times, it would be helpful to examine a couple of the solution that religious leaders proposed between the 9th century and the 16th century, of how the early Muslims set the Qibla.

An example of one of these religious solutions is what is known as “sacred geography.” Since Muslims around the world wanted to face the Qibla in Mecca, the Muslims of the 9th-16th centuries recognized that there were different geographical regions stemming out from Mecca. Therefore someone looking for the qibla in Turkey would have a different perspective from someone in India or in Africa.⁸¹ Some 20 different schemes of sacred geography are known from some 30 different medieval sources.⁸² The concept of Sacred

81 King, *The Sacred Geogrpahy of Islam*, also EI2 under the heading Mecca (As centre of the world), reprinted in King, studies, C_X.

82 King, David A, *World maps for finding the direction and distance to Mecca*, Brill, 1999, pg 51

Geography around the Qibla seems to stem from a Yemeni scholar named Ibn Suraaqa (fl. ca. 1000) who first proposed various schemes with 8, 11, and 12 sectors around the Ka'ba ⁹³

In short the Qibla direction was worked out for these various sectors. For example, if you had only four sections, people would pray either North, South, East or West. With 8 sections they would be more accurate. With 12 sections even more accurate as everyone would be within 30° degrees ($360^\circ/12 = 30^\circ$) Everyone in that section would know the general direction they should pray towards Mecca. While this might be useful to individuals in their homes or on journeys, it would not be helpful in setting an accurate qibla for a mosque.



To the left you can see one of the oldest known schemes of Islamic Sacred Geography, found in a late 15th century copy of the geographical treatise of the 10th century scholar al-Maqdisi but certainly not original to that work. The world is divided into eight sectors about the Ka'ba but some of the geographical information is missing for various sectors. That which has been copied attests to the early date of the scheme: even the areas of various regions are given, a tradition found already in the writings of the 8th century scholar al-Farāzi (m5:27).⁸⁴

Many of the other early systems used observable phenomena such as celestial sightings. This was well known to them, as is attested by Ibn 'Abbas and al-Hasan al-Basri⁸⁵ who implied that the major

axis of the rectangular base of the Ka'ba pointed towards the rising of Canopus, the brightest star in the southern celestial hemisphere, and that the minor axis points towards summer sunrise in one direction and winter sunset in the other.

Some medieval Islamic writers mention that the earlier system involved meteorological phenomena such as the winds, and phenomena in the sky.⁸⁶ They also note that folk astronomy from pre-Islamic times was practiced by religious teachers at the same time that mathematical astronomy was developed.

There were five applications of traditional astronomical folklore: (1) navigation, (2) the regulation of the lunar calendar; (3) the determination of the times of the five daily Muslim prayers, which are astronomically defined; (4) finding the Muslim Qibla and (5) the organization of agricultural activities in the solar

⁸³ On Ibn Suraaqa see King, *Yemeni Astronomy*, p. 21 and the article Makka, as centre of the world in EI2.

⁸⁴ From MS Berlin SB Ahwardt 6034, fol. 24r, courtesy of the Deutsche Staatsbibliothek

⁸⁵ Heinen, *Islamic cosmology*, 157-8, King page 7

⁸⁶ *The Encyclopedia of Islam* 2nd edition, King, Makka, As centre of the world

calendar.⁸⁷ In the next chapter I will concentrate solely on how they determined the Qibla direction.

Historical evidence of clashes between the two traditions is rare. Al-Biruni made some disparaging remarks about those who sought to find the Qibla by means of the winds and the lunar mansions: “When [some people] were asked to determine the direction of the Qibla, they became perplexed because the solution of the problem was beyond their scientific powers. You see that they have been discussing completely irrelevant phenomena such as the directions from which the winds blow and the risings of the lunar mansions”.⁸⁸

But, as we will show in the following chapter, the rising and setting of lunar mansions, as well as the rising and setting of certain stars were an integral part of the early system of navigation. But it will be only through gathering scraps of information from various sources that we will be able to piece together how the earlier system worked.

87 See King, *Medieval Islamic Shadow Schemes*, and *Astronomy in the Service of Islam*, and D. M. Varisco, *Yemeni Almanac*

88 Ali, Jamil, *The determination of the coordinates of positions for the correction of distances between cities: a translation from the Arabic of Kitāb taḥdīd nihāyāt al-amākin liṭaṣṣih masāfāt al-masākin*, American University of Beirut, 1967

Could the Arabs of the 7th and 8th centuries accurately determine Qibla direction?

From my survey of Early Islamic Qiblas, I discovered that during the first 100 years of Islamic history, all Islamic Qiblas pointed to Petra. During the second hundred years (which I call the *Time of Confusion*) some Qiblas pointed to Mecca, some pointed to between Mecca and Petra and some were parallel to a line drawn between Petra and Mecca. They did this with surprising accuracy, which seems to indicate that the early Muslims did indeed have accurate tools and techniques for establishing Qibla directions.

When confronted with the growing archeological evidence supporting a Petra Qibla, several people have argued that the Arabs of 7th and 8th centuries would not have had the technology needed to accurately determine a Qibla direction. This argument is often based on reasoning that goes like this: “Today we are much more advanced than those Arabs, and since I could never determine the direction of the Qibla without a GPS, then I doubt that they could do it accurately.” Another argument states: “The Arabs of the Arabian Peninsula were land-bound, using camel caravans. Using the stars as a method of finding direction was something sailors did. So how could the Arabs of Arabia know with any accuracy how to determine the Qibla?” The goal of this chapter is to demonstrate that there were early Muslims that had the tools and techniques to accurately determine a mosque’s Qibla direction.

Examining an account

Al -Ṭabarī records a description of the founding of the Al Aqsa mosque in Jerusalem, and the setting of its Qibla soon after the Arab armies occupied the city.⁸⁹

He (ʿUmar) then went on and entered the masjid (congregational) area. Then he went on towards the miḥrab of David, while we were with him; he entered it, recited the prostration of David and prostrated himself and we prostrated ourselves with him. then he said “Bring Ka’b to me.” Ka’b was brought to him. ʿUmar said “Where do you think we should establish the place of prayer?” Ka’b said “Towards the Rock.” ʿUmar said “O Ka’b, you are imitating the Jewish religion! I have seen you taking off your shoes.” Ka’b said “I only wanted to touch this ground with my feet.” Umar said “I have seen you. No, we shall place the qibla in the front of it; the Messenger of God likewise made the front part of our mosques the qibla. Take care of your own affairs, we were not commanded to venerate the Rock, but we were commanded to venerate the Ka’ba.”

After this, Ka’b set the Qibla direction and the Al-Aqsa mosque was constructed on the Temple Mount facing Petra. The question arises, how did Ka’b determine the Qibla direction? Before answering this question, we need to understand more of what tools would have been available to Ka’b and what techniques were known to him. First, it will take us many pages to cover the tools and techniques that Ka’b would have had access to, and then we will turn our attention to how he could have used those tools to accurately establish the Qibla of the Al Aqsa mosque.

⁸⁹ Ṭabarī Vol. 12, translated by Yohanan Friedmann, page 193

From my studies, I have come to the conclusion that the knowledge of using the stars for navigation was common among the early Nabataean Arab merchants who traveled the trackless deserts before the arrival of the Roman armies. Once northern Arabia was absorbed into the Roman province of Syria, with its system of roads and milestones, this knowledge was soon lost, perhaps within a generation.

Arab and Chinese astronomy

Let’s begin with an age old question: Who developed stellar navigation first, the Chinese or the Arabs? Joseph Needham argues in his three volume series *Science and Civilisation in China*⁹⁰ that celestial navigation was developed simultaneously by the Chinese and the Arabs. However, on reviewing Needham’s arguments, and what we have learned since 1959, I believe the Arabs had this knowledge first, and that it was transferred to China around the first century CE.

The Chinese had very rudimentary calendars in 1st century CE as seen by Da Tai Liji. (*Record of Rites of The Great Dai*).⁹¹ However Needham notes that in the 3rd century BCE, there is a story of a Chinese ruler collecting a set of observations about the stars (of more than 200,000 characters) entitled “*Master Lu’s Spring and Summer Annals*” (*Liushi Chunqiu*) containing observations pertaining to the heavens, earth and the myriad objects in the universe. Needham then points out that the astronomical writings of the Chinese begin about 3rd century BCE in the form of two books known as *Tianwen (Astronomy of Shi Shen)* and the *Tianwen Xingzhan. (Astronomical Star Prognostication)*⁹² These books disappeared from the bibliographies of the dynastic histories in the 6th century CE and were replaced by Gujin Tongzhan. (*Compendium of Astrology, New and Old*) of Wu Mi. These were lost in the Mongol period, but portions are contained in later writings.

The debate over who first started using the stars for navigation (as opposed to using the stars for fortune telling) must take into account that there was contact between the Nabataean Arabs and the Chinese during the first centuries BCE and CE. The chart below demonstrates multiple contacts between the Chinese and the Middle Eastern empires. Note that the first known contact was around 100 BCE.⁹³

Major Chinese Sources

| Source | Date Written | Referring to events |
|---------------------------|--------------|---------------------|
| Shiji or Shi Ji., ch. 123 | 90 BCE | 100 BCE |
| Qian Han Shu, ch. 96a | 100 BCE | 100 BCE |
| Hou Han Shu, chs. 116,118 | 450 CE | 97 CE |

90 Needham, 1959

91 Needham, 1959, vol. 3, pg 194

92 Needham, 1959, page 196-197

93 This chart is adapted from material presented in “*Science and Civilisation in China*” by Joseph Needham, Vol. I, Cambridge University Press, 1954, pages 192-193

| Source | Date Written | Referring to events |
|--------------------------------------|---------------|---------------------|
| Wei Lue in Sanguo Zhi, ch. 30 | Before 429 CE | 220 - 264 CE |
| Jin Shu, ch. 97 | 635 CE | 265 - 419 CE |
| Sung Shu, ch. 97 | 500 CE | 420 - 478 CE |
| Liang Shu, ch. 54 | 629 CE | AD 502 - 556 CE |
| Wei Shu, ch. 102 and Bei Shi, ch. 97 | 572 CE | 386 - 556 CE |
| Jiu Tang Shu, ch. 198 | 950 CE | 618 - 906 CE |
| Xin Tang Shu, ch 221, a,b | 1061 CE | 618 - 906 CE |
| Nestorian Stone | 781 CE | 719 CE |
| Song Shi, ch. 490 | 1345 CE | 960 - 1279 CE |
| Zhufan Zhi | 1225 CE | 1225 CE |
| Ming Shi, ch. 326 | 1739 CE | 1368 - 1643 CE |

The Chinese text that is of real importance to us is not mentioned by Needham. In order to understand the contact between the Nabataeans and the Chinese we must turn to what is known as *Xiyu chuan* (*Chapter on the Western Regions*) taken from *Hou Han shu* 88. The *Hou Han shu*, the official history of the Later (or 'Eastern') Han Dynasty (25-221 CE), was compiled by Fan Ye who died in 445 CE. Fan Ye used a number of earlier histories including the *Shi ji* by Sima Qian and the *Han shu* by Ban Gu, plus many others (including some that were also entitled *Hou Han shu*) most of which have not survived intact. The particular chapter of interest to us is the *History of China* which covers 25 - 55 CE. John Hill recently completed a translation of this text and has made copies available to scholars.⁹⁴

In the appendices of his book in section B titled *The territories of Haixi, Haibei and Haidong*, Hill tells us that the Chinese envoys to Arabia brought back with them some Arab "musicians and some skilful jugglers who performed transformations, belched fire, changed the head of an ox to that of a horse, amputated limbs, and then replaced them. They also know how to play with little balls and can keep as many as ten in the air at a time." This passage demonstrates that not only were the Chinese exploring the western world, but Arabs had traveled to China during the height of the Nabataean merchant empire. Since there was communication between the Nabataean Arabs and the Chinese, the question of who first developed astronomy and the science of celestial navigation will probably never be sorted out, but it will help us understand why there are early mosques in China. And, as the Chinese were observers of Arab navigation, some of their writings provide us with new evidence, as well as substantiating what later Arab writers surmised of the early days of Arab navigation. We are also going to search the Greek and Roman classics for more clues as well.

It would seem however, from the Chinese records, that astronomy and astrology were very much connected in their minds, and that the Chinese study of astronomy was very much focused on astrological

94 Soon-to-be published annotated translation of the *Weilüe* by John E. Hill - personal communication 30 May, 2017

projections and calendrical science rather than navigation using the stars. The Arabs on the other had good reason to develop celestial navigation.

Navigation by the stars likely developed on land, not on the seas

This may come as a surprise, as few people have researched the development of celestial navigation in Arabia. Many of the early works on astronomy, be they Babylonian, Assyrian, Egyptian or Chinese, were mainly works on astrology.⁹⁵ Most people never wandered far from home or from well marked paths, and therefore had little need for developing celestial navigation, as they could easily tell their location based on the things they observed around them. The Nabataean merchants on the other hand had a need for navigating the deserts by using the stars. In order to avoid taxes and confrontation with people who were trying to take advantage of camel caravans passing through their territory, they deliberately took their camel caravans into the vast deserts of Arabia. In chapter eleven of *Qur'ānic Geography*,⁹⁶ I explain how the Nabataeans developed rain-water collection systems to provide water for their camels. Additionally, in order to find these hidden water systems they needed a system to guide them across the trackless desert plains.

During the years I spent in the Arabian deserts, I noticed that the stars were much brighter than what I had observed in Europe and North America. There are several reasons for this. First, I was outdoors much more than I was in Europe or North America. The weather also had something to do with this. In Arabia there are many months of the year when the skies are clear of clouds. Also, the air is much clearer in the desert, where there is little humidity and little air pollution. Added to this, the Arabian deserts have nearly twelve hours of darkness. Since people only sleep an average of eight hours, this means that once the caravans stopped traveling during daylight hours, the Arab merchants had several hours of darkness before they needed to sleep.

When camping in the desert, we would spend several hours around the campfire, as there was little we could do in the darkness. For the Bedouins, this is their principle time of socializing, telling stories and exchanging knowledge. I remember many evenings sitting around a smoldering fire. As the coals glowed, the men would engage in story-telling, and the women would come from the women's side of the tent and gather around, just outside of the glow, so we could not see them, but we could feel and hear their presence.

One can easily imagine the caravan leaders taking the youth away from the fire and turning their focus to the stars. Using parts of the body and simple mathematics, the old masters would teach the young men the basics of navigation. In this way, knowledge of navigation would be passed from generation to generation.

The ancient Arabs tell us that there were two types of navigation. The first was known as *ishārāt* or the knowledge of guides and aids, such as mountains, valleys, and rock formations.⁹⁷ The second type of navigation was known as *majra*, or taking celestial bearings from a specific point. Once the celestial direction was established, the navigator would use *ishārāt* along the way during daylight hours. Most Arab

95 Pines, 1964

96 Gibson, *Qur'ānic Geography*, page 149

97 Tibbetts, *Arab Navigation*, Royal Asiatic Society, 1981, Page 33 & 271

navigation books are divided into two sections, one dealing with *ishārāt* and the other dealing with *majra*.

After years of using this system of navigation across the desert, the Arabs adapted it for use aboard ships. Thus it is no surprise to discover that it was the Arabs who took to the high seas first and not the Chinese. It was Arab ships that plied the ports of India and China, and not the other way around. When Ferdinand Magellan made his famous journey around the world, he relied on an Arab navigator and Arab charts to guide him.

What Tools Were Available?

Today, most books on navigation deal with navigation on the water. Celestial navigation on land is seldom addressed. In my research, I discovered that the Arabs used only a handful of tools, and some very simple math. The secret to understanding this is to put aside what you may know of navigation and mathematics and try to understand from an early Arab perspective what they were doing. I discovered something similar to this when studying the Arabic language in my early twenties. As long as I tried to understand Arabic grammar through English grammar, I struggled. When I put English grammar aside and learned the Arabic terms and meanings, I began to understand Arabic grammar structure.

In much the same way, we need to put aside our modern concepts of math and geometry and try to think from early Arab perspectives. The first challenge is that they did not think in terms of latitude and longitude. Using these will only bring confusion. The Arabs had no desire to map the world; they only wanted to determine where locations were over the horizon. Second, the Arabs had 224 degrees⁹⁸ in their circle and not 360 degrees, which we seem to have adopted from the Babylonians, who used base 60.

Using *qiyās*

Before the invention of the compass, watch and sextant, the Arab's main guide was determining how far north or south he was. To obtain this, Nabataean Arab merchants measured the height of a known star above the horizon. Most often this was the Pole Star or North Star, since this star was the one that did not move in the sky. They simply had to identify this star, and then directly measure its height above the horizon. This was the simplest method, and was known as the science of *qiyās* (measurement).

You can read extensively about this in Aḥmad ibn Mājid al-Najdī's book: *Kitāb al-Fawā'id fī uṣūl al-baḥr wa'l-qawā'id*. (1421 CE) This book has been translated by G. R. Tibbetts and published under the title: *Arab Navigation in the Indian Ocean before the coming of the Portuguese*. (The Royal Asiatic Society of Great Britain and Ireland, 1981). This book tells us how the early Arabs used both *ishārāt* as well as *majra* to navigate.⁹⁹ Fortunately, ibn Majid gives us some clues as to how the Arabs navigated in previous ancient times and how navigation developed up until his time.

The early science of *qiyās* involved holding fingers out at arm's length and using them to measure the

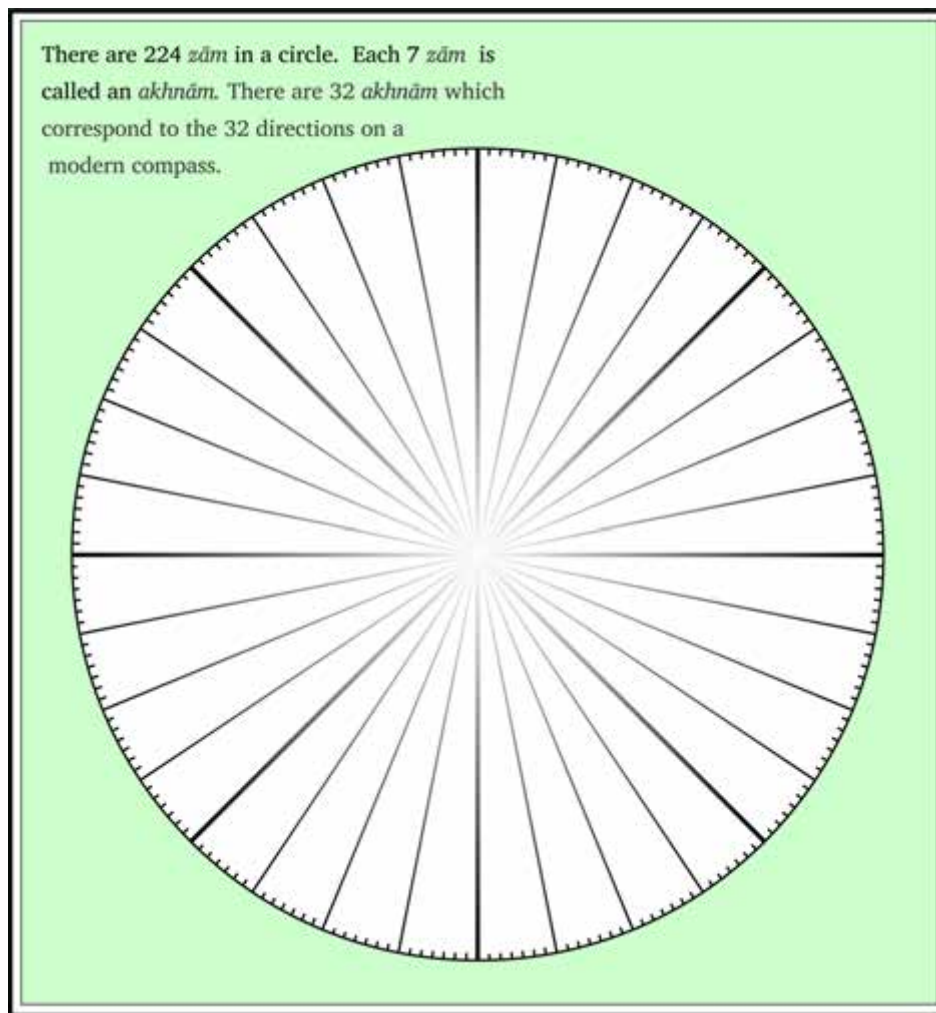
98 Journal of the Asiatic Society of Bengal, Volume 7, *Extracts from Mohit, a Turkish work on navigation in the Indian seas*. Translated and communicated by Joseph Von Hammer, Baron Purgstall, Aulic Counsellor and Prof. Orient. Lang. at Vienna, Translation of the Mohit, 1838, Page 770

99 *ishārāt* are local guides and *majra* are celestial guides, see page 138

height of the Pole Star from the horizon. The Pole Star raises or drops in the night sky as one moves north or south. Each finger was called an *işba'*. The *işba'* was further divided into 8 *zām*. Thus distances were often measured in *zāms*.¹⁰⁰

To standardize the *işba'* measurement Arabs considered the bright star al-‘Aiyūq (Capella) to be 4 *işba'* (fingers) or one *dhubbān* away from the nearby star called *Dhubbān* (β-Aurigae).

Over the years I have tried various experiments measuring *zāms* by hand and I’ve discovered that this seems to work for the average human, no matter how tall nor how short. When holding the hand at arm’s length, it is possible to measure the height of the North Star by simply placing one hand over the other, and then deciding where on the final finger the Pole Star was located, thus measuring the *işba'* (number of fingers) and the *zāms* (1/8th of a finger.) If a person had short hands, or very thick fingers, they could always check the width of their finger by comparing it to the width between Capella and β-Aurigae and adjust accordingly.



Above: A map of the Red Sea measured in *işba'*

100 Facey, 1991, page 99



As one moved north, the Pole Star would rise in the night sky, and thus more fingers were needed to measure. On the reverse page is a map of the Red Sea, with *işba'* measurements. It is easy to see that the Arabs could calculate their distance north or south simply by measuring the height of the North Star.

Some basic tools

A more accurate but still simple instrument was known as a *kamāl*. This was a small parallelogram made of horn or wood measuring about one by two inches, with a string inserted in the center. On the string were nine knots at measured intervals. The end of the string was held in the teeth. The lower edge of the horn was placed on the horizon, while the horn was moved along the string until the upper edge touched the required star. The knot at which the horn covered the exact distance signified a certain number of *işba'* or altitude of the star. The altitude of the Pole Star could then be deduced. If the horizon was difficult to determine, the Arabs would simply hold the *kamāl* so that the bottom was level to their eyes.¹⁰¹



An alternative way of using a *kamāl* was to move the knots through the teeth until the piece of horn or wood covered the required star altitude. Vasco da Gama's pilot from Malindi used a *kamāl*, and the Portuguese adopted it and eventually modified the spacing of the knots to measure degrees.¹⁰²

Sometimes Arab and Indian seamen added extra knots marking the latitudes of particular ports of call, or they simply used a *kamāl* on which all the knots indicated particular cities in the desert or ports of call on the ocean. This worked well on the flat desert plains, and allowed the merchants to accurately determine their latitude.¹⁰³

Larger pieces of wood were used when measuring higher stars. Traditionally there were three sizes of *kamāl*, 4, 8, and 12 *işba'*. Many aspects of using the *kamāl* were passed from sailing masters to novices and never written down, so

things like the exact use of lunar mansions in relation to individual star heights is still not fully understood.

Right: a quadrant from the 8th century (named because it is 1/4 of a full circle.)

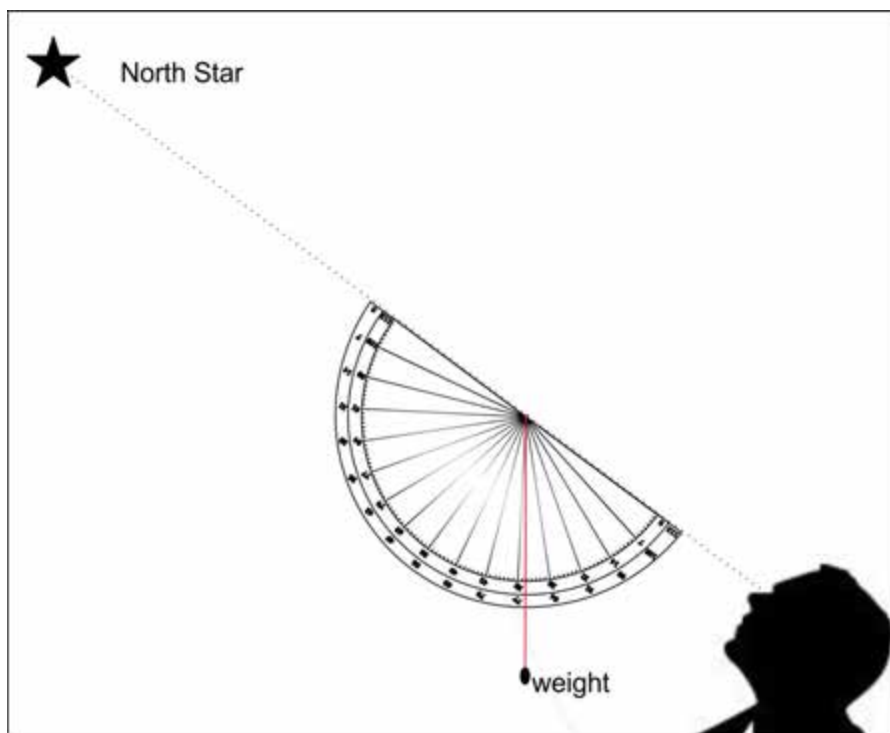
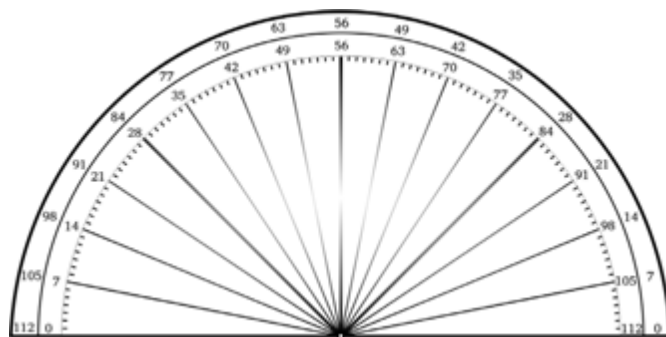


101 See *Stellar navigation by the Arabs* by Hasan Salih Shibab in *The Principles of Arab Navigation*, by Constable and Facy, pg 27

102 Parkin, David and Barnes, Ruth, *Ships and the Development of Maritime Technology on the Indian Ocean*, page 219

103 See: <http://www.dielette.fr/2014/09/06/kamal-connaissiez/> for more on the *kamāl*.

Right: Another method of calculating the star height was to use a simple protractor, based on a 224 degree circle, or 112 degree protractor. This was half of a full Arab Rose Compass.



A weight was attached to a string and suspended from the center point. The user simply had to point the flat edge of the protractor to the star, and the string would fall onto the marker of *işba'* or *zām*.

While these tool were useful in measuring the height of the north star, or any other star in the sky, measuring distance east and west was much more work.

The origins of western longitude

The western world thinks in terms of latitude and longitude. For us the 'prime meridian' or 0° longitude (along with the opposite meridian at 180° longitude) forms a great circle that divides the Earth into the Eastern and Western Hemispheres. In western thought this line runs through Greenwich, England, the site of the Royal Observatory, which is where the English people happened to be situated when they came up with this concept.

The English, however, were thinking in terms of sea travel, and they used time as their constant measurement. The Earth spins west to east at a very even pace, moving 15° each hour. Using the sun as a marker and a clock to give a constant measure, they could use the earth's rotation to calculate their position in relation to their starting point at 0° . The English set their chronometers to noon when the sun was at its highest point. Later, when they were at 3:00 PM, it meant that three hours ago the sun was overhead at 0° longitude. In those three hours, the sun moved 15° each hour for a total of 45° , so they were at 45° west longitude.

This worked well after the clock had been invented. But without the clock, the western world struggled to measure longitude. Accurate clocks only began to appear in the 16th century. It was not until 1760 that an Englishman named John Harrison invented an exact chronometer, making possible the measurement of longitude at sea. So how did the Arabs do it long before clocks and latitude and longitude were developed?

Distance, not time

The Arab secret was to use distance, not time when measuring longitude. Using the North Star, they could accurately determine if they were traveling north or south and how far they had traveled. However, since they could not measure time accurately, they turned to distance. In order to do this, they used nothing more complicated than their own bodies. If *işba'* (fingers) could be used to determine the height of the North Star, then distance could be used to determine how far one must travel directly north to raise the North Pole one *zām* ($\frac{1}{8}$ of an *işba'* or finger width). This distance was measured using the rhythm or beat (*ḍarba*) of one walking, which was measured in *taf'īla*. (feet or meters of verse).¹⁰⁴

This method requires someone to count the number of steps as they traveled from their source. By using the number of steps and the Arab compass they could accurately determine how far they had traveled east or west. Now, contrary to popular opinion, the Arab merchants of antiquity did not usually ride camels when traveling in the desert. Camel drivers walked and the camels carried heavy loads. Thus, distance in the desert was measured by the steps of an average human being. Pliny the Elder, a Roman historian, is probably the earliest record we have that observes that the Arabs measured with steps. The Arabs told Pliny that the trip from Timna, the capital of Qataban in Yemen, to Gaza on the Mediterranean Sea was 2,437,500 steps, or 62 days by camel.¹⁰⁵

This is very close as the distance is around 2,500 kilometers. Since there are around 1000 steps in a kilometer, there were around 2.5 million steps between Yemen and Gaza. In order to travel this distance in 62 days, the camel caravans would have had to travel around 40,000 steps, or 40 kilometers per day. This meant that the camel caravan moved around 40 kilometers or 24 miles in 12 hours, or 2 miles an hour. Pliny found it surprising that the Arab merchants knew the exact number of steps. However, when calculating latitude and longitude, this measurement became extremely important, as it was the primary accurate measurement they could use without accurate timekeeping.

The problem that you and I would have in doing this kind of measurement is not mixing up our numbers while walking. Many times my sons and I would try counting our steps as we walked and thus measure the distance we had traveled. The first several thousand steps usually went well, but after that keeping track of our counting became a problem.

The importance of poetry

The Arabs developed a fascinating way of measuring their steps. Rather than count, they would recite poetry. Each poem had rhythm of a known length. By walking in rhythm and chanting the poem out loud,

104 Moreh, 1976, page 208

105 Pliny 12, Chap. 13

the Arabs could enjoy the trip and know the exact distance they had traveled down to the exact number of steps without counting. Thus long poems and poetry became extremely important to the Arabs in pre-Islamic times. People who could create and memorize long poems were highly valued.¹⁰⁶

Albert Hourani, one of the great modern Arab scholars, has said that his people are more conscious of their language and the place of poetry than any other people in the world.¹⁰⁷ This consciousness was obsessive. Language was everything to the Arab. It was a divine expression and stemmed from the pre-Islamic era where Al-Kutbi was the god of writing, and those who could create and write epic poems were highly esteemed.

Today, Qur'anic Arabic is considered by many Muslims to be the pure language that God speaks, and those who speak it well are more honored than those who do not. Language in the form of local dialects also separates those who are near and far (blood lines). It separates the educated from the uneducated. Arabic is an art form, and for centuries was the near sole medium of artistic expression in the Arabian deserts. Every Arab tribe had its poets and their unwritten words "flew across the desert faster than arrows." As Hourani observes, poetry was not meant to be written; it was designed to be memorized and recited. In the midst of outward strife and disintegration, these poems provided a unifying principle. Poetry gave expression and contained the idea of Arabian virtue. Based on the tribal community of blood lines and insisting that only ties of blood were sacred, poetry became an invisible bond between diverse clans, and formed the basis of a larger sentiment.

It was poetry, the ultimate Arab art form, which bound Arabs together as a people rather than a collection of warring tribes.

When it became apparent that a young person was gifted as a poet, neighboring clans would gather together to wish the family joy. There were feasts and music. Men and boys congratulated one another, for a poet was a defense to the honor of the entire tribe and "a weapon to ward off insult from their good name, and a means of perpetuating their glorious deeds and of establishing their fame forever."¹⁰⁸

It is interesting to note that traditionally Arabs only wish one another joy on three occasions: The birth of a boy, the coming to light of a poet, and the foaling of a noble mare.¹⁰⁹

The Arabic language is so powerful that Arabs will listen intently to someone speaking well, whether he speaks the truth or not. "I lift my voice to utter lies absurd, for when I speak the truth my hushed tones scarce are heard."¹¹⁰

Anyone wanting to understand Arab culture must be a student of Arab poetry. Arab poetry is full of glory. The poets glorified themselves, their brilliant feats, their courage and resolution, and their contempt for

106 Baerlein, Henry, *The Singing Caravan, Some echoes of Arabian Poetry*, London, 1910

107 Hourani, 1991, pages 12-14

108 Nicholson, 1993, page 71

109 McDonald, 1978

110 Abū 'Alā' Al-Ma'arī, Syrian poet, 973-1057 CE, Nicholson, 1993, page 319

death. The Arab hero is defiant and boastful, and when there is little to lose he will ride off unashamed, but he will fight to the death for his women.

An example of the ideal Arab hero is Shanfara of Azd. He was an outlaw, swift runner, and excellent poet. As a child, Shanfara was captured by the Bani Salmān tribe and brought up among them. He did not learn of his origin until he was a grown man. He then vowed vengeance against his captors and returned to his own tribe. He swore that he would slay a hundred men of the Beni Salmān, and he had slain ninety-eight when he was caught in an enemy ambush. In the struggle, one of his hands was hewn off by a sword stroke, but taking the weapon in the other, he flung it in the face of a Salmān tribesman and killed him, making his score ninety-nine. He was then overpowered and slain. Much later as his skull lay bleaching on the ground, a man of his enemies passed by and kicked it. A splinter of bone entered his foot; the wound festered and he died, thus completing Shanfara's hundred. All of this is told in wonderful poetic language, skillfully blending the use of poetry with the honor of the hero.¹¹¹

Anyone wishing to be a student of Arab history must realize the importance of poetry, not only in its message, but also in its form, rhythm and measure. It is used today to give rhythm to all sorts of labor, from building construction to baking bread. To the Arab merchants of long ago, poetry was the backbone of their secret skill of navigation. It not only helped them pass the long hours as they walked through the desert; it provided them with a tool to accurately measure the distance they traveled.

Arabic Poetry

Most of our knowledge of early Arabic poetry comes from Abū 'Abd al Raḥmān Khalīl ibn Aḥmad al Farāhīdī (More commonly known as Al Farāhīdī) (718 – 791 CE). Al Farāhīdī, as he is commonly known, wrote *Kitāb al-'Ayn*, an early dictionary of the Arabic language (in 8 volumes). He also collected samples of fifteen scales of poetry and compared them with the Qur'ān.

Because the day of desert caravans and navigation by the stars had long passed, Al Farāhīdī called the meter of the poem the *wazn* (weight or scale) rather than the earlier term of *taf 'īla*. He also called each line the *bayt* or house (verse), which could be divided into sections called *shaṭr* (halves) or hemistich (a half-line).¹¹²

Al Farāhīdī classified poetry into fifteen types based on their *wazn*. The most common of these are: Ṭawīl, Kāmil, Wāfir, Rajaz, Hazaj, Basīṭ, Khafīf, and Ṣāri'. These more modern forms overshadowed the importance of the ancient beat (ḍarba measured in *taf 'īla*) which was so important to the early navigators.¹¹³

Unfortunately for us, Al Farāhīdī's treatise on poetry came 180 years after the revelation of the Qur'ān, and by this time poetry was an art form and no longer a part of navigation. In Farāhīdī's time, armies, not camel caravans, marched across the world from city to city along well marked roads, many of them designed to move Roman armies quickly to the edge of the empire. By this time, the armies of Rome were

111 Aḥmad, 2004, pg 16, *Islamic Education*

112 Al Faruqi, 1975

113 Moreh, 1976, pg 208

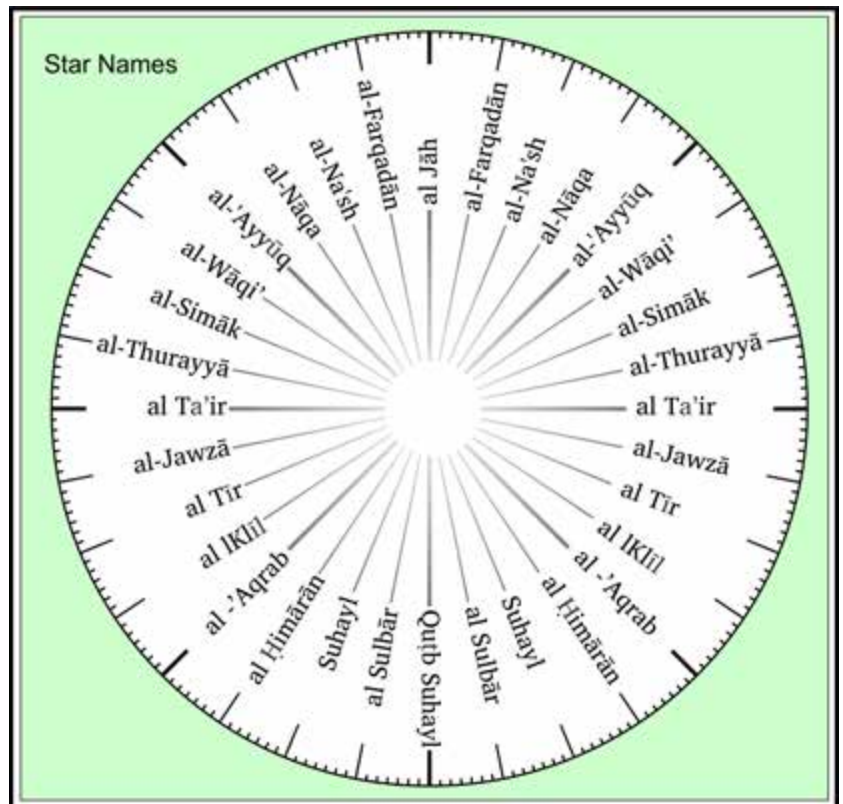
retreating from the Roman frontier to deep within their empire, and the enemy armies now used these same roads.

The use of poetry and song for navigation is not unique to the Middle East. In 1987 Bruce Chatwin published the book *Songlines* which described the Australian aboriginal method of using songs to track routes in the desert. “The Aborigines’ highly evolved method of mapping creates a “labyrinth of invisible pathways which meander all over Australia and are known to Europeans as ‘Dreaming-tracks’ or ‘Songlines’; to Aborigines as the ‘Footprints of the Ancestors’ or the ‘Way of the law’.”¹⁴

So once the caravan masters knew their north-south position (measured in iṣbaʿ) and the distance they had traveled (measured in tafīla), they could turn to another tool, the Arab Compass, to determine the angle they were traveling on. Combined with knowledge of the terrain, these Arabs could navigate anywhere in the northern hemisphere. Is it any wonder that once Arabs had travelled overland to China, a few years later Arab boats set out straight across the Indian Ocean for the other side? Is it any wonder that years later when Marco Polo visited China the harbors were jammed full of Arab boats? Is it any wonder that a mosque was built in Canton China (modern Guangzhou) while Muḥammad was still alive, with its Qibla pointing directly at Petra? And lastly, is it any wonder that algebra and geometry were significantly developed in the Muslim world?

The Arab Compass

Another tool the Arabs used was the Arab Compass. For the Arab navigator, the horizon was divided into 32 akhnām or directions, rather than just N, S, E, W. Thus young Arab navigators had to memorize the names of the 32 locations. Today each of the 32 akhnām are $11\frac{1}{4}$ degrees, making 360 in total by today's measurement. As some early Arabs used base 7 in their mathematics, the Arab compass is naturally divided into 224 degrees, with seven degrees separating the main 32 points.



Right The 32 points of the compass and the star names associated with them.

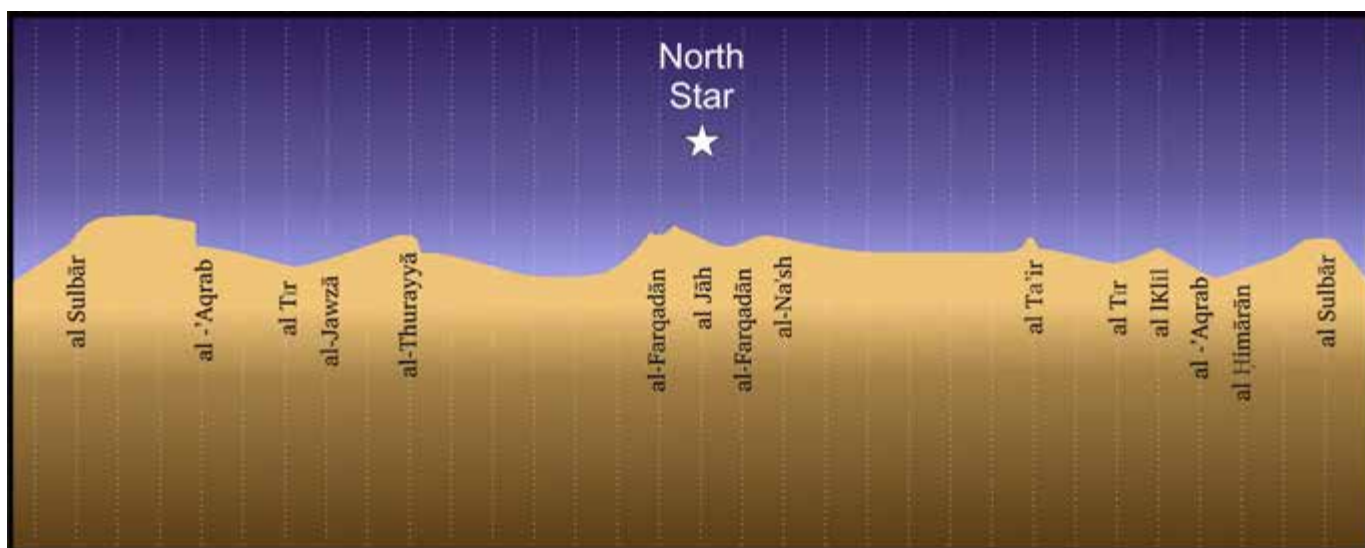
114 Chatwin, Bruce, *The Songlines*, (New York: Viking, 1987), Also check out O'Rourke, *Walking and Mapping: Artists as Cartographers* and Dittrich, Sara, *Wayfinding: Walking in Nomadic and Urban Culture*, 2013

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------|-----------|--------|------------|------------|----------|--------|----------|----------|-------------|----------|----------|-----------|---------|----------|-------------|--------------------|-------------|----------|---------|-----------|----------|----------|-------------|----------|----------|--------|----------|------------|------------|--------|-----------|------------|--|
| | | | | | | | | | | | | | | | | North Star ★ | | | | | | | | | | | | | | | | | |
| South | S by W | SSW | SW by S | SW | SW by W | WSW | W by S | West | W by N | WNW | NW by W | NW | NW by N | NNW | N by W | North | N by E | NNE | NE by N | NE | NE by E | ENE | E by N | East | E by S | ESE | SE by E | SE | SE by S | SSE | S by E | South | |
| Qub Suhayl | al Sulbār | Suhayl | al Himārān | al -'Aqrab | al IKlīl | al Tīr | al-Jawzā | al Ta'ir | al-Thurayyā | al-Simāk | al-Wāqī' | al-'Ayyūq | al-Nāqa | al-Na'ṣh | al-Farqadān | al Jāh | al-Farqadān | al-Na'ṣh | al-Nāqa | al-'Ayyūq | al-Wāqī' | al-Simāk | al-Thurayyā | al Ta'ir | al-Jawzā | al Tīr | al IKlīl | al -'Aqrab | al Himārān | Suhayl | al Sulbār | Qub Suhayl | |

Above: The 32 star names on the horizon, and their corresponding directions

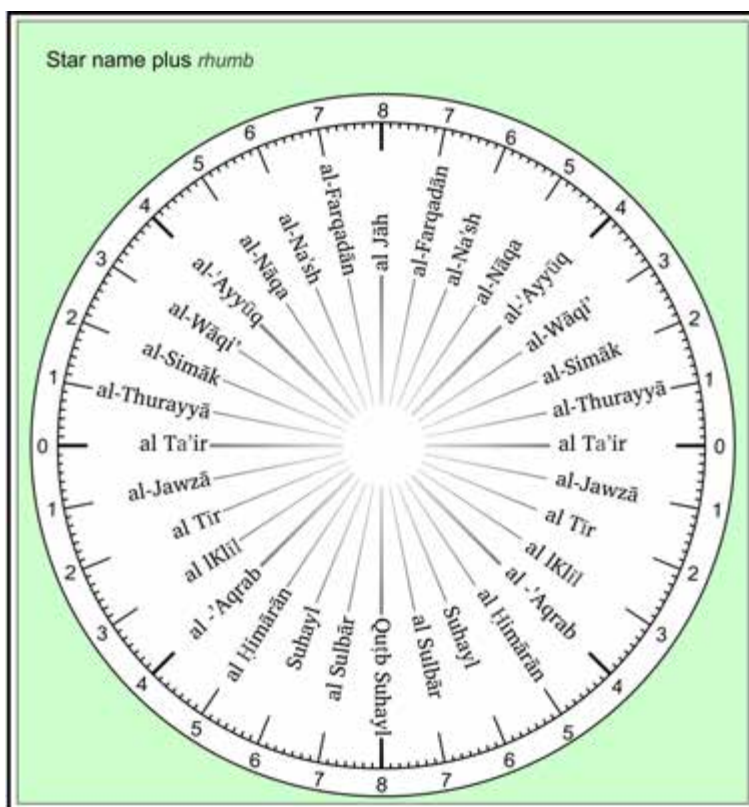
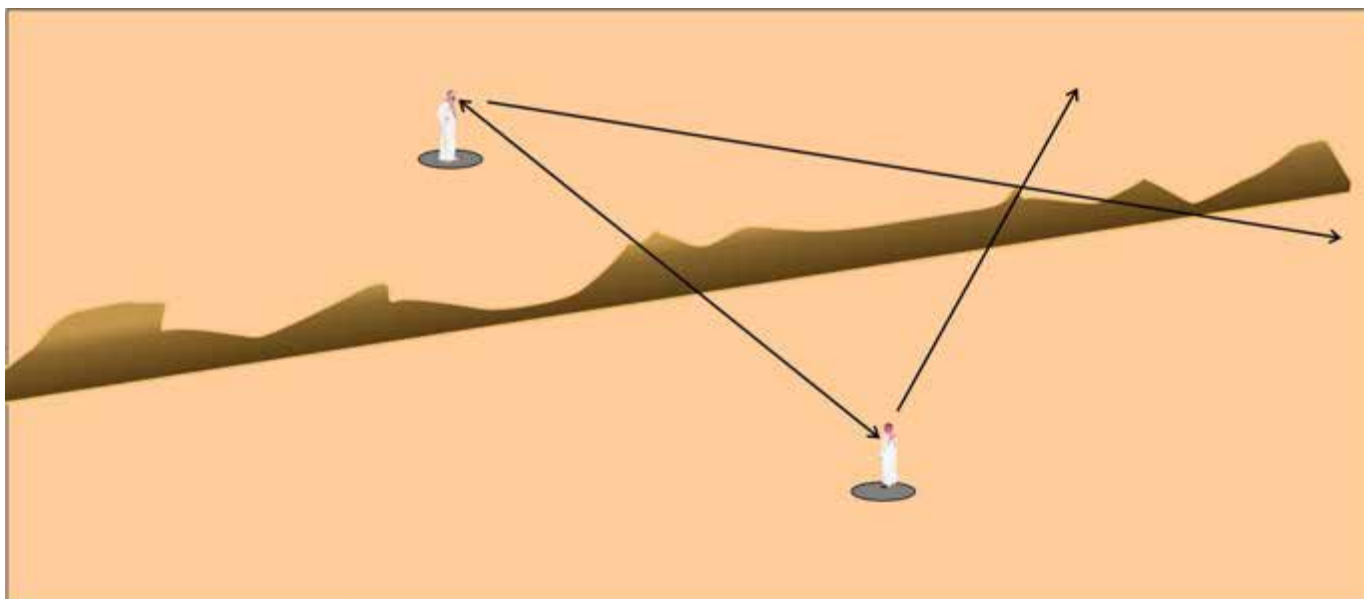
Before any math was done, the Arab navigator would know how far north or south he was by measuring the height of the North Star each day in zāms. He could tell in what direction he was traveling by using the 32 points on the horizon and comparing his direction to the stars. Calculations were usually made in the evening when the stars rose on the right and again in the morning when stars set on the left. Other measurements were made during the night hours when the stars reached their zenith. Often directions were given by using star names. This makes reading confusing to us as the Arabs would not mention 77 degrees, nor East of North, but would say something like: travel until the mountain is at al Nāqa.

Star names were very useful. Merchants could determine what lay over the horizon by knowing the ishārāt (landmarks) from every major stopping place and trading centre. If a person stood in point A and looked south, they could identify the location of landmarks such as distant mountains and ridges. These would be associated with the star which rose or set near that spot on the horizon.



When standing miles away on the other side they could also note the same landmarks as identified with opposing star names as seen from that location. If a ridge or valley had the same opposing star name, (see compass on the next page) or a small number of degrees to the right or the left of an opposing star name,

then they knew that direction was the shortest route between the two. While not 100% accurate they could be certain within a couple of degrees. In the diagram below, the men know they are facing the same direction, as the man in the north would identify al Ḥimārān and the man in the south would identify the opposing al Nāqa. The other mountain peaks would not have corresponding names.



In addition to the star names on the horizon, the Arab compass had other uses. If one traveled 168 km directly north, the pole star would raise one zām. If a person traveled straight east or west the polestar would not raise or fall at all. If one traveled towards any one of the other points, the pole star would raise or fall at a set rate. In the illustration to the left the outer numbers indicate how far you would have to travel to raise or lower the Pole Star 8 zāms or one iṣba'. Note: Before 1000 CE these star names were a good guide, but today they are off by a bit as the whole star set has shifted.¹¹⁵

Note: The numbers illustrated above are taken from Sulaimān al-Mahri's Minhaj where he also gives the figures used by the Gujaratis and Cholas of India. Tibbetts pg 302

Note: This compass is addressed on pages 18, 20, 38, & 42

¹¹⁵ Constable 2013



Above: *The Istanbul Observatory in 1577 (Şehinşenâme, Book of the King of Kings)*

Al-Jāh and bashī values

The measurement of the height of the Pole Star was the “basic measurement” used by ancient navigators. This star was known as Al Jāh but it was not completely stationary in the sky. It would move around the actual North Pole at a distance of three *işba*’ so that the lowest and highest points of its course were six *işba*’ apart. As it was important to have a standard measure, this was taken when Al Jāh was at its lowest point. This was measured at the time the 12th lunar mansion,¹¹⁶ al-Şarfa (the star β Leonis) was in its zenith. If the North Star was measured at a different time, an experienced navigator would know how to add or subtract the difference from its lowest point. This was called the *bashī*. Those who were inexperienced in getting an accurate North Star reading would call it a proxy height.

116 See page 155 for lunar mansions

Knowledge of the bashi values for all the lunar mansions was regarded as essential for a master navigator. In essence it was the measurement of how far the Pole Star was above its measurement at its lower culmination and thus it became its basic measurement.¹¹⁷

Lunar Time

Understanding time was helpful in doing east-west calculations. During the day the sun provided an accurate measuring tool but at night they needed to rely on the position of the stars as they crossed the sky, or by the shadow that moved across the moon.

The moon was very important for the ancient Arabs, both in telling what day it was during the lunar month and also by telling time.

When the moon is full, it can be used to tell time exactly the same way the sun is used during the day. Near the equator, when the sun is coming up over the eastern horizon, it is sunrise, or 6AM. It then takes the sun 6 hours to reach its zenith, at 12 noon. When the sun is halfway between its zenith and the western horizon, the time is 3PM. And the sun sets in the west at 6PM. Now the sun and moon rise and set at different times depending on latitude, the season, the time zone, and whether or not it is daylight savings. For example, the moon is higher, has a longer arc, and is in the sky longer during winter. So, to be accurate, time estimates change according to situations, which may mean, for example, that there will be more or fewer hours from midnight to noon.

In order to tell time by the moon the Arabs first “read the moon” and then they looked at its position in the sky. The most common difficulty we have is that we want to use the position of the moon as a clock because that is what is done with the sun.

With the moon however, we need to notice the leading (right) edge of the moon, as it represents sundown or the beginning of night. The left edge represents sunrise, the end of night. Everything in between is divided into the different hours of the night.

Now let’s look at the phases of the moon. There is a line on the moon where the light and dark areas meet. If the moon is new, it is totally dark, and the moon cannot be used to tell time.

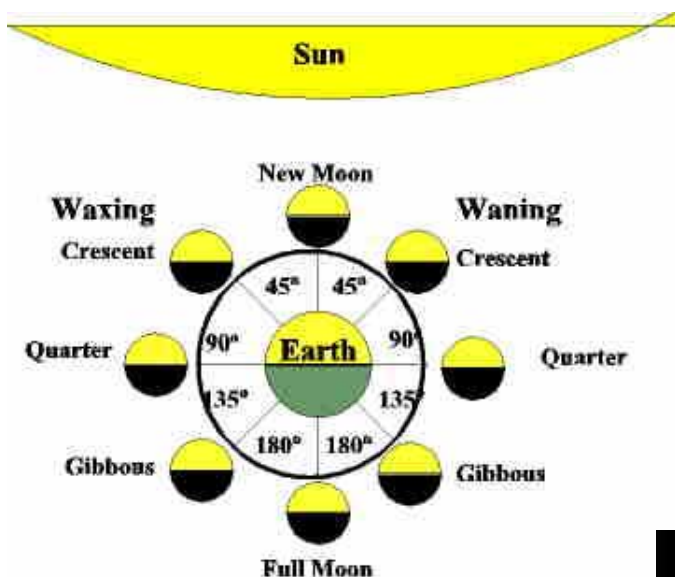


Left: 29 modern phases of the moon.

The Arabs had 9 phases of the moon which are listed below.

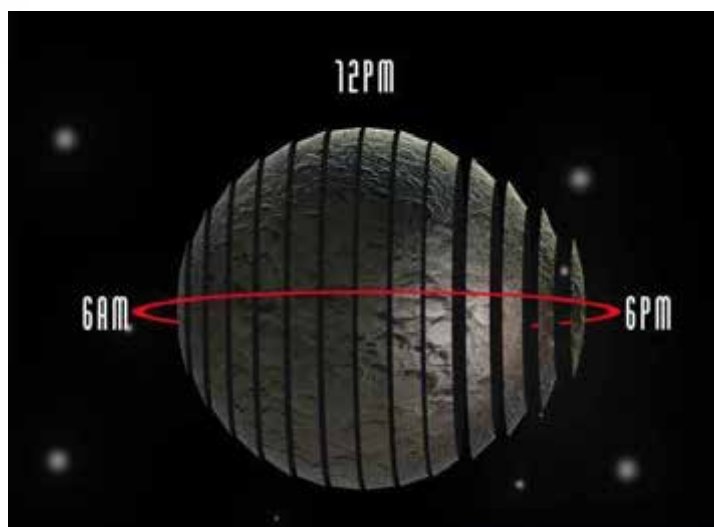
1. Crescent (هلال) starts the month.
2. Waxing crescent moon (الصباح هلال)
3. First quarter moon (أول ربع القمر)
4. Humpback growing: (الصباح محدب القمر) also called a Gibbous growing.
5. Bader (بدر كامل) Full moon
6. Humpback declining (التضائل محدب القمر) also called Gibbous declining
7. Last quarter moon (الربع الأخير للقمر)
8. Waning Crescent Moon (هلال القمر التضائل)
9. Dark Moon (القمر المظلم) ¹¹⁵

118



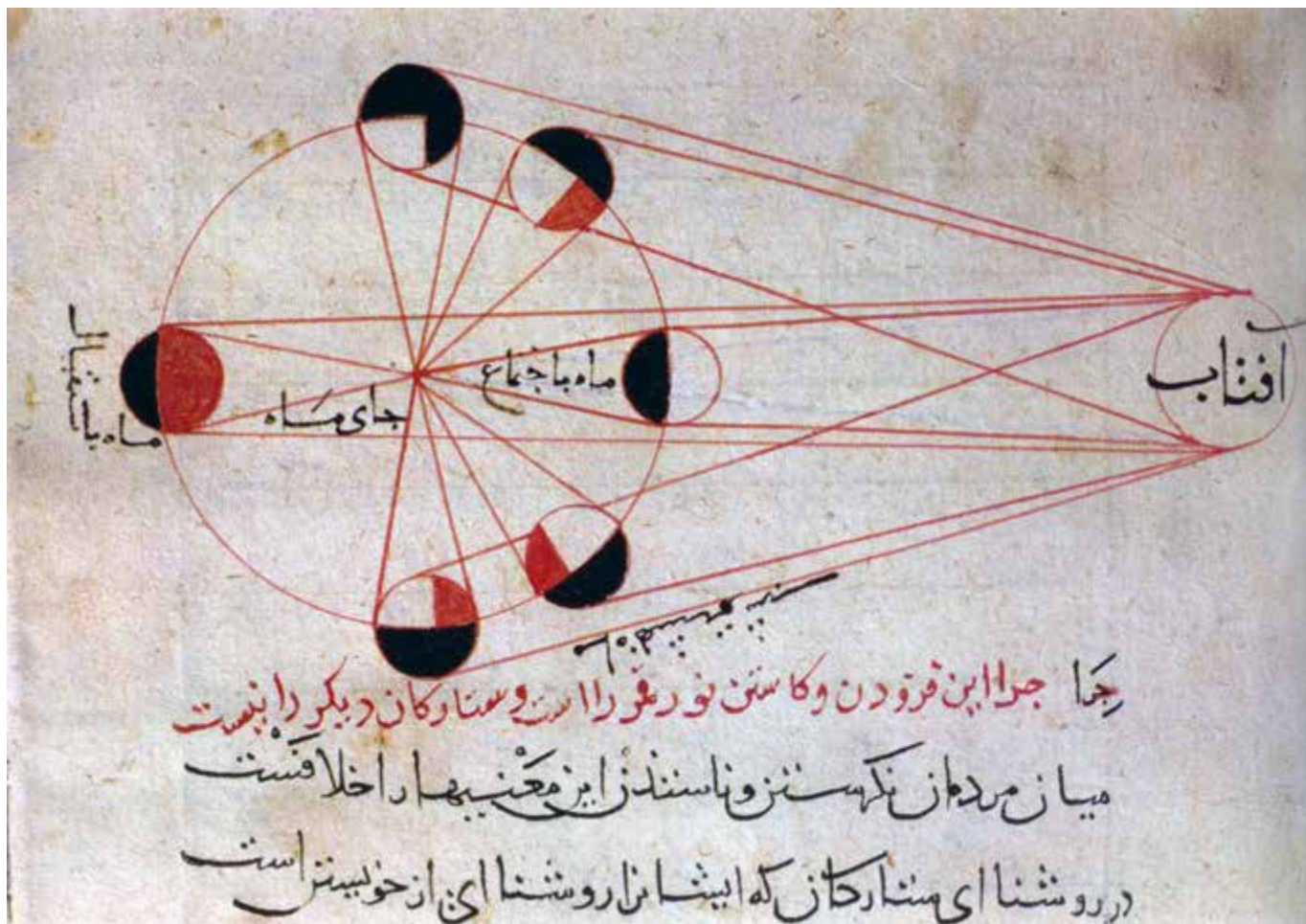
Note: Other terms were also used for waxing and waning: *manāzil al ijthimā'iyya* for waxing, and *manāzil al istiqbāliyya* for waning.

Lunar time cannot be told throughout the entire night. As the moon moves through its phases, the line that separates the light from the dark side of the moon moves from the right towards the left. Using this line, one can look at the face of the moon to get an idea of the time. For instance if there is a young moon, or a small crescent, then you can calculate the time for about 30 minutes after 6PM by looking at the right



118 Seidelmann, P. Kenneth (2005). "Phases of the Moon". *Explanatory Supplement to the Astronomical Almanac*. University Science Books. p. 478

edge. That means the moon's light will disappear at about 6:30PM and the moon will set in the west. As the moon goes through its phases the line between light and dark moves across the moon, giving the observer an idea of the time. There are multiple websites dedicated to explaining this. The illustration from the previous page is from Tell-Time-Without-a-Clock¹¹⁹



Above: Al-Biruni on different phases of the moon, from *Kitab al-Tafhim*

Lunar Mansions

While the sun and moon functioned as a clock for the ancients, the moon was also a calendar. The Arabs used a lunar calendar, as did much of the non-Christian world. Therefore the ancient Arabs were always aware of the moon, for a new moon indicated a new month had arrived. So each lunar month had a name, and observations of the moon were part of everyday conversations.

Lunar mansions (manazil al-qamar) are segments of the ecliptic path through which the moon moves in its orbit around the earth. In general, though not always, phases of the moon were divided into 27 or 28 segments relative to fixed stars, one for each day of the lunar month, (which is 27.3 days long). Thus the position of the moon is charted throughout the year with respect to those fixed segments. Since the position of the moon at any given stage will vary according to the position of the earth in its own orbit, the mansions of the moon are an effective system for keeping track of the passage of time over a complete solar cycle.

¹¹⁹ <http://www.wikihow.com/Tell-Time-Without-a-Clock>

| Mansion | Period | Constellation [<i>al-burūj</i> البروج] | Lunar Mansion [<i>Manazil al-Qamar</i> منازل القمر] | Position [<i>ʿadād</i> أعداد] |
|---------|--------------|---|--|-----------------------------------|
| 1st | 5 April | <i>Burju 'l-Hamal</i> برج الحمل | <i>'Ash-Sharātayn</i> / <i>'An-Nath</i> الشترطين \ النطح | 1. ١ ألف |
| 2nd | 18 April | <i>Burju 'l-Hamal</i> برج الحمل | <i>'Al-Butayn</i> البطين | 2. ٢ باء |
| 3rd | 1 May | <i>Burju 'l-Hamal</i> برج الحمل | <i>'Ath-Thurayyā</i> الثريا | 3. ٣ جيم |
| 4th | 14 May | <i>Burju 'th-Thūr</i> برج الثور | <i>'Ad-Dabarān</i> الدبران | 4. ٤ دال |
| 5th | 27 May | <i>Burju 'th-Thūr</i> برج الثور | <i>'Al-Haṣ'ah</i> الحففة | 5. ٥ هاء |
| 6th | 9 June | <i>Burju 'l-Jawzā'</i> برج الجوزاء | <i>'Al-Han'ah</i> الحنفة | 6. ٦ واو |
| 7th | 22 June | <i>Burju 'l-Jawzā'</i> برج الجوزاء | <i>'Adh-Dhitrā'</i> الذراع | 7. ٧ زاي |
| 8th | 5 July | <i>Burju 's-Sartān</i> برج السرطان | <i>'An-Nathrah</i> النثرة | 8. ٨ حاء |
| 9th | 18 July | <i>Burju 's-Sartān</i> برج السرطان | <i>'At-Tarf</i> / <i>'At-Tarfah</i> الطرف \ الطرف | 9. ٩ طاء |
| 10th | 31 July | <i>Burju 's-Sartān</i> برج السرطان | <i>'Al-Jabhah</i> الجبهة | 10. ١٠ ألف مقصورة |
| 11th | 14 Aug | <i>Burju 'l-'Asad</i> برج الأسد | <i>'Az-Zubrah</i> / <i>'Al-Kharātān</i> الزيرة \ الخراتان | 11. ١١ كاف |
| 12th | 27 Aug | <i>Burju 'l-'Asad</i> برج الأسد | <i>'As-Sarfah</i> الصرفة | 12. ١٢ لام |
| 13th | 9 September | <i>Burju 's-Sanabilah</i> / <i>Burju 's-Sunbulah</i> برج الشبله \ برج الشبله | <i>'Al-'Awwā'</i> الواء | 13. ١٣ ميم |
| 14th | 22 September | <i>Burju 's-Sanabilah</i> / <i>Burju 's-Sunbulah</i> برج الشبله \ برج الشبله | <i>'As-Simāk</i> / <i>'As-Simāku</i> 'l-A'zīl السمك \ السمك الأعزل | 14. ١٤ نون |
| 15th | 5 October | <i>Burju 'l-Mizān</i> برج الميزان | <i>'Al-Ghafr</i> الغفر | 15. ١٥ سين |
| 16th | 18 October | <i>Burju 'l-Mizān</i> برج الميزان | <i>'Az-Zubān</i> الزبان | 16. ١٦ عين |
| 17th | 31 October | <i>Burju 'l-Mizān</i> برج الميزان | <i>'Al-Iklīl</i> / <i>'Al-Iklīlu</i> 'l-Jabhah الأكليل \ الأكليل الجبهة | 17. ١٧ فاء |

Afsir Ibn Kathīr tells us the following: “The Arabs also have a name for each set of three nights in a month, according to the phases of the moon. They call the first three nights “Ghurar”; the next three nights “Nufal”; the next three nights “Tusa” (nine) -- because the last of them is the ninth. The next three nights are called “Ushar” (ten) -- because the first of them is the tenth. The next three nights are called “Al-Biḍ” (white) - because of the light of the moon which shines brightly throughout these three nights. The next three nights are called “Dura,” the plural of Dar`a’, because on the first of them the night is dark from the moon rising late. Dar`a’ refers to the black sheep, i.e., the one whose head is black; the next three nights “Zulam,” then “Hanadis,” then “Da’adi,” then “Mihaq,” because of the absence of moonlight at the beginning of the month.”¹²⁰

120 Tafsir Ibn Kathīr, 10 volumes, *A compilation of the Abridged Tafsir Ibn Kathīr Volumes 1 - 10*, In The English Language with Arabic Verses, page 4206

| | | | | |
|------|-------------|--|---|---------------|
| 18th | 13 November | <i>Burju 'l-'Aqrab</i> بُرْجُ الْقَرَب | <i>'Al-Qalb</i> الْقَلْب | 18, ١٨ صاد |
| 19th | 26 November | <i>Burju 'l-'Aqrab</i> بُرْجُ الْقَرَب | <i>'Ash-Shawlah</i> الشَّوْهَة | 19, ١٩ قاف |
| 20th | 9 December | <i>Burju 'l-Qaws</i> بُرْجُ الْقَوْس | <i>'An-Na'am</i> النَّاعِم | 20, ٢٠ راء |
| 21th | 22 December | <i>Burju 'l-Qaws</i> بُرْجُ الْقَوْس | <i>'Al-Baldah</i> الْبَلْدَة | 21, ٢١ سين |
| 22th | 4 January | <i>Burju 'l-Jiddī' / Burju 'l-Jiddī</i> بُرْجُ الْجَدِّي \ بُرْجُ الْجَدِّي | <i>Sa'du 'dh-Dhābih / 'Adh-Dhābih</i> سَعْدُ الذَّابِح \ أَدْحُ الذَّابِح | 22, ٢٢ تاء |
| 23th | 17 January | <i>Burju 'l-Jiddī' / Burju 'l-Jiddī</i> بُرْجُ الْجَدِّي \ بُرْجُ الْجَدِّي | <i>Sa'du 'l-Bul'a / 'Al-Bula'</i> سَعْدُ الْبُلْع \ أَلْبُلْع | 23, ٢٣ تاء |
| 24th | 30 January | <i>Burju 'l-Jiddī' / Burju 'l-Jiddī</i> بُرْجُ الْجَدِّي \ بُرْجُ الْجَدِّي | <i>Sa'du 's-Su'ud / 'As-Su'ud</i> سَعْدُ السُّعُود \ أَسْـسُـعُود | 24, ٢٤ خاء |
| 25th | 12 February | <i>Burju 'd-Dalū</i> بُرْجُ الدَّلُو | <i>Sa'du 'l-'Akhbiyyah / 'Al-'Akhbiyyah</i> سَعْدُ الْأَخْبِيَّة \ الْأَخْبِيَّة | 25, ٢٥ ذال |
| 26th | 25 February | <i>Burju 'd-Dalū</i> بُرْجُ الدَّلُو | <i>Farghu 'd-Dalū 'l-Muqdim / 'Al-Muqdim</i> فَرْغُ الدَّلُو الْمُقْدِم \ الْمُقْدِم | 26, ٢٦ ضاد |
| 27th | 10 March | <i>Burju 'l-Hūt</i> بُرْجُ الْحُوت | <i>Farghu 'd-Dalū 'l-Mu'khar / 'Al-Mu'khar</i> فَرْغُ الدَّلُو الْمُؤَخَّر \ الْمُؤَخَّر | 27, ٢٧ ظاء |
| 28th | 23 March | <i>Burju 'l-Hūt</i> بُرْجُ الْحُوت | <i>'Ar-Rashā' / Butnu 'l-Hūt</i> الرَّشَاء \ بَطْنُ الْحُوت | 28, ٢٨ عين |

Source: S. Weinstock, 'Lunar Mansions and Early Calendars', *Journal of Hellenic Studies*, LXIX (1949); cf. also CCAG IX.1 138ff; Philip Yampolsky, 'The origin of the Twenty-eight Lunar Mansions', *Osiris*, IX (1950), pp.62-83; I.E. Svenberg, 'Lunaria et Zodiologia Latina', *Studia Graeca et Latina Gothoburgensia* (Goteburg, 1963). Also, Hassan, Izzat Al Azmana wa al Anwaa', Morocco: Awqāf and Islamic Affairs Printing Press, (2006).

In the same way, stars had 28 distinct mansions, so when the mansion reached the meridian, then the increase or decrease of a star's altitude enabled the navigator to track his progress across the latitudes. The chart above of Arabic lunar mansions, predates Islamic times.¹²¹

It is interesting that the alphabetical order follows the sequence of the original abjadī order of the Phoenician alphabet and is therefore similar to the order of the other Phoenician-derived alphabets.

¹²¹ A complete list of bashi values associated with each lunar mansion can be found on page 30 in the book: *The Principles of Arab Navigation*, (edited by Anthony R. Constable and William Facey, Arabian Publishing 2013) in the article *Stellar Navigation of the Arabs*, by Hasan Salih Shihāb.

Arab Calendar

The Muslim calendar is set from the date of the emigration to Mecca. In 638 CE (17 AH), Abu Musa Ashāri, one of the officials of the Caliph Umar in Baṣra, complained about the absence of any years on the correspondence he received from ‘Umar, making it difficult for him to determine which instructions were most recent. This report convinced ‘Umar that he needed to introduce an era for Muslims. After debating the issue with his counselors, he decided that the first year should include the date of Muḥammad’s arrival at Medina. ‘Uthman ibn ‘Affan then suggested that the months begin with Muḥarram, in line with the established custom of the Arabs at that time. The years of the Islamic calendar thus began with the month of Muḥarram in the year of Muḥammad’s arrival at the city of Medina, even though the actual emigration took place in Ṣafar and Rabi’.¹²² The earliest known dated inscription comes from the inscription of Zuhayr, (24 AH/CE 644–645).¹²³

Lunar Eclipses

Lunar eclipses played an important role in ancient religion. Priests and temple workers used eclipses to awe people and associate their religious activities with observable phenomena in the heavens, especially if they could predict it before hand.¹²⁴

It is reported that Christopher Columbus used his knowledge of lunar eclipses in Jamaica. Columbus wanted to be seen as god-like, so he stated that he would make the moon disappear during the night of February 29, 1504. The Jamaicans were refusing to feed the Europeans, but when Columbus “made the moon disappear” they begged him to return the moon to its previous form so Columbus “returned the moon.” The next day, the inhabitants gave Columbus and his crew the food they desired.¹²⁵

Starting as early as April 6, 647 BCE, a number of solar and lunar eclipses have been observed and recorded. Many of these can be found listed on the Internet. What is of primary interest are those lunar eclipses which can be seen from anywhere on the night-side of the Earth.

Lunar eclipses last for a few hours, while total solar eclipses last for a few minutes at specific places and are not seen all over the world. If we can establish a time when Arabs were both in China and in Arabia during a total lunar eclipse, then we can assume that when they conferred later they would have been able to calculate the distance from China to Arabia. On the next page is a table of Chinese and European sources that mention eclipses.¹²⁶

122 Watt, W. Montgomery. “Hidjra”. In P.J. Bearman; Th. Bianquis; C.E. Bosworth; E. van Donzel; W.P. Heinrichs. *Encyclopaedia of Islam Online*. Brill Academic Publishers.

123 Ghabban, ‘A ibn I. Naqsh Zuhayr: aqdam naqsh islami, mu’arrakh bi-sanat 24 AH/ 644–5 CE. (Arabic) *Arabia: Revue de Sabe’ologie* 1 (2003): 339–293

124 Littmann, Mark; Espenak, Fred; Willcox, Ken (2008). “Chapter 4: Eclipses in Mythology”. *Totality Eclipses of the Sun* (3rd ed.). New York: Oxford University Press.

125 Peterson, Ivars. “*The Eclipse That Saved Columbus*”. <https://www.sciencenews.org>. Science News. Retrieved 2 October 2014. Also, *Astronomie Populaire* 1879, p231 fig. 86

126 <http://hbar.phys.msu.su/gorm/atext/ginzele.htm>, last retrieval date: December 10, 2016

| Chinese Source | Referring to | European Date | European Source |
|---------------------------|--------------|---------------|--|
| Shiji or Shi Ji, ch. 123 | 100 BCE | 103, Jul. 19 | Obsequentis |
| Qian Han Shu, ch.96a | 100 BCE | 62, May 3 | Cicero, "De Divinatione" |
| Hou Han Shu, chs. 116,118 | 97 CE | 71, Mar. 20 | Plutarch, "The Face of the Moon", Pliny, "Natural History", Flavius Philostratus, Sextus Aurelius Victor |
| Wei Lue in Sanguo Zhi | 220-264 CE | 218, Oct. 7 | Dio Cassius |
| Jin Shu, ch. 97 | 265-419 CE | 292, May 4 | Consularia Constantinopolitana |
| Song Shu, ch. 97 | 420-478 CE | 346, Jun. 6 | Theophanes, "Chronographia" Cedrenus, Eusebius/Jerome, Mellicenses, Herimanni Aug., Sancti Trudberti, Ek Chron. |
| Liang Shu, ch. 54 | 502-556 CE | 538, Feb.15 | Bede, Chronicon Ethelwerdi, Annales S. Maximini Trevirensis, Henrici Huntinon An. Lundenses, An. Prioratus de Wigornia |

The usefulness of eclipses in navigation was not lost on the early Arabs. A total lunar eclipse was an event that happened at exactly the same time, all over the world. The difference however, is that while an eclipse might be observed at noon in Arabia, it was observed by Arab merchants in China at six in the evening. This time difference allowed the Arabs to calculate how far away major places were located on an east-west meridian.

The Chinese were famous for recording their history. For instance, throughout Chinese history there were 920 solar eclipses recorded, plus many lunar eclipses.¹²⁷ The dates that are of most interest to us are during the Han Empire, from 206 BCE to 220 CE, as this corresponds to the height of the Nabataean merchant empire. It was these merchants who discovered methods of taking their caravans across trackless deserts, and who also traveled to China on various occasions.¹²⁸ During this time period (about 400 years) the Annals of Han recorded 141 eclipses of the sun.¹²⁷ These can be researched on the Internet.¹²⁹

There is one incident that stands out. It happened during the reign of Emperor He of Han, in the Yongyuan period (89-105). The emperor sent out envoys to travel outside of China to the western districts. These envoys traveled as far as Rome, and returned to China with many items as well as skilled people and officials to visit the Chinese court.

As we mentioned before, in the appendices of his book *The Peoples of the West, from the Weilue*, by Yu Huan, in section B titled *The territories of Haixi, Haibei and Haidong*, John Hill tells us that the Chinese

127 Tsu, W., A Statistical Survey of Solar Eclipses in Chinese History, *The Journal of Popular Astronomy*, Vol 42 p136

128 See page 137

129 <http://www2.iath.virginia.edu:8080/exist/cocoon/xwomen/texts/hanshu/tpage/tocc/bilingual>

envoys who visited Arabia brought back with them to China learned men including “some musicians and some skilful jugglers who performed transformations, belched fire, changed the head of an ox to that of a horse, amputated limbs, and then replaced them. They also knew how to play with little balls and could keep as many as ten in the air at a time.”¹³⁰

What makes this interesting is that we can identify a period when we can confidently confirm that a group of Arabs were in China and that an exchange of information took place. Since the knowledge of navigation was commonly known among Nabataeans, they would understand the stars above them and the location of China in relation to the Middle East. Imagine the exciting discussions when they returned. So it is conceivable that there was a significant cross-pollination of ideas between the Arabs and the Chinese around 100 CE. Viewing eclipses would have been among the events they discussed and compared.

If the Arab navigators compared notes with each other, they would have been able to quickly establish the different time of day that lunar eclipses took place, and could calculate the distance from their location in China to their location in Arabia. This type of comparison was used during the Middle Ages to calculate the distance between locations. In short, to calculate this they would need to be able to compare an observation of a lunar eclipse in Chinese time, and a second observation in Arabian time. Distance would have been calculated by the difference between the local Chinese “sundial time” and the Arabian “sundial time.”

Another tool: The Astrolabe

The concept behind the astrolabe goes back to classical Greece. Hipparchus was born in Nicaea in Asia Minor (now Iznik in Turkey) about 180 BCE, but studied and worked on the island of Rhodes. Hipparchus wrote about the change in the orientation of the rotation of the axis of the equinoxes and was influential in the development of trigonometry.

He redefined and formalized the projection as a method for solving complex problems of astronomy without spherical trigonometry. Hipparchus did not invent the astrolabe, but he did refine the projection theory.

The earliest evidence of use of stereographic projection in a machine is in the writing of the Roman author and architect Vitruvius (26 BCE – 88 CE), who in *De Architectura* describes an anaphoric clock (probably a water clock) in Alexandria. The clock had a rotating field of stars behind a wire frame indicating the hours of the day. The wire framework (the spider) and the star locations were constructed using stereographic projection. Similar constructions dating from the first to third century have been found in Salzburg and north-eastern France, so such mechanisms were apparently fairly widespread among Romans.

The earliest major writer whose writings on projection were persevered was Claudius Ptolemy. (CE 150) He wrote extensively on this subject in his work known as *The Planisphaerium*. There are tantalizing hints

130 Soon-to-be published annotated translation of the *Weiliie* by John E. Hill - personal communication 30 May, 2017

in Ptolemy's writing that he may have had an instrument that could justifiably be called an astrolabe. Ptolemy also refined the fundamental geometry of the Earth-Sun system that is used to design astrolabes.^{131*}

No one knows exactly when the first astrolabe was constructed. Theon of Alexandria (390 CE) wrote a treatise on the astrolabe that was the basis for much that was written on the subject in the Middle Ages. Synesius of Cyrene (378-430 CE), Theon's son-in-law, apparently had a constructed instrument that was arguably a form of an astrolabe. The earliest descriptions of actual instruments were written by John Philoponos of Alexandria (a.k.a. Joannes Grammaticus) in the sixth century, and a century later by Severus Sebokht, Bishop of Kenneserin, Syria, although it is likely that Sebokht's work was a derivative of Theon's. It is certainly true that astrolabes existed by the seventh century.

The astrolabe in Islam

The astrolabe was introduced early on in the Islamic world. Some historians believe that this might have been later in the eighth and ninth centuries when Arab treatises on the astrolabe were published. However by the ninth century these writings indicate a long familiarity with the instrument. The oldest existing instruments are Arabian from the tenth century, and there are nearly 40 instruments from the 11th and 12th centuries. The astrolabe gave Muslims the ability to determine the time of day, and therefore prayer times as well as the Qibla direction.



Early astrolabes were based on the Arab compass that used the rising and setting of different stars. The astrolabe below has both a front side and rear side, so that calculations can be made.

The astrolabe was also known as a Windrose. The surviving ones have some Persian names for stars. (eg.

131 Morrison, 1996

qutb al-jāh, mutla' al-silbār, khān). The older Arabic names were displaced by later Persian ones, i.e. the Ursa Minor constellation (Ursa Minor and Major) was banāt na'sh before it became qutb al-jāh, but many Arabic names and terms survive.

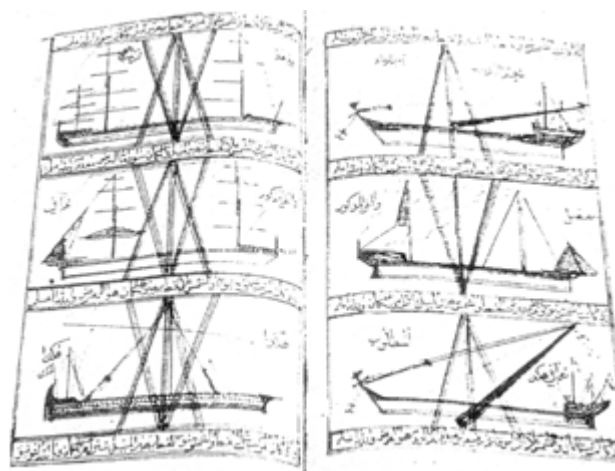
On the astrolabe, latitude was still determined by the height of the pole star using the iṣba' and zām measurements. Astrolabes were quite difficult to use at sea because of the rolling of the ships, which made it hard to determine the vertical line accurately. However, they could be used on shore, and the latitude of every port and headland was recorded in books of nautical instruction or *rahmānis*.

Sun location

Another navigation method that was used by many early dhow captains was simply the position of the sun or North Star above their boat. By standing on various locations on the boat, they could place the sun or North Star above, right, left or behind the dhow. As long as they kept the stars at a correct position above the rigging, they were assured that they would arrive at their destination.

Nautical manuals

In addition to astronomical tables, charts and latitudes, the *rahmānis* or nautical manuals contained information about winds, coasts, reefs and everything that a captain would need to know. Some of these manuals became very popular, such as *Kitāb ma'dīn al-asrār fī 'ilm al-biḥār* (*The Mine of Secrets in the Science of the Seas*) by Shaikh Naṣr bin 'Alī al Haḍuri. This book contains latitude and longitude tables as well as drawings of the position of the sun above the dhow.



Above: A page from: *Kitāb ma'dīn al-asrār fī 'ilm al-biḥār*. This book was being hand-copied as late as the 1940's in Oman.

Compass

The magnetic needle was known in China from ancient times, but there is little mention of it being used as a nautical instrument before the tenth century. It is likely that the compass was not considered very important in the east, as the skies over the Indian Ocean were usually very clear, especially during the times that the Arab sailors traveled with the monsoons. It was only under the clouds of the north that the magnetic compass was eagerly made use of.

Mountain Peaks

Another important item in the Nabataean navigator's toolbox was the use of mountain peaks. There are a number of important peaks that were used on the routes from Yemen to Gaza or Damascus.

On the next page is a list of some of the mountains that Nabataea navigators could take a read from as they passed from Yemen to Gaza or Damascus.

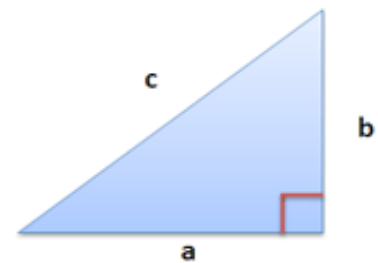
| Mountain | Height | GPS coordinates |
|-----------------------|--------------------|-----------------------------|
| Jebel an Nabi Shu'ayb | 3666 m / 12,027 ft | 15°17'34.93"N 43°57'44.93"E |
| Jabal Sawda | 3,000 m / 9,843 ft | 18°16'02"N 42°22'05"E |
| Jabal Warrab | 2,948 m / 9672 | 17°55'42"N 43°15'56"E |
| Jabal Werqaan | 2,393m / 7851 | 23°58'38"N 39°16'43"E |
| Jabal Al-Lawz | 2,549m / 8363 | 28°39'16"N 35°18'18"E |
| Mount Hermon | 2814 m / 9232 ft | 33°24'52.20"N 35°51'26.38"E |

Pythagorean Theorem

Those not acquainted with the history of mathematics often imagine that basic geometry was a later invention and are often surprised to discover that this theory was known 500 years before Christ. And so the Pythagorean theorem must also be added to the list of tools that were available to the early Arabs.

Although it is often argued that knowledge of the theorem predates him, the theorem is named after the ancient Greek mathematician Pythagoras (c. 570 – c. 495 BCE) as it is he who, by tradition, is credited with its first recorded proof. This knowledge was spread by merchants to Mesopotamian, Indian and Chinese until mathematicians everywhere had access to the theorem.

In mathematics, the Pythagorean theorem, also known as Pythagoras' theorem, is a relation in Euclidean geometry among the three sides of a right triangle. It states that the square of the hypotenuse (the side opposite the right angle) is equal to the sum of the squares of the other two sides. The theorem can be written as an equation relating the lengths of the sides a , b and c , often called the "Pythagorean equation" $a^2 + b^2 = c^2$ where c represents the length of the hypotenuse and a and b the lengths of the triangle's other two sides.¹³²



$$a^2 + b^2 = c^2$$

A Chinese astronomical and mathematical treatise called Zhoubi Suanjing (The Arithmetical Classic of the Gnomon and the Circular Paths of Heaven, ca. 500-200 BCE) possibly predating Pythagoras, gives a statement of and geometrical demonstration of the Pythagorean theorem.^{133, 134}

¹³² Posamentier, Alfred. *The Pythagorean Theorem: The Story of Its Power and Beauty*, p. 23 (Prometheus Books 2010).

¹³³ Joseph Needham with the collaboration of Wang Ling. *Science and civilization in China*. Vol. 3: Mathematics and the Sciences. Cambridge Univ Press, New York, 1959

¹³⁴ Yoshio Mikami. *The Development of Mathematics in China and Japan*, 2nd edition, Chelsea Publ., New York, 1974. (1st ed. Leipzig, 1913.)

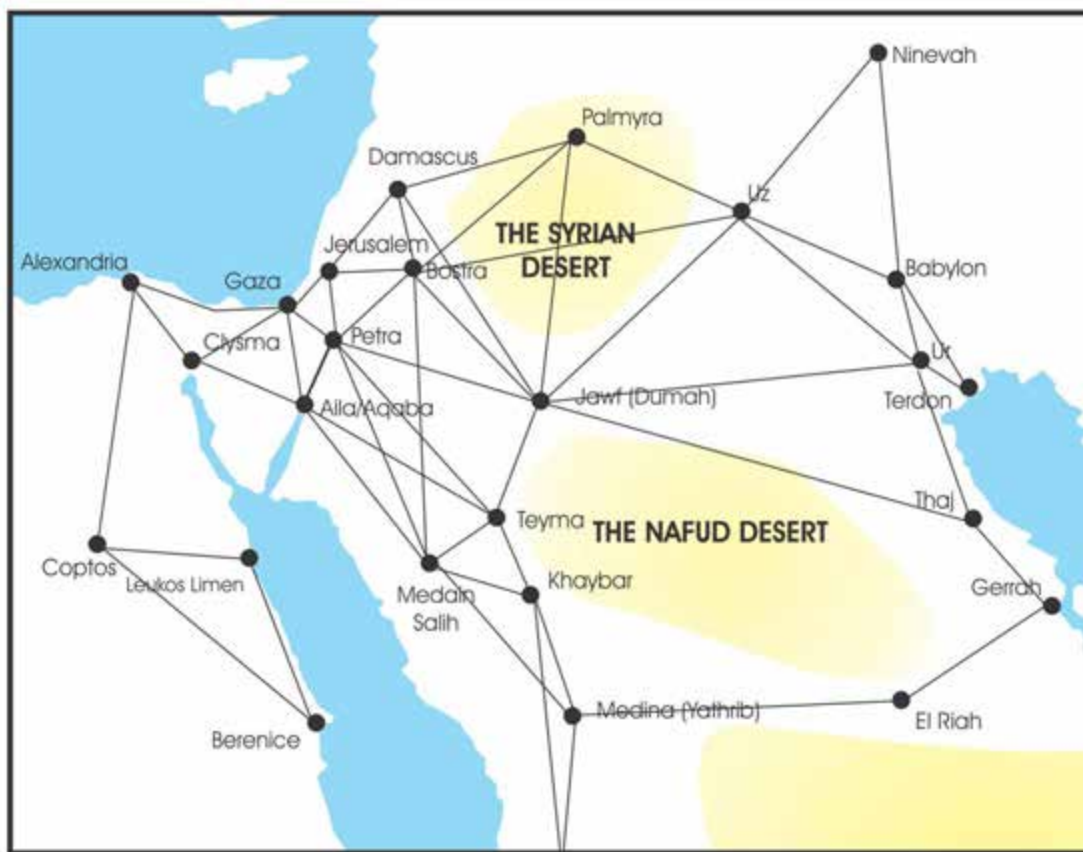
Getting into a navigator's mind

Most of us approach celestial navigation from a vacuum. We have little background information with which to understand how navigation would have worked. The Arabs on the other hand came with centuries of background information. First, they were intimately familiar with the names and places of the Middle East. A good Arab navigator would not only know the names of the major towns and markets, he would know which goods were produced or desired at different markets.

Second, along with the locations, he would know the iṣba' measurements for each of these locations. It may sound complex to us, but remember that the ancient Arabs did not have their minds cluttered with city maps, road and highway numbers, subway routes and other things that clutter our modern minds.

In addition to the iṣba' (north-south) measurement for each city, the caravan master would know the steps needed to walk between the locations along the route. He would also know the general direction between cities, using the 32 akhnām directions on the horizon.

From youth, a caravan master would have started traveling the routes, learning to measure the *iṣba'* and understanding the 32 *akhnām*. Before one could become a caravan master, he would have had to be able to master both *ishārāt* (local guides) and *majra* (celestial guides). And each of these routes would have formed a mesh of triangles in his mind.



The map above is given simply as an illustration of how an ancient might have viewed his world, in terms of triangles. This map does not include all of the places, or landmark locations such as mountains.

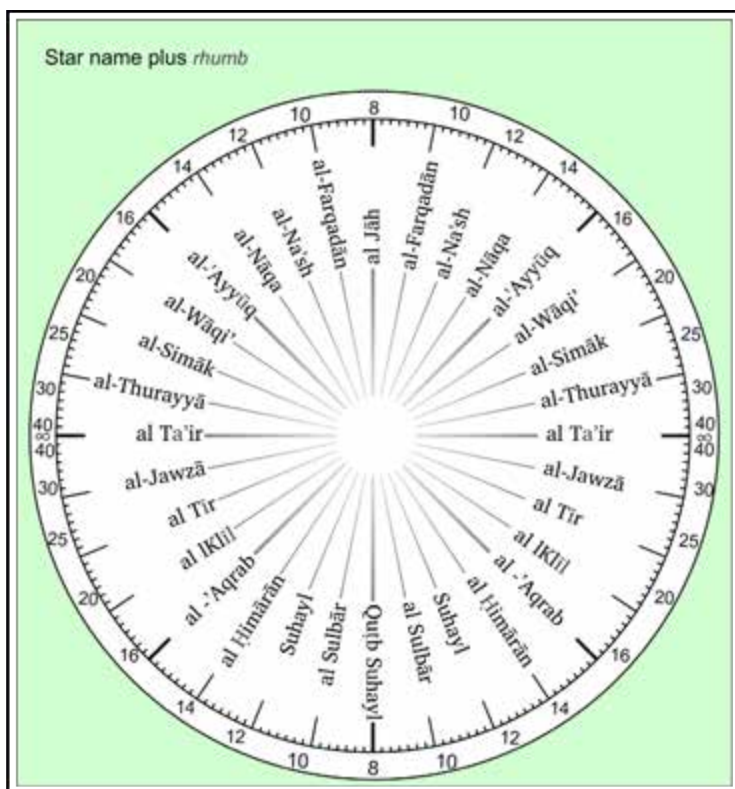
Using ishārāt or “local guides”

Let’s go back to Ka’b who is standing on the temple mount in Jerusalem. The first thing he would do is take a reading of the North Star, or the “basic measurement.” All other measurements follow this one. The Arabs understood that when they traveled directly north, the pole star would rise at a steady rate, and when they traveled south the North Star would drop at a steady rate. They also knew that if they traveled at an angle, towards any of the 32 akhnām points, that the pole star would rise or drop at different rates. These rates were called rhumb, and they had names and measurements for each of the 32 akhnām. The distance traveled on any rhumb that changed the Pole Star by 1ṣba’ was called a tirfa.



Right Jebal Haroun is the the peak that overlooks Petra.

Remember, caravan masters were not trying to map the world. They did not care about longitude and latitude. They had one objective: to find their way across trackless deserts towards a city or watering point that was over the horizon.

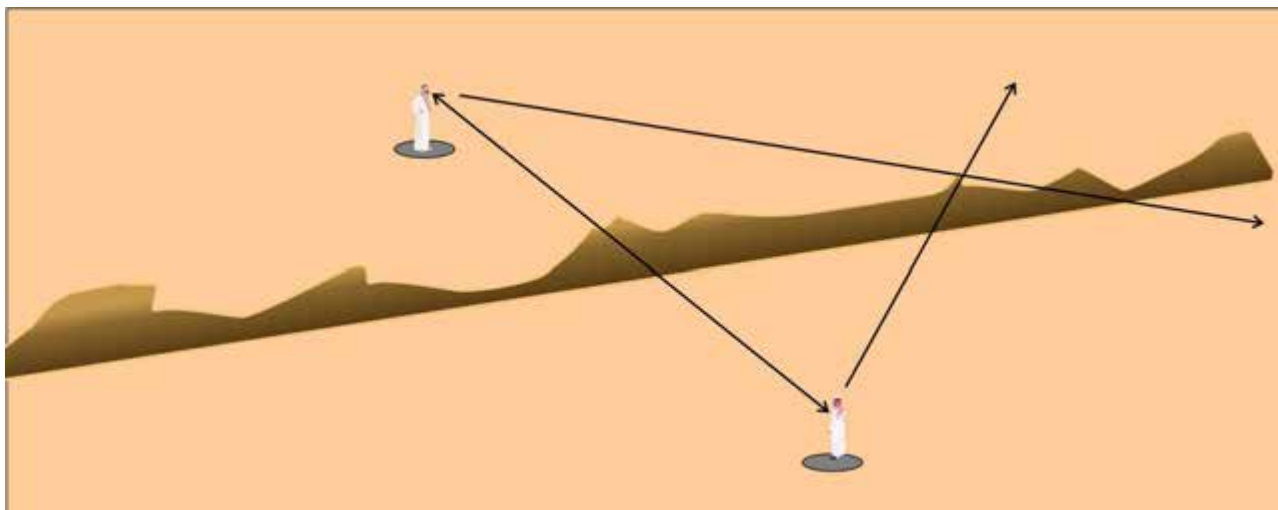


Once he knew where he was by measuring ṣba’ and zāms, he had a multitude of tools available to him. For instance, by scanning the horizon, he would look for any landmarks that could be seen by someone in Jerusalem as well as someone in Petra. For instance, the left photo above demonstrates that from Mount Nebo one can see many places in the land of Israel. On a clear day, I have seen Jerusalem from this spot.

While Ka’b could not see Petra he could see as far as the Judean mountains. And he could map the southern horizon using the stars on the Arab Rose compass, noting which stars were nearest the peaks. From the ancient city of Petra observers would have known the

main geographical features around them on the distant horizon. Ka'b, who was skilled in navigation, would have known this from his observations while in the Holy City.

By comparing the two horizons, Ka'b would have pointed his Qibla at the mountain or valley that was closest to what could be observed from the south. Another option would have been to take the reading from other points within a known walking distance from Petra and then calculating the central point using the Pythagorean theorem.



Below we can see a mountain peak in the south Judean desert which can be viewed from very far away as it overlooks the Dead Sea valley, and can be seen from the mountains of Moab as well as from Jerusalem some 47 km away. If a person stands on top a mountain, he can survey a larger-than-usual patch of the planet, and can perceive bright lights from a great distance. On a dark night, a person can see a fire flickering up to 48 kilometers away (30 miles).¹³⁵ Back in the time of the Nabataean merchants, there was no light



pollution from cities, so a bright light on a mountain top could be seen over a hundred miles away. The Romans used lights on mountain peaks as part of the *Cursus Publicus* system to send messages to and from Rome.

This system consisted of a series of forts and stations that were spread out along the major road systems connecting the regions of the Roman world. These stations provided horses to dis-

135 Selig Hecht, Columbia University, 1941

patch riders, usually soldiers, and vehicles for magistrates or officers of the court. The vehicles were called *clabulae*, but little is known of them. A written order issued by the emperor himself was necessary to use the services supplied by the *cursus publicus*. Abuses of the system existed, for governors and minor appointees used the orders to give themselves and their families free transport. Forgeries and stolen orders were also used. Pliny and Trajan write about the necessity of those who wish to send things via the imperial post to keep up-to-date licenses.¹³⁶

This system also incorporated beacon lights that could be used for important messages. These beacons were used where traditional travel was slow. While most travel went along the Roman roads, the beacons could also be used for emergency messages. Jerusalem was such a location, where beacons could be viewed from Machaerus some 45 kilometers away (see photo below). The road required travel around the Dead Sea, but a beacon from Herod's mountain-top palace could be seen in Jerusalem. The angle of direction from Jerusalem to Machaerus would have been known, as well as the *işba'* distance between them. While there is no record of a similar beacon being set up on Mount Haroun above Petra, it would be surprising if there was no beacon, since the daughter of King Aretas of Petra was the wife of King Herod. The beacon system allowed the kingdoms around the Dead Sea to communicate with the Roman rulers in Jerusalem, as well as to access the Roman *cursus publicus* that took messages from Jerusalem to Rome.



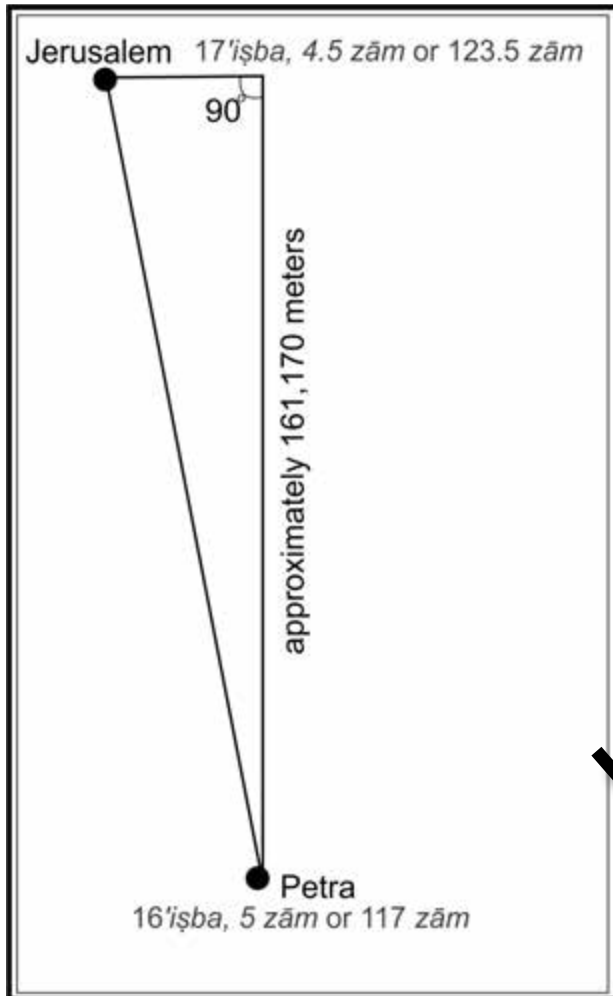
Above: Herod's palace known as Machaerum across the Dead Sea from Jerusalem.

Sometimes we think that ancient locations in the Middle East were remote and distant to each other. However, these neighboring centers were all in communication with each other and merchants could make their way from one centre to another with little trouble.

Basic Information

In addition to using *işhārāt* or "local guides" ancient navigators could also use the stars and a bit of math. There are several ways this could be done. First, Arabs often used a right triangle. In the example below, Ka'b would know the *işba'* height of the north pole star at Petra, the central city of Islam. He would measure this in *'işba* and *zāms*.

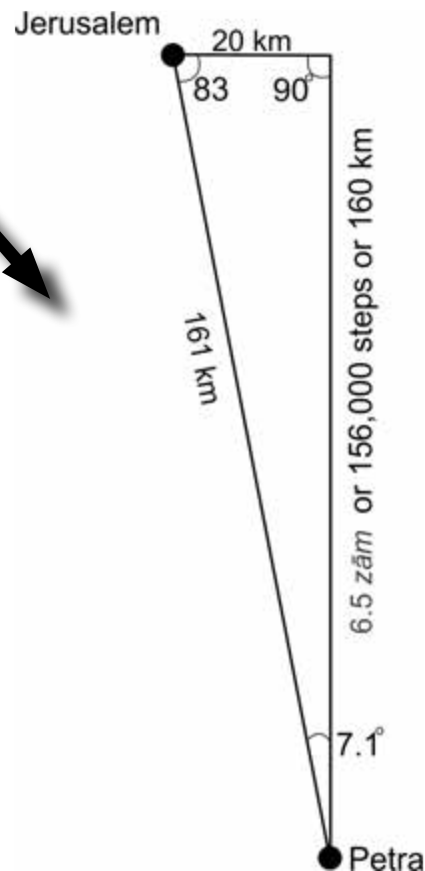
¹³⁶ E.g. Trajan to Pliny 10:46 *Diplomata, quorum praeteritus est dies, non debent esse in usu. Ideo inter prima iniungo mihi, ut per omnes provincias ante mittam nova diplomata, quam desiderari possint.*



Once he was in Jerusalem he could measure the height of the north pole star above Jerusalem and calculate how far north he was.

Ka'b could deduct the Jerusalem height (17 'isba, 4.5 zām) or 123.5 zām from the Petra height (16 'isba, 5 zām) or 117 zām. This difference 6.5 zām.

6.5 zām was equal to 156,000 steps, which would take a person from Petra to a place straight east of Jerusalem.

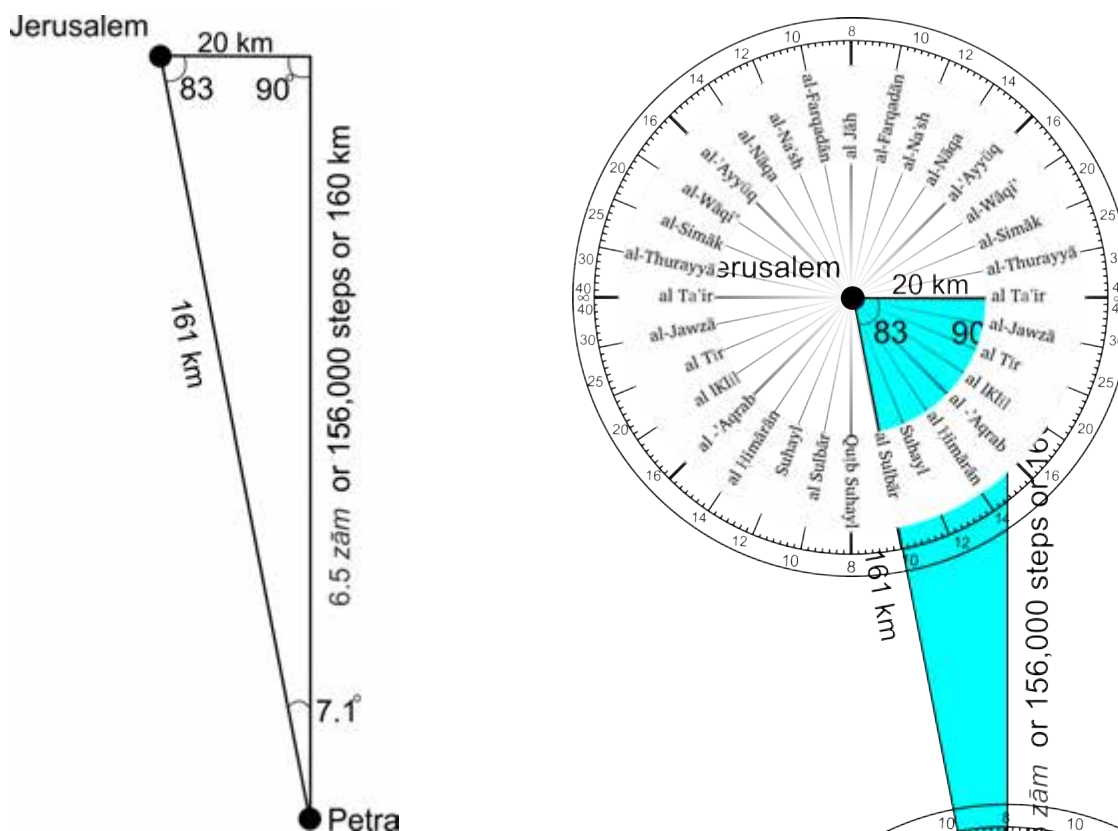


Ka'b also had access to the Arab compass. He knew that the distance traveled on any *rhumb* changed the Pole Star at different rate. He simply had to count back from pure north to get his angle.

Note: 168 km is one zām. You needed to go 8 zām or 1344 km to raise the north pole 1 isba.)

The Portolan Method

While there is some mystery around the origin of Portolan maps, I believe evidence supports the theory that they originated from the Arabs and arrived in Europe, appearing first in Pisa around 1290 CE. Portolan maps rely heavily on the Arab compass and on rhumb lines. Using the Arab compass, Ka'b could calculate the angle south from Jerusalem and the corresponding angle north from Petra. These opposite corresponding rhumb lines are the foundation to understanding the Arab system of navigation. North-South measurements were made both by measuring the height of the North Star, and also counting steps. Measurements east-west relied strongly on counting steps or using time. However, if the navigator knew he had followed a rhumb line according to one of the stars, he could easily calculate how far he had to walk to reach his destination.



Above: The problem of finding the qibla angle to Petra when in Jerusalem. Right: An Arabic Rose compass placed over each location identifies that the angles follow al Sulbār from Jerusalem and al Farqadān from Petra.

This method of calculation was the foundation of the Portolan maps system. Arab navigators were very familiar with the horizon and the places where stars rose and set at each of their destinations. Therefore they would think in terms of the Arab Compass over each of the locations they visited.

Pigeons

Another option that could have been used is that of homing pigeons. Below is a photo of what has been called the columbarium at Petra. A columbarium is a place with niches for funeral urns to be stored. Several websites infer that this was the use for this location. However, there is no record of Nabataeans ever cremating the bodies of their dead. Rather, the evidence points to exposing the dead on platforms and then burying the bones. These bones were placed in family tombs which were accompanied by dining rooms where the extended family could gather at pilgrimage time to eat a meal in the presence of the ancient ancestors.



Above right: The so-called columbarium in Petra. This type of rock carved formation is not unique to Petra. It is found in many ancient locations, and is not associated with death or burial rites in other locations. Above left: a similar rock located in Wadi Seir near the Iraq al-Amir castle. Both of these sites appear to be dove-cotes for homing pigeons as do similar rock designs in the caves at Bet Guvrin National Park and elsewhere.

As a method of communication, records go back to the ancient Persians from whom the art of training birds probably originated. The Mughals also used them as their messengers, and the Romans used pigeon messengers to aid their military. Frontinus said that Julius Caesar used pigeons as messengers in his conquest of Gaul.¹³⁷

The Arabs also kept pigeons and used them as messengers. There are records of pigeons being used in Baghdad for mail service soon after the city was built.¹³⁸

Flights as long as 1,800 km (1,100 miles) have been recorded by birds in competitive pigeon racing. This would put all of Syria, Iraq and Iran within flying range of Petra. Their average flying speed over moderate distances is around 140 km/h (86 miles per hour) but speeds of up to 160 km/h (99 miles per hour) have been observed in top racers for short distances.¹³⁹

The Forbidden Sanctuary at Petra had pigeons. We know this from the writings of al-Ṭabarī: “*The horse*

¹³⁷ Levi, Wendell (1977). *The Pigeon*. Sumter, South Carolina: Levi Publishing Co, Inc.

¹³⁸ Blechman, Andrew (2007). *Pigeons-The fascinating saga of the world's most revered and reviled bird*. St Lucia, Queensland: University of Queensland Press

¹³⁹ Walcott, Charles (1996). “*Pigeon Homing: Observations, Experiments and Confusions*” (Pdf article). *Journal of Experimental Biology*. 199 (Pt 1): 21–27. PMID 9317262. Retrieved 2008-01-04.

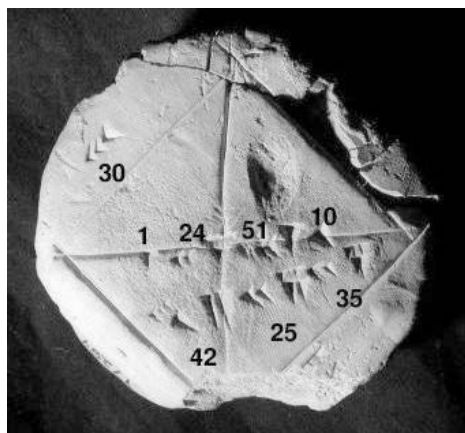
of one of them began to drop dung and the pigeons of the sanctuary (al-ḥaram) area started to scavenge in the droppings. Al-Husayn reigned back his horse from them and Ibn al-Zubayr said ‘What is the matter with you?’ He replied ‘I am afraid lest my horse kill the pigeons of the sanctuary area.’ Ibn al-Zubayr said, ‘You would refrain from this sin, and yet you wish to kill Muslims?’ Al-Husayn answered ‘I will not fight you, allow us to perform the ritual circumambulation of the sanctuary (al-bayt) and then we will leave you.’ He did so, and they departed.”¹⁴⁰

In personal correspondence with Dr. Richard Holland of the School of Biological Sciences at Bangor University in the UK, he stated that “Some studies suggest they (pigeons) know where to go immediately after release. It is difficult to measure the accuracy of their compass mechanism but the dominant one during the day is the sun compass and this is thought to be very accurate. More recent GPS tracking has shown that with repeated releases from the same place, pigeons recapitulate the route very accurately. The challenge in relying on the release of a single pigeon is that other factors could influence its behaviour, and so only by releasing a number of pigeons and assessing their mean heading do we see the pattern that they are oriented towards the home site. A flock released together might be less distracted but I am not sure of any research directly testing this.”

So it is possible that Qiblas were set without any science or math, just by transporting a number of homing pigeons from Petra, and releasing them at the construction site a few at a time until an accurate direction could be established.

Mathematical Solutions

Many people fail to appreciate how early in history the concepts of mathematics were developed. Mathematical solutions were sought after by the ancient Egyptians, Greeks, Babylonians, as well as by others. For instance, the early study of triangles and basic trigonometry can be traced to the 2nd millennium BCE in Egyptian mathematics in the Rhind Mathematical Papyrus and to Babylonian in clay tables such as tablet YBC 7289.



Left: The Yale Babylonian Collection’s Tablet, YBC 7289 (c. 1800–1600 BCE), showing a Babylonian approximation to the square root of 2 (1 24 51 10 w: sexagesimal) in the context of Pythagoras’ Theorem for an isosceles triangle. Courtesy of: Bill Casselman, <http://www.math.ubc.ca/~cass/Euclid/ybc/ybc.html>) and the Yale Babylonian Collection.

Systematic study of trigonometric functions began in Hellenistic mathematics, reaching India as part of Hellenistic astronomy. Indian astronomy and the study of trigonometric functions flourished in the Gupta period, especially in sixth century CE. During the Middle Ages, the study of trigonometry continued in Islamic mathematics, hence it was adopted as a separate subject in the Latin West beginning in the Renaissance with Regiomontanus. The development of modern trigonometry shifted during the western Age of Enlightenment, beginning with 17th-century mathematics (Isaac Newton and James Stirling) and reaching its modern form with Leonhard Euler (1748).

The ancient Babylonians had known of theorems on the ratios of the sides of similar triangles for many centuries, but they lacked the concept of an angle measure and consequently, studied the sides of triangles instead.¹⁴¹ These Babylonian astronomers kept detailed records on the rising and setting of stars, the motion of the planets, and the solar and lunar eclipses, all of which required familiarity with angular distances measured on the celestial sphere.¹⁴²

They also used a form of Fourier analysis to compute ephemeris (tables of astronomical positions), which was discovered in the 1950s by Otto Neugebauer.¹⁴³ To make calculations of the movements of celestial bodies, the Babylonians used basic arithmetic and a coordinate system based on the ecliptic, the part of the heavens that the sun and planets travel through.

Research published in 2016 by Mathieu Ossendrijver based on tablets found in the British Museum provides evidence that the Babylonians even went so far as to have a concept of objects in an abstract mathematical space. The tablets date from between 350 and 50 B.C.E., revealing that the Babylonians understood and used geometry even earlier than previously thought. Ossendrijver showed that the Babylonians used a method for estimating the area under a curve by drawing a trapezoid underneath, a technique previously believed to have originated in 14th century Europe. This method of estimation allowed them to, for example, find the distance Jupiter had traveled in a certain amount of time.¹⁴⁴

Thus it comes as no surprise that six hundred years later, the Arabs of Muḥammad's time had access to the basic concepts of spherical trigonometry which deals with the relationships between trigonometric functions of the sides and angles of the spherical polygons (especially spherical triangles) defined by a number of intersecting great circles on the sphere. Spherical trigonometry is of great importance for calculations in astronomy, geodesy and navigation.

The outside circle of numbers on the Arab compass demonstrate that the Arabs had access to spherical trigonometry and used it regularly.

The Arabs of the ninth to fifteenth centuries would become the world leaders in algebra which simplified trigonometry. However, as time passed, the earlier methods of establishing the Qibla direction were lost, leaving us to wonder, exactly how the early Muslims could have calculated their qiblas so accurately.

Summary

From the materials presented in this chapter, I have attempted to demonstrate that during the time of the founding of Islam, the Arabs would have had many tools and techniques available to them, so that they could accurately determine the direction of the Qibla for their mosques. They could use two methods,

141 Boyer, Carl Benjamin, Greek Trigonometry and Mensuration, in *A History of Mathematics*, 1991, pp. 158–159

142 Maor, Eli, *Trigonometric Delights*. Princeton University Press, 1998, p. 20

143 Boyer PP 158 - 215

144 Emspak, Jesse. "Babylonians Were Using Geometry Centuries Earlier Than Thought". Smithsonian. Retrieved 2016-02-01.

that of *ishārāt* or the knowledge of guides and aids, such as mountains, valleys, and rock formations as well as *majra*, or taking celestial bearings and using mathematical solutions. They measured distance in *zāms* calculating distance both from measuring the stars as well as from physically walking and counting steps. Along with this, they had the Arab Compass which provided them with a sense of angles, measured against the stars, as well as corresponding stars at the other end of the same tangent. They also had an understanding of basic formulas for spherical trigonometry.

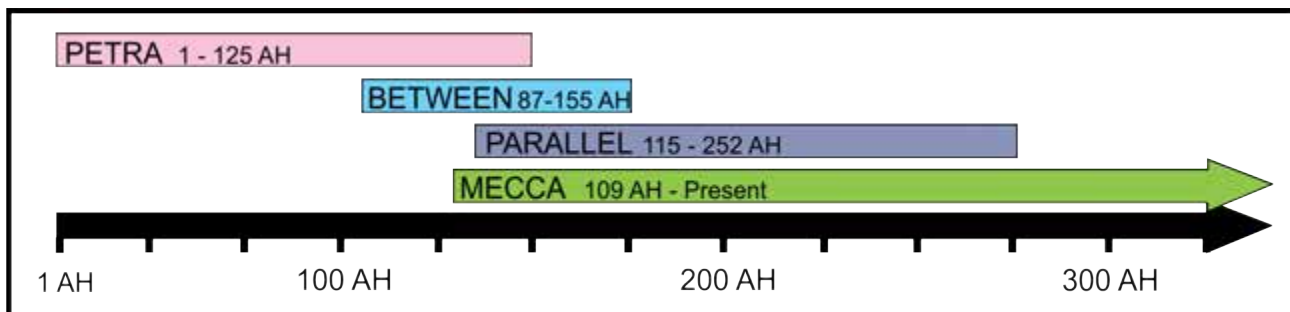
With this knowledge, it comes as no surprise that the Qiblas of early mosques all over the ancient world are accurate to within several degrees.

As we demonstrated in the first chapter, the first Qiblas all pointed to Petra. Then in 708 CE (75 years after the death of Muḥammad) the mihrab mark was introduced so that people could pray towards the Black Stone in Mecca rather than the Holy City of Petra. Finally, after the Abbāsīd rulers solidified their control over the Muslim empire, all mosques and Qiblas pointed towards Mecca in Saudi Arabia.

When did the Qibla change take place?

From the archeological record of ancient Qiblas (presented in the first chapter) we can deduce that the first Qiblas pointed to the city of Petra in Southern Jordan. In my book *Qur'ānic Geography*,¹⁴⁵ I demonstrate that many of the descriptions of ancient Mecca actually fit the ancient city of Petra better. This is highlighted in the film “*The Sacred City*” where viewers are taken to the locations around Petra that correlate with descriptions of the original holy city of Islam. All of this indicates that Islam began in the city of Petra and it was the location of the original Ka’ba, the original focus of Islamic prayer and the focus of the ancient pilgrimage. Then something major occurred that caused the Qibla to change. The archeological record taken from the construction of mosques is not clear enough to pinpoint actual dates, but can be used to indicate when events happened within a few years. As the chart below indicates four Qibla directions emerge just before and after 100 AH (719 CE), with only the Mecca Qibla surviving until today. While the archeological data is not sufficient to determine when exactly the first Qibla change took place, the earliest mosque to make a Qibla change was around 87 AH (706 CE). When we examine the story behind this rogue mosque, we find that it was constructed by General al-Ḥajjāj. This provides clues as to what might have taken place. As General al-Ḥajjāj is known to Islamic historians, we can delve into some of the tensions of his day and try to understand why his Qibla was so radically different from the original Qibla of Petra.

When building his new mosque, Ḥajjāj pointed it directly between Petra and Mecca. This is a radical change from previous mosque construction. From the archeological record we can see that several mosques followed this pattern over the next 68 years. However, after 252 AH (866 CE) Mecca becomes the sole Qibla used by the Abbasids and the other Qiblas fade from view. Eventually all mosques everywhere point to Mecca in Saudi Arabia.



Above: the four Qiblas as revealed by original mosque construction

So what triggered al-Ḥajjāj’s dislike of the Petra Qibla and why did he not point it to the newly emerging Mecca Qibla? To understand this, we need to go back into early Islamic history to understand the issues and tensions taking place.

On March 7th, 634 CE (12 AH) a small but significant change took place in the Islamic Empire. Upon the death of Caliph Abū Bakr, ‘Umar bin al-Khaṭṭāb became the new caliph. The day after the burial of

¹⁴⁵ *Qur'ānic Geography* pages 251-330

Abū Bakr, ‘Umar climbed into the pulpit and declared, “I am going to say words to which you must say ‘Amen.’”¹⁴⁶ “The likeness of the Arabs is only to a camel led by the nose following its leader; therefore let its leader look where he leads. As for me, by the Lord of the Ka’ba, I will indeed bring them along on the road.”

This signaled a new style of leadership. The companions of the prophets were slowly pushed aside as Caliph ‘Umar began to forge a more military leadership rather than a religious one. His first step was to conquer Damascus, and then to push against the Persians, finally expanding the empire in all directions. This pattern was followed by Uthmān who was also a very strong, almost ruthless, leader.

The first civil war began when the Caliph Uthmān ibn Affān was assassinated by Egyptian rebels in 36 AH (656 CE) and continued through the four-year reign of Uthmān’s successor Ali ibn Abī Ṭālib. It ended in 661 when Ali’s heir Hasan ibn Ali concluded a treaty acknowledging the rule to belong to the Umayyad caliphate.

Caliph Yazid’s brother Mu’āwiyah assumed command of the Arab Muslim forces based in Damascus. Mu’āwiyah succeeded Ali as caliph after a series of confrontations in 658–661 CE and designated the city of Damascus as the capital of the new Umayyad dynasty.

When Mu’āwiyah chose Damascus as his new capital city, he further alienated the religious leaders. They would have preferred Medina or even Mecca (then located at Petra).¹⁴⁷

In the Holy City (Petra) a man known as Ibn al-Zubayr was the governor. He was particularly incensed at the deliberate snub, and so he formed a rebellion and declared himself as caliph.

The rulers in Damascus then dispatched an army to the Holy City to fight against Ibn Zubayr and his companions. Then one day, Ibn Zubayr shouted to the Syrians that he had heard that the caliph in Damascus had died. It seems that the armies were close enough to one another to shout to each other.¹⁴⁸ With that, the army decided they must return to Damascus until a new caliph had been appointed.¹⁴⁹

The members of the Umayyad royal family said to them, “Do not leave without taking us with you to Syria.” So they did that and the army continued until it reached Syria. There Yazīd ibn Mu’āwiyah had willed that the oath of allegiance be given to his son Mu’āwiyah ibn Yazīd, According to Awanah, Yazīd ibn Mu’āwiyah designated his son Mu’āwiyah ibn Yazīd as caliph, but the latter only survived forty days.”¹⁵⁰

Al-Ṭabarī notes that later historians say the new caliph lived three months, not forty days, but then he adds: “‘Umar told me on the authority of Ali ibn Muḥammad: When Mu’āwiyah ibn Yazīd had been designated caliph, gathered together the officials of his father and the oath of allegiance given to him in Da-

146 Ṭabarī Vol. 11, page 157 - 158

147 Burns, Ross (2005). *Damascus: A History*. Routledge

148 Ṭabarī Vol. 20 430, page 2

149 Ṭabarī Vol. 20 progressing through several volumes

150 Ṭabarī Vol. 20, page 5

musculus, he perished there after forty days of his rule. He died when he was thirteen years and eighteen days old.”¹⁵¹

Al-Ṭabarī tells us: *According to Muḥammad ibn 'Umar al-Wāqidi - Ibrāhīm ibn Mūsā Ikrimah ibn Khālīd: Ibn al-Zubayr demolished the sanctuary (Ka'ba) until he had leveled it to the ground, and he dug out its foundation He placed the Black Cornerstone by it in an ark [tabut] in a strip of silk.*¹⁵² With the Ka'ba destroyed, Ibn Al Zubayr himself led the pilgrimage that year, and then for the the next three years there was no pilgrimage, as no one came to the Holy City.

When there was a lull in the war to choose a new caliph, Ibn Zubayr decided to rebuild the Ka'ba. The Islamic records, written some two hundred years later, do not tell us where this construction took place. It could have been in Petra, or it could have been in far away Mecca, in Saudi Arabia, in a valley where it was safe from the Umayyad armies.



Above: Observation of construction near the Ka'ba failed to uncover any ancient large foundation stones.

151 Ṭabarī, Vol. 20, page 5, section 432

152 Ṭabarī Vol. 20, page 123, 64 AH

*According to Ishāq ibn Abi Israeīl – ‘Abd al-Azīz ibn Khālīd ibn Rustam al-Sanani Abū Muḥammad: Ziyād ibn Jiyāl told me he was in [the Holy City] on the day when Ibn al-Zubayr was overcome and heard him say, “My mother Asma bint Abi Bakr told me that the Messenger of God said to ‘Ā’isha: “If it were not that your people had only recently been in a state of unbelief, I would restore the Ka’ba on the foundations of Abraham and I would add to the Ka’ba part of the Ḥijr” (stone). Ibn al-Zubayr gave the order for it and it was excavated, and they found rocks as big as a camel. They moved a boulder of them and a bright light flashed out. They re-established it on its foundation and Ibn al-Zubayr rebuilt it, giving it two doors, from one of which it was entered and from the other vacated.”*¹⁵³

At this point, al-Ḥajjāj entered the picture. The Syrians sent him to put down the rebellion and restore law and order, and access to the religious sites in the Holy City. Al-Ḥajjāj was an extremely capable and ruthless statesman, strict in character, but also a harsh and demanding master. He was widely feared by his contemporaries and became a deeply controversial figure, and later an object of deep-seated enmity as he did things differently than the later Abbasid rulers desired. As we will try and demonstrate he was involved in the very controversial changing of the Qibla.

Al-Ḥajjāj was born ca. 661 CE (41 AH) in the city of Ṭā’if.¹⁵⁴ His ancestry was not particularly distinguished: he came of a poor family whose members had worked as stone carriers and builders. His mother, al-Fari’a had married, and been divorced by al-Mughira ibn Shu’ba, appointed governor of Kufa by the first Umayyad caliph, Mu’āwiya (661–680).¹⁵⁵

As a boy, al-Ḥajjāj acquired the nickname Kulayb (“little dog”) with which he was later derisively referred to. His early life is obscure, except for his having been a schoolmaster in his home town—another source of derision to his enemies.

Soon after Abd al-Malik ibn Marwan (Aug 684 CE or 64 AH) assumed the throne, al-Ḥajjāj left his home town and went to the capital, Damascus, where he entered the security force of the caliph. There he attracted Abd al-Malik’s attention by the rapidity and efficiency with which he restored discipline during a mutiny of the troops appointed to accompany the caliph in his campaign against Mus’ab ibn al-Zubayr in Iraq.¹⁵⁶

As a result, the caliph entrusted him with command of the army’s rear-guard. He apparently achieved further feats of valor, so that after the defeat of Mus’ab, Abd al-Malik decided to entrust him with the expedition to subdue Mus’ab’s brother, Abdallāh ibn al-Zubayr, in the Holy City.

The caliph had charged him first to negotiate with Ibn al-Zubayr and to assure him of freedom from punishment if he capitulated, but, if the opposition continued, to starve him out by siege, but on no account to let the affair result in bloodshed in the Holy City. Since the negotiations failed and al-Ḥajjāj lost patience,

153 Ṭabarī Vol. 20, page 176, See also Azraqi, *Akhbar Makkah*, 143, and al-Azmi, V. 9157

154 Ṭā’if - see page 252

155 Dietrich, A. (1991). “al-Ḥadīdīdī b. Yūsuf”. *The Encyclopedia of Islam*, New Edition, Volume II: C–G. Leiden and New York: BRILL. pp. 39–42

156 Dietrich 1991, p. 40.

he sent a courier to ask ‘Abd al-Malik for reinforcements and also for permission to take Mecca by force. He received both, and thereupon bombarded the Holy City with stones from a mountain.¹⁵⁷

The war between Ibn al Zubayr and al-Ḥajjāj took place for six months and seventeen nights in the hollow of Mecca. Here the word baṭn or stomach is used to describe the hollow. This term would justifiably mean the center of the city or the center of the canyon.¹⁵⁸

*According to al-Ḥārith [ibn Muḥammad] – Muḥammad ibn Sa’d – Muḥammad ibn ‘Umar [al-Wāqidi] – Ishāq ibn Yahyā – Yūsuf ibn Mahak, who said: I saw the manjaniq (trebuchet) with which [stones] were being hurled. The sky was thundering and lightening and the sound of thunder and lightning rose above that of the stones, so that it masked it.*¹⁵⁹

The Ka’ba was so damaged that it looked “like the torn bosoms of mourning women.”¹⁶⁰ The siege lasted for seven months and in the end 10,000 men, among them two of Ibn al-Zubayr’s sons, had gone over to al-Ḥajjāj. In the end Ibn al-Zubayr and his youngest son were killed in the fighting in a ruined building near the Ka’ba.¹⁶¹

As a reward, al-Ḥajjāj was given the governorship of the Hijaz, Yemen, and al-Yamama. It was here that he began to persecute the Companions of Muḥammad by making them wear a lead seal around their necks.¹⁶² During his lifetime, Al-Ḥajjāj killed four companions (ṣaḥaba) of Muḥammad: Abd Allah ibn al-Zubayr, Jabir ibn Abd-Allah, Sa’id ibn Jubayr and Kumayl ibn Ziyad. Despite these actions, in 75 AH Caliph Abd al-Malik appointed al-Ḥajjāj as governor of Iraq. This placed Ḥajjāj in a very powerful position, governing the entire eastern half of the caliphate. The following years were filled with bloody wars, putting down rebellions and ruling with an iron fist.

What interests us the most is the construction of the city of Wāsiṭ in the year 83 AH and Wāsiṭ al-Qaṣab in 95 AH. A number of interesting mosque constructions or renovations took place during this time. As archeological evidence now shows us, the Qiblas of these mosques did not all agree.

The first striking evidence is that al-Ḥajjāj’s mosque in Wāsiṭ faced a spot directly between Mecca and Petra. This was followed by the principal mosque in Damascus in 91 AH (709 CE), the mosque of Boşra in 102 AH (721 CE), Hayr al-Gharbi mosque in 107 AH (726 CE), Hayr al-Sharqi in 110 AH (728 CE), Ba’albeck in 122 AH (740 CE), and Ḥarrān in 127 AH (744 CE), and finally Raqqa in 155 AH (772 CE).

157 Deitrich A.. E2 2, page 40 Jebal Abu Kubays, which is an unknown location today.

158 Ṭabarī Vol. 21, page 224

159 Ṭabarī, Vol. 21, page 225

160 Gibb, Ka’ba, *Shorter Encyclopedia of Islam*, pg 193

161 Most likely what is known today as The Great Temple in Petra, located near to the Petra Ka’ba location. It was fortified for war sometime during the early years of Islam. (dated from the roofing tiles used in the fortifications. These tiles came down in the earthquake of 551 July 9th 551CE, 19 years before Islamic records say Muḥammad was born.)

162 Ṭabarī, Vol 22, page 2

These mosques, built over a 70 year period, demonstrate that there was a part of Islam that rejected the Petra Qibla and also the new Mecca Qibla. (See maps pages 8 & 9)

Next, let us consider the character of the man who started this trend. He was the most powerful man in the eastern half of the Islamic Empire. He was ruthless and arrogant enough to persecute the companions (ṣaḥāba) of Muḥammad, and he was involved with the destruction of the Ka'ba in Petra. Because of his attack on Petra, the Black Stone was moved to Saudi Arabia sometime around 65 AH (685 CE). Such a ruler would have distained pointing his principal mosque towards the now ruined city of Petra, which he had helped to destroy. Additionally, the city of Petra was further destroyed in powerful earthquakes in 94 AH (713 CE)¹⁶³ and again in 128 AH (746 CE)¹⁶⁴.

At the same time, al-Ḥajjāj would not want to point his mosque to Mecca in Arabia, as it was an “upstart” religious site, and only just beginning to grow in popularity. In fact, al-Ḥajjāj wrote to Caliph Walid: “The people of hypocrisy and schism have taken refuge in Mecca.”¹⁶⁵ To date the earliest Meccan mosque we have uncovered dates to more than 20 years after al-Ḥajjāj built his rouge mosque in Wāsiṭ. And so it comes as no surprise that al-Ḥajjāj took a middle path, rejecting both the old and the new Qiblas.

So when did Ibn al-Zubayr move the Black Stone to Mecca in Saudi Arabia? While we cannot pinpoint an actual date, we can identify several things that will help us. Consider these things in chronological order:

- 64 AH (684 CE): Ibn al-Zubayr declares himself caliph in the Holy City. Palestine, Baṣra and Kufa also rebel. The Syrians send an army against the Holy City and blockade them in. The caliph in Damascus dies, the army returns to Damascus vowing the battle is not over. The army returns and during the fighting, the Ka'ba burns.¹⁶⁶ Ibn al-Zubayr then destroys the rest of the first Ka'ba and places the Black Stone on a silk strip on a temporary stand.¹⁶⁷
- 65 AH (684 CE): Followers of Hussein gather at his tomb and vow to remove Ibn al-Zubayr and restore the authority to a member of Muḥammad's family. A large battle follows. Ibn al-Zubayr's followers are called the “destroyers of the sacred sanctuary.”¹⁶⁸ Later, Ibn al-Zubayr rebuilds the Ka'ba, this time on the “foundation stones laid by Abraham.” It would seem that this new Ka'ba was built in Mecca in Saudi Arabia, out of reach of both the Umayyad armies and the followers of Ali. I will address this later in this chapter. Abdallāh Ibn al-Zubayr himself leads the pilgrimage that year.
- 66 AH (685 CE): The fighting continues. During the dispute with Ibn al-Ḥanafīyyah, Abū 'Abdallāh

163 Ṭabarī, Vol. 23, page 204

164 Oleson, 1995

165 Ṭabarī, Vol. 23, page 210

166 Ṭabarī Vol. 20 page 114

167 Ṭabarī Vol. 20 page 50, 123

168 Ṭabarī Vol. 20 page 156

al Jadālī swears “by the Lord of the Corner and the Station...”¹⁶⁹ but does not mention the Black Stone which would have been in the corner. This strange utterance suggests to us that the Black Stone was no longer in the Ka’ba wall.

- 67 AH (686 CE) Al-Ṭabarī relates an account where the people of Kūfa say to Ibn al-Zubayr that they were “people who turn to the same Qibla as you.”¹⁷⁰ This indicates that there were at least two Qiblas at this time, and that the people of Kūfa prayed towards the same Qibla as al-Zubayr (suggesting Mecca not Petra.) Ṭabarī also notes that there was no official pilgrimage that year, indicating that there was some conflict over the pilgrimage.
- 68 AH (687 CE): Al-Ṭabarī tells us that there were severe droughts in Syria, so they could not go campaigning. That year there were four separate groups that went on pilgrimage, each under different banners because the various factions fighting in the civil war.¹⁷¹
- 69 AH (688 CE): there was a revolt in Damascus itself, further diverting attention from the problems in the Holy City.
- 70 AH (689 CE): This is a missing year, with little information other than Muṣ’ab Ibn al-Zubayr bringing horses and camels to the Holy City, presumably to move people out of the city, possibly to join others already in Mecca in Saudi Arabia.¹⁷²
- 71-74 AH (690-693 CE): al-Ḥajjāj and the Syrian armies surrounded the Holy City of Petra and destroyed the Ka’ba sanctuary using a trebuchet.¹⁷³ It would seem strange that they would bombard the Ka’ba if it contained the Black Stone. However, if the Black Stone was not there, they may have felt freedom to use a trebuchet which they knew would destroy the Ka’ba building. Apparently the Black Stone was not damaged during this time, which would indicate it was moved to safety in Mecca.
- 83 - 87 AH (702-706 CE): There are no recorded pilgrimages.
- 87 AH (706 CE): al-Ḥajjāj builds his rouge mosque in Wāsiṭ.
- 89 AH (708 CE): The Mihrab Niche is introduced in old and new mosques to point to Mecca. This starts in Medina, an area not under the control of al-Ḥajjāj.¹⁷⁴
- 94 AH (714 CE): An earthquake destroyed much of Petra and the city was abandoned. Mecca in Arabia became the focal point of worship, it would seem approved by God, due to the divine action seen in the earthquake.

169 Ṭabarī Vol. 21, pg 61 & Vol. 23 pg 222

170 Ṭabarī Vol 21, pg 107, 112

171 Ṭabarī Vol. 21, pg 134, 151

172 Ṭabarī Vol. 21, pg 169

173 Ṭabarī Vol. 19: 22-224

174 Ṭabarī Vol. 23, pg 141

• 98 AH (717 CE): It is during these years that the Christian Roman powers in Byzantium were accusing the Muslims of many things. Leo III also tells us that *Abū Turāb and Salmān the Persian composed the Qur’ān even though the rumor has got around among you that God sent it down from the heavens.... As for your book, you have already given us examples of such falsifications and one knows among others of a certain Ḥajjāj named by you as governor of Persia, who had men gather your ancient books, which he replaced by others composed by himself according to his taste and which he disseminated everywhere in your nation, because it was easier by far to undertake such a task among a people speaking a single language. From this destruction, nevertheless, there escaped a few of the works of Abū Turāb, for Hajjaj could not make them disappear completely.*¹⁷⁵

A similar account is told by ‘Abd al-Masīḥ al Kindī and Abraham of Tiberias, both writing during the reign of Ma’mūn (813-833 CE). “*Then there was the matter of Ḥajjāj ibn Yūsuf, namely that he gathered together every last copy and caused to be omitted from the text many things.... and a version (naskhah) was written according to the composition (ta’līf) favored by Ḥajjāj in six copies (maṣāḥif) and one was sent to Egypt, another to Syria another to Medina, another to Mecca, another to Kūfa and another to Baṣra.*”¹⁷⁶

From these accounts, it appears that more than the Qibla direction was at stake. Claims were made that al-Ḥajjāj not only tampered with the text of the Qur’ān, but that he made major changes in it, by deleting large portions of it. While this chapter is not the place to tackle this subject, it does indicate that Islam was in turmoil at this time, and that al-Ṭabarī writing some 160 years later does not delve into it at all. Perhaps the Abbasid rulers who ruled in al-Ṭabarī’s day (240 AH or 854 CE)) refused to acknowledge how tumultuous these early years really were.

- 109 AH (727 CE): The earliest “Mecca” mosque built in Banbhor Pakistan facing Saudi Arabia.
- 115 AH (733 CE): New mosques in Umayyad Spain now pointed their Qibla in a line parallel to a line drawn between Petra and Mecca.
- 122 AH (740 CE): The Continuatio Byzantia Arabica mentions Mecca. This is the first instance of the name Mecca appearing in ancient literature outside of Islamic sources.
- 128 AH (746 CE): Another earthquake destroyed buildings in Syria and Jordan. All hope of returning the Black Stone to the Holy City is lost.
- 132 AH (749): The Abbāsids now rule from Iraq. Since Kūfa had adopted the Mecca Qibla very early on, all mosques now faced Mecca in Saudi Arabia and all Qur’āns written in the Kūfic script contain verses in sūra 2 referring to the change of the Qibla.

So using the above timeline, I would like to suggest that the Black Stone was moved somewhere between years 65 and 66 AH (684-685 CE), a time when the Muslim world was reeling under wars, rebellions and theological upheaval. The historical record coincides with the archeological records except for several

175 Hoyland, 1997, page 500, Leo III, (717-741 CE)

176 Hoyland, 1997, page 501

points. They fail to mention the moving of the Black Stone to Mecca in Saudi Arabia, and they refer to both Petra and Mecca with the same name: that of Mecca. By the time of al-Ṭabari's writing, these two locations had merged into one in the minds of the Abbasid Muslims.

If the Black Stone was moved to Saudi Arabia around 65 AH (684 CE), then when was the Ka'ba structure and the rest of Masjid al-Ḥarām built around it? To answer this question we once again need to turn to archeology. In the region of Ḥuma al-Numūr, north west of Ṭā'if (about 60 km from Mecca) over 60 early Islamic inscriptions have been found.¹⁷⁷ These include verses of the Qur'ān, supplications asking for forgiveness, mercy, martyrdom and paradise; trust and belief in the Prophet Muḥammad and the sending of prayers and blessings upon him. One inscription stands out as it contains the full shahādah and also mention of the building of Masjid al-Ḥarām that year. The inscription is clearly dated as 78 AH (697 CE).

This inscription clearly uses the word “banā or built. It also clearly claims that it was written *in year 78, the year that Masjid al-Ḥarām was constructed*. There can be no doubt which location this is speaking of, as it is only 60 km from Mecca and over a thousand kilometers from Petra.

Over in Petra, Caliph ‘Abd al-Malik b. Marwān started the reconstruction of al-Masjid al-Ḥarām in the year 75 AH (694 CE) after it sustained damage by the trebuchet of al-Ḥajjāj during his siege of the Holy City. So at this point two Masjid al-Ḥarāms must have existed, one in the correct location, and the other with the Black Stone in Saudi. How did this dilemma get solved? It appears that later earthquakes destroyed the Ka'ba in Petra, and flooding washed away much of it, until only the foundation and a meter of stone were left.

Addendum

Questions that readers and fellow students of history have raised with me

1. Was the Qibla towards a place or an object?

The Qur'ān only ever mentions the location of Masjid al-Ḥarām.¹⁷⁸ No other place or object is attached to the Qibla. The Qur'ān never mentions the Black Stone. In the film *The Sacred City* I suggest that Petra was the location of Masjid al-Ḥarām as it was the focus of the original Qibla, and it fits all of the descriptions of the original Masjid al-Ḥarām.

2. Was the Qibla from human origins or divine? Was it revealed by a prophet or a long held tradition?

The only specific mention of a Qibla is from the Qur'ān. While there is some mention of the practice of

177 Hoyland, “The Content And Context Of Early Arabic Inscriptions”, *Jerusalem Studies In Arabic And Islam*, 1997, Volume 21, Number 3, pp. 77-102; idem., *Seeing Islam As Others Saw It: A Survey And Evaluation Of Christian, Jewish And Zoroastrian Writings On Early Islam*, 1997, Studies in Late Antiquity and Early Islam - 13, The Darwin Press, Inc.: Princeton (NJ), pp. 687-703; idem., “New Documentary Texts And The Early Islamic State”, *Bulletin Of The School Of Oriental And African Studies*, 2006, Volume 69, Number 3, pp. 395-416. Also see: <http://www.islamic-awareness.org/History/Islam/Inscriptions/ham1.html> Retrieved 9 Feb 2017

178 Quran 2:127

Jews praying towards Jerusalem,¹⁷⁹ there are no recorded directives from God to pray in any specific direction except in Islam. The Arab pilgrimage to Petra was established many centuries before the founding of Islam. This is covered in *Qur'ānic Geography*.

3. What did the original Ka'ba in Petra look like?

On page 264 I investigate the possible Islamic Holy Places in the ancient city of Petra. For instance I believe you can see the foundation of the original Ka'ba in Petra at: 30°19'47.34"N 35°26'24.91"E. This cube stands before the temple of Dushara but has been identified as a ruined altar in the past. Since altars usually stood on a raised platform as part of the temple structure, this structure seems to be an anomaly. From my research, I believe that after the earthquake of 519 CE, 19 years before Muḥammad was born in Petra, all of the idols and relics were dug from the ruins of temples and churches and brought into the wide open courtyard of the Dushara Temple to be preserved. These 360 items were scattered around the large courtyard, and people could walk around the courtyard to pray in front of whatever holy idol or relic they chose. In time, people walked in a circular motion to pass in front of all of the idols and relics. The area in front of the temple of Dushara could have accommodated 360 items which would require a very large space. The Islamic records tell us that during the rebuilding of the sacred area and the adding of a roof structure of some sort (which later burned) that Muḥammad made his first appearance as someone chosen of God to place the Black Stone into the new niche.¹⁸⁰ Since that action began his prophet-hood, he could never remove it, even when he destroyed the other 359 idols. When Abdallāh ibn al-Zubayr removed the Black Stone from the Ka'ba, some people may have sighed in relief that the idol was finally removed from the sacred precincts. Later, the Qarmations reacted strongly to the Black Stone in Mecca, seeing it as an idol.

5. Who has the authority to move the Qibla?

The Qibla was instituted by the prophet Muḥammad through a direct order given to him, as recorded in the Qur'ān.¹⁸¹ Prayer must be made to Masjid al-Ḥarām, which the archeological evidence now reveals was located in Petra. Accordingly, all of the mosques of the first one hundred years of Islamic history point to Petra, so we can conclude that the prophet Muḥammad prayed to Masjid al-Ḥarām in Petra as did Abu Bakr, Omar, 'Uthman and Ali. The Qiblas established by al-Ḥajjāj and Ibn al-Zubayr were in rebellion to what the Qur'ān commands.

6. Why didn't anyone object to the moving of the Qibla to Mecca?

The fact is, they did! But the records come to us through the Abbāsīd rulers and their historians who had adopted the Mecca Qibla, so we must try and read between the lines to understand what was happening. By 277 AH (890 CE), dissatisfaction with the Abbāsīd rule grew in central Arabia, giving room for Shī'a Ismā'īli groups to propagate their teachings. They taught that the pilgrimage to Mecca was simply a superstition, and so they desired to build a Muslim society based on reason and equality. The Muslim world

179 For example: Daniel 6:10

180 Ṭabarī Vol 6., pages 56 - 59

181 Qur'ān 2:127

at that time was economically successful and wealthy, based largely on a huge slave-based economy.¹⁸²

In 899 CE (286 AH), the Qarmatians took control of Bahrain's capital Hajar, and also al-Hasa which became the capital of their state. The Qarmatians tried to stop Muslims from going to Mecca for the pilgrimage. They so vehemently opposed pilgrimages to Mecca that in 906 CE (293 AH), they began ambushing caravans and massacring pilgrims. Then in 927 CE (315 AH), they sacked Mecca, desecrated the Well of Zamzam with corpses of hajj pilgrims, and then removed the Black Stone and took it to Al-Hasa. In 931 CE (316 AH), the Qarmatians chose a new Mahdī-Caliph who set about abolishing Shari'a law, and changing the Qibla direction yet again.

Since the old Qibla was lost, they instituted a new Qibla that required the faithful to always pray towards fire. When the new Mahdī-Caliph began to curse Muḥammad and the other prophets, instituting a number of strange new ceremonies as well as executing some of the nobles, the Qarmatians decided their new Mahdī-Caliph was an imposter and they killed him.

With the Black Stone in captivity and the pilgrimages halted, Islam was in crisis. In 952 CE (340 AH) the Abbāsids agreed to pay a huge sum for the return of the Black Stone. When they received it back, it had been broken into several pieces. When it was returned, it was wrapped in a sack and thrown into the Friday Mosque of Kūfa accompanied by a note saying "By command we took it, and by command we have brought it back." Its abduction and removal caused further damage, breaking the stone into seven pieces.

¹⁸³

After a defeat at the hands of the Abbāsids in 976 CE (365 AH), the Qarmatians focused on internal issues and slowly their status was reduced to that of a local power. According to the Arabist & historian Curtis Larsen, this had important repercussions for the Qarmāṭians' ability to extract tribute from the region and slowly their finances failed.¹⁸⁴ Eventually the Qarmatians were expelled from Iraq by the Buyids (985 CE) and they faded from history.¹⁸⁵

¹⁸² Nakash, 2006

¹⁸³ Glasse, 2001, page 245

¹⁸⁴ Larsen, 1984, page 65

¹⁸⁵ Busse, 1975 and Muir, 1915, pages 558-562

Supporting Evidence that Petra was the Original Holy City of Mecca

The following two chapters contain arguments that the original Holy City of Islam was that of Petra. The first chapter contained archeological evidence based on mosque Qiblas from the first two hundred years of Islamic history. Now we turn to supporting evidence. By themselves, these arguments provide only circumstantial evidence, but when considered along with the stronger evidence of bricks and mortar that can be measured and dated, they provide what many have described as overwhelming proof that Petra is indeed the original Holy City of Islam, the birthplace of Muḥammad, and the focus of the Islamic prayers and pilgrimages for the first hundred years of Islam.

1. The original Holy City had clay and loam

Al-Ṭabarī relates the story of how 'Abdallāh, the father of Muḥammad visited a wife whom he had in addition to Aminah.¹⁸⁶ He had been working in the field and traces of soil were still on him. When he invited her to lie with him she made him wait because of this, so he went out, performed his ablutions, washed off the clay and went to Aminah's quarters instead. In this way the prophet Muḥammad was conceived. R.B. Serjeant, in his comments on Alfred Guillaume's translation of the same story in the *Sirah*,¹⁸⁷ explains that the Arabic word used here for soil means a cultivated plot or field, and puzzles that there is little cultivatable land near Mecca.¹⁸⁸

While there is only sand and rock at the current Mecca site with no evidence of ancient cultivation, the city of Petra had fields and soil in the various places. There were private and public gardens, and running water brought to the city through five aqueducts with an overall length of over 55,000 meters.¹⁸⁹ Archeologists have described fruit trees, grapes and gardens in ancient Petra. Even today there is cultivated land between Petra and al-Baiḍhā or Little Petra which is 5 km away. Researchers have discovered that only one hundred years ago the hills around Petra were covered with several indigenous tree species including Kermes oak, Phoenician juniper, Mt. Atlas pistachio, and carob trees.¹⁹⁰

In addition to this, beside al-Baiḍhā is a Neolithic village where archeologist Diana Kirkbride-Helbaek excavated from 1958 to 1967 and again in 1983.¹⁹¹ During her excavation Dr. Kirkbride-Helbaek discovered old granaries and hypothesized that it was at al-Baiḍhā or nearby villages like this where grains were first domesticated, demonstrating that plots of cultivation existed in the Petra area many centuries before the time of Muḥammad. When reading the descriptions of trees, grasses, glens, fields and soil near the Holy City, would Petra not be a better fit than the barren wadi bed of present day Mecca?

186 Ṭabarī, Vol. 6, pg 6

187 Bulletin of the School of Oriental and African Studies, 21, 1958, pages 1-14

188 See Guillaume, Ishāq, pg 69 for the parallel account, 2006

189 MENAFN, Jordan Times, 20 May 2017, Swiss archaeologist examines ancient Nabateans' water technology

190 <http://www.petrationaltrust.org/UI/ShowContent.aspx?ContentId=57>

191 Byrd, 2007



Left: A pistachio tree in the center of Petra beside the Nymphaeum is claimed to be over 450 years old.¹⁹²

2. The Holy City is called Bacca in Qur'ān (3:96)

“Behold, the first Sanctuary appointed for mankind was that at Bakka, a blessed place, a guidance to the peoples.”¹⁹³

Muslims have long associated the word “bacca” (or Bakka) with the city of Mecca. Bacca is an ancient Semitic word that means to weep or lament. If a location was assigned the title “Bacca” it would mean the place of bacca. For example The *Valley of Bacca* means the *Valley of Weeping* or the *Valley of Tears*. This is usually because some calamity happened there that caused people to weep.

By associating Mecca with Bacca, Islamic theologians tell us that the original location of the Holy City was a place of calamity. Some Islamic writers explain this by claiming an old legend related to us by several early writers: “Any king who came to profane its sanctity died on the spot. It is said that it was called Bakka because it used to break the necks of tyrants when they introduced innovations therein.”¹⁹⁴ Ibn Hishām adds: Now in the time of paganism, Mecca did not tolerate injustice and wrong within its borders and if anyone did wrong therein it expelled him; therefore it was called ‘the Scorcher’, (*al-Nassa*) and any kind who came to profane its sanctity died on the spot. It is said that it was called Bakka because it used to break (From the verb *bakka*, *he broke*) the necks of tyrants when they introduced innovations therein.¹⁹⁵ However, there is no mention of Mecca or Becca by any of the surrounding nations’ histories in this part of Arabia.¹⁹⁶

In another casem the Islamic writers relate “*Bakka to the Arabic word tabakku or “crowded.” They tell us this*

192 *Petra Archeological Park*, <http://www.petrapark.com>

193 Qur'ān 3:96

194 Guillaume, Ishāq, 2006, page 47

195 Ibn Hishām 24

196 See #18 in this chapter, the lack of evidence from north and south of Mecca

story: *Ibn Hishām adds to this: “Abū ’Ubayda told me that Bakka is the name of the valley of Mecca because it is thickly populated (tabakku) and quoted to me the verse: When great heat overtakes him who waters his camels with yours, leave him alone until his camels are rounded up.” The problem with this concept is that Mecca was very scarcely populated until 800 CE.*¹⁹⁷

The Qur’ān itself hints at a more likely explanation, by associating Becca with Hagar weeping over Ishmael in Qur’ān 2:124-127; (see Genesis 21:14 for the Biblical story). By associating this story with Becca (and ultimately Mecca), we can bring many different ideas coming together together to better understand why the Becca valley was sacred from ancient times. Since the valley of Becca is synonymous with the location of Masjid al-Ḥarām, we should be able to compile a list of descriptions and events that took place in this valley and decide if they could fit the valley of Petra, which is known as Seir in the Bible.

1. This location was recognized as a named location from very early times.¹⁹⁸
2. Abraham and his family (Lot, Hagar and Ishmael) lived near this valley.¹⁹⁹ *Behold, the first temple (house) ever set up for mankind was indeed the one at Bakka: rich in blessing, and a source of guidance unto all the world. Remember! We revealed the site of the Sacred House to Abraham ...*²⁰⁰ Note: Abraham’s nephew Lot moved to near Zoar, 80 km from Petra²⁰¹. Abraham could see the Zoar valley from where he lived.
3. Abraham and Ishmael built a temple in the Becca sanctuary area.²⁰²
4. The two mountains on either side of the valley have names: Marwa and Ṣafa. These mountains are symbols set up by God and pilgrims should stride to and fro between them in worship.²⁰³
5. Pilgrims should also climb and descend from “Arafat mountain” and end up celebrating the praises of God at Masjid al-Ḥarām.²⁰⁴ (Note: This makes three major mountains mentioned)
6. Abraham settled some of his people near the Sacred House.²⁰⁵
7. Hagar was sent to this valley when expelled from Abraham. There she wept, possibly giving the valley it’s name.

197 Guillaume, Ishāq, 2006, page 47

198 Qur’ān 2:124; Qur’ān 3:96; Genesis 14:6, 32:3,14-16; 36:8-30

199 Qur’ān 2:124-127, Genesis 13:10-12

200 Qur’ān 3:96-97

201 Genesis 19:27

202 Qur’ān 2:125-127

203 Qur’ān 2:158

204 Qur’ān 2:197

205 Qur’ān 14:35-37

From the Bible:

And Abraham rose up early in the morning, and took bread, and a bottle of water, and gave it unto Hagar, putting it on her shoulder, and the child, and sent her away: and she departed, and wandered in the wilderness ... And the water was spent in the bottle, and she cast the child under one of the shrubs. And she went, and sat her down over against him a good way off, as it were a bowshot: for she said, Let me not see the death of the child. And she sat over against him, and lift up her voice, and wept. And God heard the voice of the lad; and the angel of God called to Hagar out of heaven, and said unto her, What aileth thee, Hagar? fear not; for God hath heard the voice of the lad where he is. Arise, lift up the lad, and hold him in thine hand; for I will make him a great nation. And God opened her eyes, and she saw a well of water; and she went, and filled the bottle with water, and gave the lad drink.²⁰⁶

From the Hadith:

When the water in the water-skin had all been used up, she (Hagar) became thirsty and her child also became thirsty. She started looking at him (i.e. Ishmael) tossing in agony. She left him, for she could not endure looking at him, and found that the mountain of Ṣafa was the nearest mountain to her on that land. She stood on it and started looking at the valley keenly so that she might see somebody, but she could not see anybody. Then she descended from Ṣafa and when she reached the valley, she tucked up her robe and ran in the valley like a person in distress and trouble, till she crossed the valley and reached the Marwa mountain where she stood and started looking, expecting to see somebody, but she could not see anybody. She repeated that (running between Ṣafa and Marwa) seven times.²⁰⁷

7. Ṣafa and Marwa were tall mountains, that needed “climbing.”

Climbing Ṣafa and Marwah and making supplications for one’s material and spiritual well being and welfare is encouraged. During the supplications one should face the Ka’ba. It is well known that the Prophet (peace be upon him) went through the Ṣafa Gate, and on approaching Ṣafa he recited the Qur’ānic verse 2.158.²⁰⁸

When the verse: “And warn your tribe of near kindred.”²⁰⁹ was revealed, Allāh’s Apostle went out, and when he had ascended al-Ṣafa mountain, he shouted, “O Sabahah!” The people said, “Who is that?” “Then they gathered around him, whereupon he said, “Do you see? If I inform you that cavalrymen are proceeding up the side of this mountain, will you believe me?” They said, “We have never heard you telling a lie.” Then he said, “I am a plain warner to you of a coming severe punishment.” Abū Lahab said, “May you perish! You gathered us only for this reason?” Then Abū Lahab went away. So the Sūrat: “Perish the hands of Abū Lahab!” was revealed.²¹⁰

206 Genesis 21:14-19

207 Ṣaḥīḥ al-Bukhārī Ḥadīth 4:583; 5:85

208 Fiqh us-Sannah 5:90

209 Qur’ān 26.214

210 Ṣaḥīḥ al-Bukhārī Ḥadīth 6:495

*Şafa and Marwah as they used to do in the days of Jahiliyya while two idols were set on top of Şafa and Marwah.*²¹¹

8. The trip between Şafa and Marwa was so strenuous that some people could not do the seven crossings in one day:

The author of Al-Mughni observes: “*Aḥmad says there is no harm in delaying the Sa’i after performing ṭawāf until one is rested, or postponing it until evening. ‘Aṭa’ and Al-Ḥasan also see no harm in someone making ṭawāf early in the day and postponing the Sa’i between Şafa and Marwah until evening. Al-Qāsim and Sa’id bin Jubair followed this, because the continuity of Sa’i is, as such, not a condition, much less the continuity of ṭawāf and Sa’i. Sa’id bin Maṣṣūr reported that Saudah, the wife of ‘Urwah bin al-Zubair performed Sa in between Şafa and Marwah and because she was a big and heavy woman, she completed it in three days.* (Fiqh us-Sunnah 5:88a)

9. Idols were set up on the two mountains.

*‘Amr set up an image on al-Şafa called Nahlik Mujawid al-Rih and one on al-Marwa called Mut’im al-Tayr.*²¹²

How does this compare to Mecca in Saudi Arabia today? Şafa and Marwah are two large rocks housed right inside the mosque building in Mecca. There is no way to climb these rocks, so pilgrims no longer climb them. There is no evidence of ancient gates and no evidence an idol was ever set up on them. But today in Petra, the two mountains have evidence of idol platforms, gates, processional ways going up the side, and a road leading directly from one mountain to another for ṭawāf between the two mountains. Plus there is a rainwater passage running beside this road which is described by Bukhārī: *When the Prophet performed the ṭawāf of the Ka’ba, he did Ramal during the first three rounds and in the last four rounds he used to walk, and while doing ṭawāf between Şafa and Marwa, he used to run in the midst of the rain water passage.*²¹³

From all of this, I believe that the valley of Petra can favorably be compared to the Qur’ānic valley of Bekka (also known as Mecca) where Hagar was weeping, as well as to the Biblical story Abraham, Ishmael and Hagar. Since Abraham wandered throughout the mountains, from Israel down to Egypt, it would not come as a surprise that Abraham and Ishmael may have stopped in the Petra Valley and built some sort of altar or structure there to worship the Lord. It would not surprise us if this is actually the valley that Hagar fled with young Ishmael. The Qur’ānic accounts fit the Petra valley far better than the barren Mecca valley in Saudi Arabia.

211 Fiqh us-Sunnah 5:86

212 Ishāq 56, pg 30

213 Şaḥīḥ Al Bukhārī Ḥadīth 2:685

3. Earthquakes may give the valley its name

While there is no evidence for any substantial tragedies occurring at the Mecca site in Saudi Arabia before 800 CE, there are a number of tragic events that took place at Petra including the following major earthquakes:

363 CE – Recorded by Bishop Cyril of Jerusalem²¹⁴

551 CE – Darawchah, Sbeinati, Margottini, & Paolini, 2000²¹⁵

713 CE – Recorded by Al-Ṭabarī 23²¹⁶

There is archeological evidence that these earthquakes caused a great deal of damage. The greatest damage was probably inflicted in 713 CE when not only was Petra affected, but the entire Mediterranean seacoast. Even the mosque in Jericho was destroyed, so much so that it was never rebuilt.²¹⁷ It may have been that in 713 CE, Petra was finally abandoned since no records of Petra exist after this date.

Since ancient cities were built of stacked rocks and timbers, earthquakes brought massive destruction and the death of many people. This massive destruction over so many years would certainly have caused the nick-name “Valley of Weeping” to have continued use over the centuries.



Left: Petra is littered with fallen columns. Right: In 1962 archeologists began reconstruction work in Petra, lifting columns and walls back into place. In many cases, they could easily tell how to do the reconstruction as the columns and walls lay completely on their sides.²¹⁸



4. The Well of Zamzam

Every Muslim accepts it as fact that the Well of Zamzam is located beside the Ka’ba, and that this well is located in Mecca, Saudi Arabia. Many Muslims believe that this well is sacred, and many healing or health improving properties are given to the water taken from this well. During my research, I was struck

214 Brock, 1977, A Letter attributed to Cyril of Jerusalem on the Rebuilding of the Temple

215 Russell, 1985, *Earthquake Chronology of Palestine and Northwest Arabia from 2nd - 8th Cen. CE*

216 Ṭabarī Vol 23. page 204

217 Nur & Burgess, 2008, *Apocalypse: Earthquakes, Archaeology, and the Wrath of God*

218 The Illustrated London News, March 31, 1962, Page 502/503, Archeological Section no 2085, Used by permission.

with the name z-m-z-m. I searched through my personal electronic database of ancient manuscripts and writings and was surprised to have only one result. It was from the Bible in Deuteronomy 2:20. The Zam-zummim were renowned in ancient times as giants (tall people) who lived in the land of Seir, Edom and Ammon. The Edomites “overthrew them, and dwelt in their stead.” It would seem to me that if one was looking for the well of Zamzam they would need to look in the land of Seir or Edom in the mountains of Petra. Other than this, I found no other reference to z-m-z-m.

*Al Wāqidī mentions that ‘Umar ibn Ṣālih related to him on the authority of Nāfi’, mawlā of the Banū Makhzūm that Khālīd bin Abdallāh said in a sermon that the original water of Zamzam was salty, and that water from another well used to be transported and placed in leather containers beside Zamzam, as it was superior to the water of Zamzam.*²¹⁹

It is interesting to note that the Arabic word for well and cistern are the same. So while most Muslims believe Zamzam was a well, there is also a possibility that it was a cistern, with large doors across the entrance. Al-Ṭabarī tells us that in 66 AH men “broke the wooden bolts (a’wdd) of Zamzam, went inside.”²²⁰ It seems that Zamaam was either in a building, or else it was a cistern with a doorway across the entrance. Abū Daoud²²¹ records how the Arabs swept out Zamzam and removed the snakes, which makes it sound more like a cistern than a well. Interestingly enough, Petra is known as a city of cisterns.

The Zamzam well in Mecca today is also called the Well of Ishmael.²²² It is 35 meters deep and is marked by an elegant dome. The water is considered health-giving, and pilgrims collect it in bottles to bring back home to their own countries. Sometimes a pilgrim tries to dip his or her future burial clothes in the waters of Zamzam. Muslim tradition holds that the well of Zamzam was opened by the angel Gabriel to save Hagar and her son Ishmael from dying of thirst when they were out in the desert.

The story of Zamzam being associated with Hagar fits the Petra valley rather than Mecca in Saudi Arabia. The Bible tells us that Abraham grazed his sheep on the hills overlooking Sodom and Gomorah.²²³ While most Bible scholars imagine that this was on the western side of the Araba valley, there is no reason why Abraham could not have also grazed his sheep on the eastern side. If this is the case, then the Petra valley would have been a natural place for the sons of Ishmael to live along side of their cousins the Edomites.²²⁴

5. The Qur’ān’s attention on northern Arabia

I presented arguments in my book Qur’ānic Geography that the people of ‘Ad, Thamud and Midian, were all north Arabian civilizations. If you want to follow this argument in detail, please refer to Qur’ānic Geography.

219 Ṭabarī Vol. 23 page 147-148 and Ibn al-Athir

220 Ṭabarī Vol. 21, page 61

221 Sunan Abū Daoud 2507

222 Ibn Hishām 24

223 Bible Genesis 21

224 Qur’ānic Geography, page 224, 229, 236, 308-311

But briefly, I argue that the people of 'Ad (Edomites) and the people of Thamud (Nabataeans) all dwelt in northern Arabia in the Petra region. The tribes that descended from Ishmael also settled in northern Arabia. Since all of the geographical references in the Qur'ān are from northern Arabia, it is natural to conclude that the Qur'ān was written to people who had a north Arabian perspective. In other words, when the prophet spoke to the "Meccans" about 'Ad, he simply had to point to the remains that they left behind. In much the same way, the people Muḥammad was speaking to living in the shadow of the great Thamudic monuments. These references were not incidental.

In the minds of Muḥammad's audience, there had been three times in the past when Arabia was great. The first time was when it was united under the tribal confederacy led by Edom and was known as 'Ad. (2nd millennium BCE) Muḥammad speaks of 'Ad only when he addresses the people in the Holy City (Petra). The second time Arabia rose to prominence was when the tribes of Arabia united under the leadership of the Midianites who oppressed and raided the settled peoples to the north. (end of 12 century BCE) Muḥammad only speaks of the land of Midian when he addresses the people in the city of Medina which was in the heartland of Midian. The third and most significant time the Arabian Peninsula united was under the leadership of the Thamudic people who established what we know today as the Nabataean empire. (200 BCE - 200 CE) This empire controlled not only most of Arabia, but also lands all the way to Damascus in the north, and the entire Negev to the west. It was not by chance that Muḥammad referred to these people. They were significant people in the minds of his listeners. This leads us to believe that Muḥammad was addressing an audience in North Arabia, the homeland of Ishmael, 'Ad, Thamud, and Midian.

6. The Holy City's high and low side

The Hadith literature contains many references to the high and low side in "Mecca." as if the city was half way up a hill or incline. For instance: When the Prophet came to Mecca, he entered from its higher side and left from its lower side.²²⁵ There are many more mentions of the high side and low side between 2:645 and 2:657.

We ('Ā'isha speaking) set out with the Prophet with the intention of performing ḥajj only. The Prophet reached Mecca and performed ṭawāf of the Ka'ba and between Ṣafa and Marwa and did not finish the Iḥrām, because he had the Hādi with him. His companions and his wives performed ṭawāf (of the Ka'ba and between Ṣafa and Marwa), and those who had no Hādi with them finished their Iḥrām. I got the menses and performed all the ceremonies of ḥajj. So, when the Night of Ḥasba (night of departure) came, I said, "O Allāh's Apostle! All your companions are returning with ḥajj and 'umra except me." He asked me, "Didn't you perform ṭawāf of the Ka'ba ('umra) when you reached Mecca?" I said, "No." He said, "Go to Tan'im with your brother 'Abdur-Raḥmān, and assume Iḥrām for 'umra and I will wait for you at such and such a place." So I went with 'Abdur-Raḥmān to Tan'im and assumed Iḥrām for 'umra. Then Ṣafiya bint Huyay got menses. The Prophet said, " 'Aqra Ḥalqa! You will detain us! Didn't you perform ṭawāf-al-ifāda on the day of nahr (slaughtering)?" She said, "Yes, I did." He said, "Then there is no harm, depart." So I met the Prophet when he was ascending the heights towards Mecca and I was descending, or vice-versa.²²⁶

225 Ṣaḥīḥ Al-Bukhārī Ḥadīth 2:647

226 Ṣaḥīḥ Al-Bukhārī Ḥadīth 2:815

When considering the topography around Mecca, the phrase “ascending the heights towards Mecca” does not make sense. This term however could apply to the Petra region where the city has the Araba Valley below it, and the Edomite hills above it. In essence Petra is half way up the escarpment, with a clear higher and lower side to the city.

*During the year of the conquest (of Mecca), the Prophet entered Mecca through its upper part through Kada.*²²⁷

*Then she said, “O Allāh’s Apostle! Your companions are returning with the reward of both ḥajj and ‘umra, while I am returning with (the reward of) ḥajj only.” He said to her, “Go, and let ‘Abdur-Raḥmān (i.e. your brother) make you sit behind him (on the animal).” So, he ordered ‘Abdur-Raḥmān to let her perform ‘umra from Al-Tan’im. Then the Prophet waited for her at the higher region of Mecca till she returned.*²²⁸

*Allāh’s apostle came to Mecca through its higher region on the day of the conquest (of Mecca) riding his she-camel on which Usāma was riding behind him.*²²⁹

*Now al-Khaṭṭāb had so harassed Zayd that he forced him to withdraw to the upper part of Mecca, and he stopped in the mountain of Ḥira facing the town.*²³⁰ It is interesting to note that Mount Ḥira was located in the “upper part of Mecca.” However, today Mount Ḥira (Nour) is located behind Jebal Marwān and Khandima.

Today people sometimes call the area around Mecca a valley, but in actuality it is a large open area, with low rocky mountains rising out of the sand. It is my belief that the early description of Mecca and its mountains do not fit Mecca today, which is flat and surrounded by barren rocks rising from the desert floor. The terms higher and lower part of the Holy City could easily be applied to Petra, which was split apart by a colonnaded road in the middle. The higher part of the city was to the north and the lower part of the city to the south. In the north is a large mountain with an impressive cave filled with baetyls that could easily fit the description of Ḥira.

7. The Holy City could be entered and exited by a crack in the rock or a narrow mountain path.

Allāh’s Apostle used to enter Mecca from the high thaniya and used to leave Mecca from the low thaniya. The thaniya is a narrow mountain pass. *The Prophet went on advancing till he reached the thaniya through which one would go to them (i.e. people of Quraish).*²³¹

Ibn ‘Umar used to spend the night at Dhū-Tuwa in between the two thaniyas and then he would enter Mecca through the thaniya which is at the higher region of Mecca, and whenever he came to Mecca for ḥajj or ‘umra, he never made his she-camel kneel down except near the gate of the Masjid (Sacred Mosque) and then he would enter (it) and go to the Black (stone) Corner and start from there circumambulating the Ka’ba seven

227 Ṣaḥīḥ Al-Bukhārī Ḥadīth 5:586

228 Ṣaḥīḥ Al-Bukhārī Ḥadīth 4:227

229 Ṣaḥīḥ Al-Bukhārī Ḥadīth 4:231

230 Guillaume, Ishāq, G 148, pg 102

231 Ṣaḥīḥ al-Bukhārī Ḥadīth 3:891

*times: hastening in the first three rounds (Ramal) and walking in the last four. On finishing, he would offer two Rakat prayer and set out to perform ṭawāf between Ṣafa and Marwa before returning to his dwelling place. On returning (to Medina) from ḥajj or 'umra, he used to make his camel kneel down at Al-Batha which is at Dhū-al- Ḥulīfa, the place where the Prophet used to make his camel kneel down.*²³²



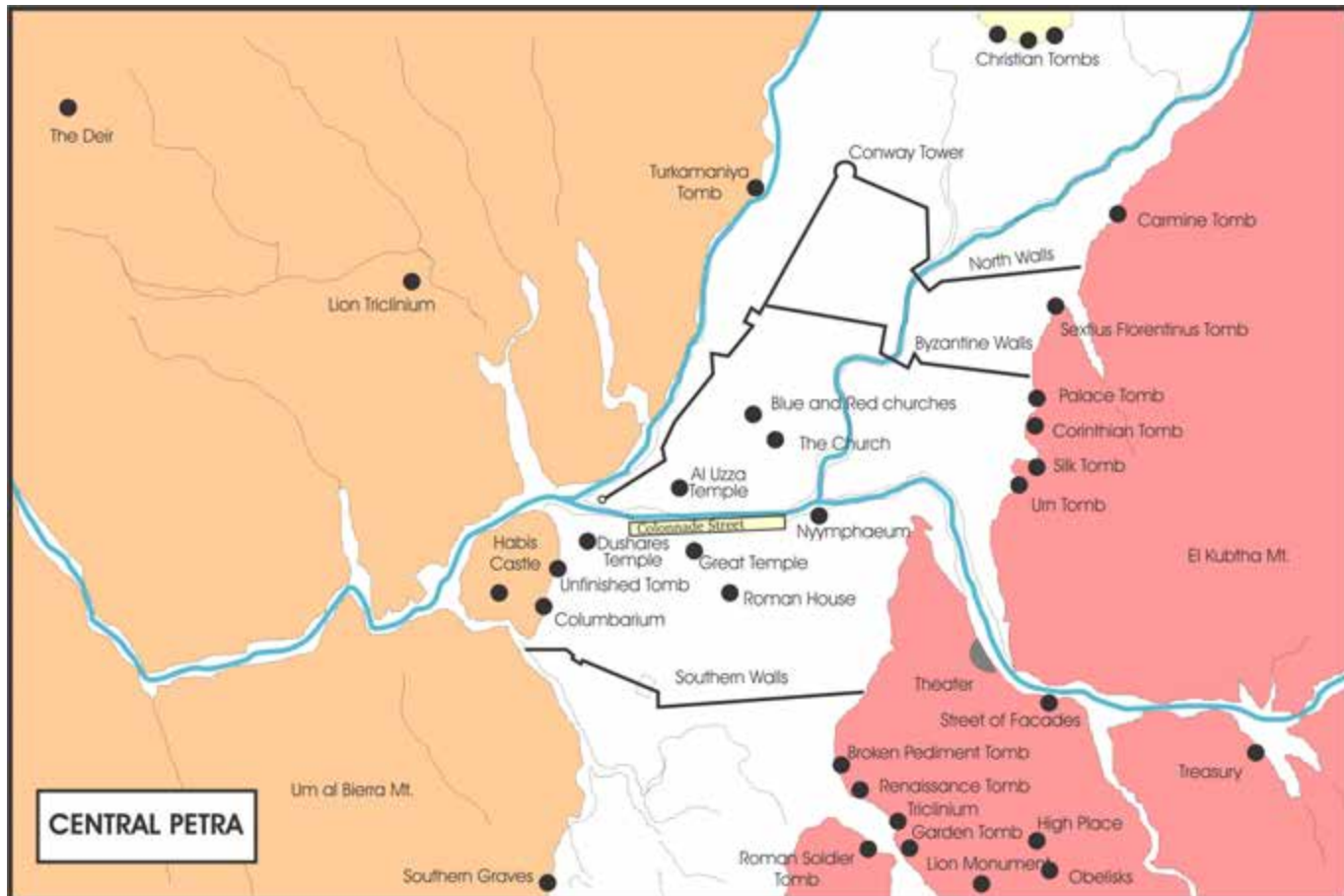
Left: The author made over 60 trips into Petra between 1979 and 2009 examining all parts of the city and much of surrounding area. Here he admires the thaniya walls in Petra, now called the Siq. Note the water channel to the left of the path. The mountain here towers above the thaniya floor.

There are four ways into the Petra basin. Since Petra is in a valley, one could enter from either end of the valley. One end is considerably higher than the other, hence the higher and lower side of Petra. However, there are two thaniya entrances that could be used. One of these is the famous siq that tourists pass through to enter the city. The other is on the far side of the colonnaded street and leads into the maze of canyons that eventually empty out into Wadi Araba. (See the city map on the following page)

232 Ṣaḥīḥ Al- Bukhārī Ḥadīth 2:820

8. The Holy City had walls

Ibn Ishāq records²³³ “...they surrounded him as he was at the side of one of the walls of Mecca...” There is no archeological evidence that the city of Mecca in Saudi Arabia ever had city walls. Yet here the Holy City is described as having walls. The city of Petra had two walls which crossed the valley protecting the high and low side of the city.



Above: The Petra valley showing walls and two thaniyas with a stream running across the valley from one thaniya to the other. The north side of the Colonnade Street is higher than the south side of the street. Between the thaniyas there is a stream bed.

9. The Holy City has a stream from one mountain to another mountain.

The ḥadīths tell us: *When the Prophet performed the ṭawāf of the Ka’ba, he did Ramal during the first three rounds and in the last four rounds he used to walk, and while doing ṭawāf between Ṣafa and Marwa, he used to run in the midst of the rain water passage.*²³⁴

As there is no natural water flow in Mecca today, this is a puzzling statement. Ṣafa and Marwa are described as “mountains” but today they are large rocks, housed right inside of the mosque complex. The description of running in a rain water passage between the two “mountains” of Marwa and Ṣafa do not fit what we see in Mecca. But in Petra, a stream ran directly from the mountain on one side of the valley to

²³³ Guillaume, Ishāq, 823, Pg 554

²³⁴ Ṣaḥīḥ Al Bukhārī Ḥadīth 2:685



the mountain on the other, through the thaniyas. Could these mountains have been Şafa and Marwa with a stream bed running between them?

Left: *One of the towers on the walls of Petra*

10. The Zumurrud

Abū al-Ḥusayn Aḥmad ibn Yaḥyā ibn Ishāq al-Rawandi was born in Marwarrudh Iraq, about the year 815 CE. As a young man, he joined the Mutazila of Baghdad and gained prominence among them. Around the age of forty, he became estranged from this group and formed close alliances with more traditional Muslims as well as non-Muslims such as Manichaeans, Jews and also Christians. He wrote against the Mutazila, and they reciprocated in kind.

While most Muslim theologians described him as an outspoken and dangerous heretic, some appear to present him in a neutral or even positive light. One of his more controversial books is known as Kitāb al-Zumurrud in which he mentions the miracles of the prophets such as Abraham, Moses, Jesus and Muḥammad. The text of the Zumurrud has not survived to our times, but we can surmise

his arguments from the writings of various later scholars who quoted him and argued against him.

The Zumurrud contained arguments both for and against the existence of prophets. This is stated explicitly in the Majalis Muayyadiyya of the Ismā'īlī al-Muayyad fi'l-Din al-Shirazi (1077 CE). The Majalis Muayyadiyya is the only source that contains relatively long citations of arguments against prophecy which are identified explicitly as belonging to the Zumurrud.²³⁵ While this is not a place to argue Muslim theology, it is important to notice that al-Rawandi argues that Muḥammad's night journey to Jerusalem was not a miracle because these two cities are close enough together so that a person could go from one to the other and back in one night.²³⁶ Muslim scholars have rejected the authenticity of the Zumurrud because of statements like this. Since they believed he was obviously wrong on this point, all of the materials in the Zumurrud are considered wrong. However, if the original Holy City of Islam was located at Petra, this description would be absolutely correct. The distance from Petra to Jerusalem is only 100 miles. Later historians would think he was speaking of Mecca in Saudi Arabia.

²³⁵ Kraus, 1994, *Gesammelte Aufsätze, Das Kitāb az-Zumurrud des Ibn al-Rawandi*

²³⁶ Stroumsa, 1994, *The blinding emerald: Ibn al-Rawandi's 'Kitāb al-Zumurrud*

While it would be a strenuous trip on a horse, one could indeed travel from one to the other and back in one day. Thus al-Rawandi's argument supports the idea that Islam's Holy City was in Petra, not in Mecca in Saudi Arabia. Years later, when Petra was forgotten, al-Rawandi's arguments seemed totally absurd. Everyone knew that Mecca was more than 760 miles from Jerusalem, and that the passage crossed some of the most barren and challenging deserts in the world.

11. The Petra region contains mention of gods found in the Qur'ān, hadiths and histories

Around 200 years after the founding of Islam, Abu-al-Mundhir Hishām ibn-Muḥammad ibn-al-Sa'ib ibn-Bishr al-Kalbi, better known as ibn-al-Kalbi (d. 206 AH/821-822 CE) wrote the book *Kitab al-Asnam*, or *The Book of Idols*. Al-Kalbi basically went through the literature available at his time, and made a list of the early pagan idols and what was known of them. This list of idols and some basic information about them is helpful in understanding the role that Petra played in early Islamic history.

Among the list of idols is Allat. It is interesting to note that a major temple to Allat is in Wadi Rum only



83 kilometers from Petra. A later Lion of Allat statue was built in Palmyra, which was a Nabataean/Arab trade city in Syria. Allat is mentioned in the Qur'ān in Sura 53:19–23. Allat was supposed to be worshiped in Ta'if as well as among the Nabataeans in general.²³⁷ There is no other existing physical evidence of Allat anywhere else in the Arabian Peninsula.²³⁸

Another god mentioned in early Islamic records is Dushara. (إدو الشرى)²³⁹ There are two known temples to Dushara, first in Madain Salih (al Hijr) in northern Saudi Arabia (a Nabataean sister city to Petra) and a temple in Petra itself. This temple (below) is the largest freestanding structure in Petra today.



Many gods in Petra were represented by a square cut block. In the beytel to the right we can see three gods within one larger god, corresponding to Sura 53:19-20 "Have you thought upon al-Lat, and al-Uzza and al Manat, the third, the other?" This beytel is found along the siq entrance to Petra.

²³⁷ *Book of Idols*, translated from Arabic version by Hishām Ibn al-Kalbi by Nabih Amin Faris, 1952

²³⁸ Wadi Rum Photo: Berthold Werner, GNU Free Documentation License

²³⁹ Ibn Hishām 78



Left: Three God blocks in a niche. Below Left: Al 'Uzza's temple is also found at Petra.²⁴⁰

The presence of one or two temples does not prove much, but when we take into consideration the qibla direction of all of the early mosques of Islam, it is striking that all of them point to the Petra region, the home of these gods.



12. Petra was the centre of a twice yearly pilgrimage

In order to understand the Arab pilgrimage to Petra, we need to understand something of the early Nabataean burial practices. Tourists often wonder if the majestically carved Nabataean facades in Petra were really tombs, or if they had some other function. The presence of

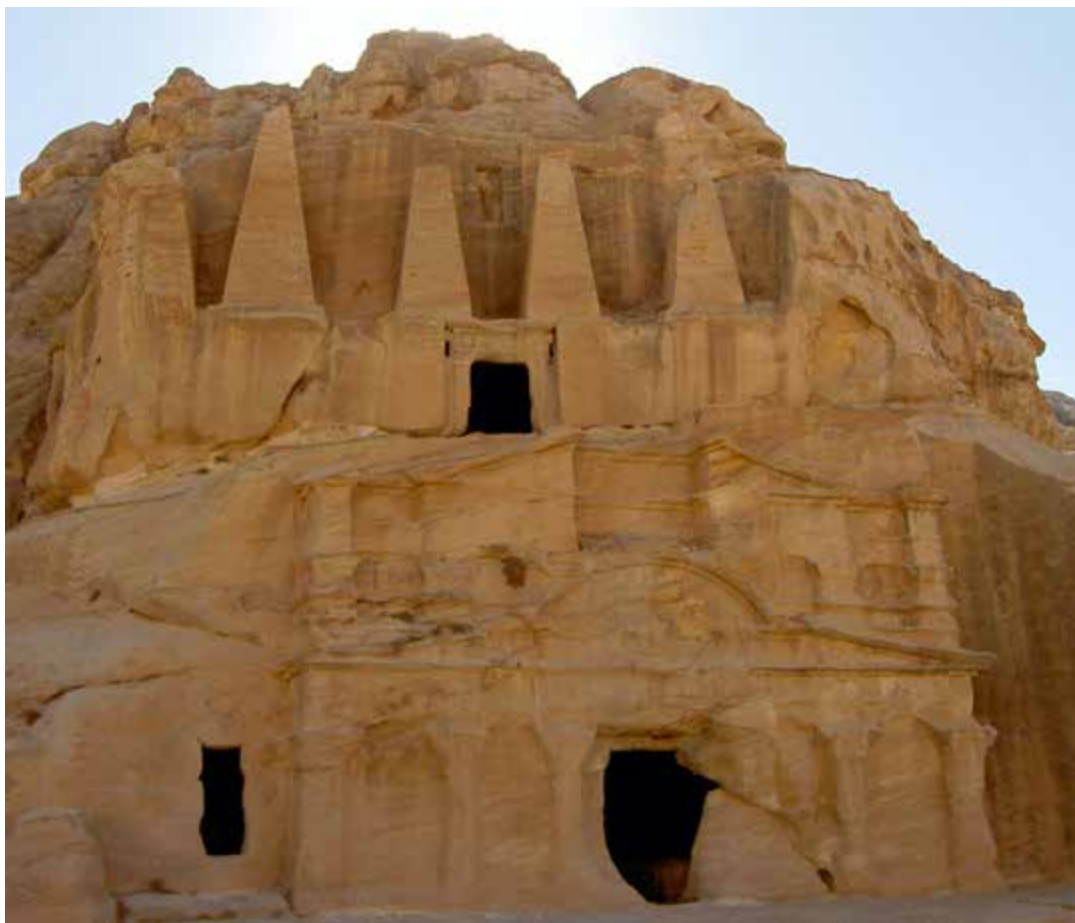
numerous dining halls among these monuments seems to point to something else.

One Nabataean inscription found at Egra on a tomb clearly states: *"This is the tomb made by Wshuh daughter of Bagrat, and by Qayamu and Mashkuya her daughters, of Teima, for each of them, and for Amirat and Usrat, and Elanat their sisters, daughters of Wshuh and for their clients."*

Bagrat and Teima were located quite some distance from Egra. From this, it appears that the dead were transported to these central burial places and not buried in their home villages.

There are over one thousand burial monuments in Petra and hundreds of others in the other smaller Nabataean burial cities. If these were for family and tribal units as is commonly thought, then the tombs in total could have contained tens of thousands of people.

240 Sura 53:19, and in the hadiths. eg. Bukhāri 4:276, 6:383, 8:314 and Ibn Hishām 17, 41.



Left The Obelisk tomb in Petra has a dining room directly under the tomb.

The city of Petra functioned as a religious center for twice-yearly festivals, and it also functioned as a burial city. It was complete with numerous temples, a festival theater, a nymphaeum, bathhouse, several sacred ways, monumental gates, many pools, wells and cisterns, as well as several other public buildings.

From ancient records, we can deduce that the Nabataean merchants traveled widely. So what would have happened to them if they died while they were in a distant county or somewhere in the deserts of Arabia? This is a key question in understanding the glue that held this merchant empire together. Some historians and archeologists believe that the Nabataeans practiced bone collection and buried the bones of their dead rather than complete bodies.²⁴¹

This system of burial was used by the Persians and also by some Jewish groups during the Second Temple period.²⁴² Bodies were placed on a high location on a rack so that once the flesh and organs had been stripped away by vultures or decomposed, the bones would fall through the rack into the carved-out space below. After the bones had dried, they would be collected and placed in a tomb.

Around the city of Petra, there are a number of high platforms that seem to be exposure platforms. If a Nabataean died while on a caravan journey, his body would have been exposed to the elements, the bones dried, and then transported back to one of the sacred burial sites. Those who died near the burial cities would have been exposed to the elements right in the city itself. There are a number of things that support this theory.

All around Petra are steps to the tops of hills with very little on top for markings except a rectangular hole

241 Negev, Avraham, *Nabatean Archaeology Today*, New York University Press 1986, pg 69

242 Patrich, Joseph, 1997, *The Formation of Nabataean Art*, Brill

cut in the rocks. Some of these are 1.5-2 meters long and .5 meters wide. A good example of one of these exposure platforms can be found across from the Obelisk Tomb on the way into Petra. Every person going into Petra walks past a large square rock which has steps cut into it on two sides leading to the top. On the top of the rock, a rectangular hole has been cut, and around the edges of the hole is a groove where the rack would have been placed. As the vultures stripped off the flesh, the bones would have fallen into



the hole underneath, and would have been retrieved later for burial in one of the nearby tombs.

Why did the Nabataeans use this form of burial? First, the use of communal graves for families and tribes makes sociological sense, as the Nabataean culture was structured on a tribal basis.

As larger families would have established their own particular tomb, members of that family would have wanted their bodies buried in their family tomb, even if they died hundreds or thousands of miles away. The practice of transporting bones rather than bodies would have been a practical way to deal with people who died while on journeys to distant places.²⁴³ This would explain the tombs that are present at Egra, Petra and Meda'in Šālīḥ in Saudi Arabia. Each of these centers was a stopping place along the caravan routes, and the bones of the dead could be buried there in style. This explains why inscriptions in Egra indicates that people living in Teyma were buried in Egra. It also explains why there are so many tombs in the Petra valley compared to the amount of space for the living.



The practice of bone collection would explain why the Nabataeans made pilgrimages to Petra. People would gather in the burial city to worship in the temples, participate in burial ceremonies, and to eat memorial feasts for the dead at the family tomb. The presence of scores of dining halls among the tombs indicates that eating in the presence of the dead ancestors was part of the early pilgrimage. However, with the coming of Christianity in the fourth century, the custom of bone collection and meals celebrating the dead declined.

The discovery of a zodiac dated to the second century CE leads us to believe that there were two Nabataean pilgrimages to Petra. Zodiacs were well known throughout the ancient world. They expressed a belief in the cyclical passage of time and the power of the stars and planets to affect earthly events.

243 Genesis 50:25 & Exodus 13:19

The Nabataean zodiac has many images similar to Roman zodiacs of the time. However, one of the symbols portrays Allat, the female goddess of fertility, with a lance or sword which can faintly be seen above her left shoulder. This may have symbolized an ancient festival which was celebrated by the Nabataeans and their nomadic neighbors when the birthing of lambs marked the spring season. It was a time when grazing was good and the earth was green from the spring rains. The Nabataean equivalent of Sagittarius is rendered as the bust of a jovial youth, possibly al-Qutbi, the god of learning and commerce. Capricorn is shown in the Nabataean panel as the damaged bust of a human figure rather than the traditional Roman fish/goat that was common throughout the Roman Empire. The remaining symbols of the Nabataean zodiac conform to their Roman counterparts, but they are enlivened with original touches of artistic creativity. However, by far the most significant difference in the Nabataean zodiac is the arrangement of the order of the houses within the zodiacal circle.



Al-Ṭabarī notes that during the days before Islam, there were two pilgrimages.²⁴⁴ The lesser was known as 'umrah. He notes that 'Abd al-Muttalib (Muḥammad's grandfather) performed 'umrah on one occasion. This was at a time when the forbidden sanctuary held many pagan idols, among them Hubal²⁴⁵ and Isaf and Na'ilah.²⁴⁶ The Qur'ān tells us that these pre-Islamic pagan pilgrimages were known respectively as ḥajj²⁴⁷ and 'umrah, commonly called the greater and lesser pilgrimage.

From ancient times, the Arabian pilgrimage was always to the religious center of Arabia, the forbidden sanctuary, the holy burial city of Petra. It was in this city that the Nabataean dead were buried, and it was in this city that the living gathered to eat a ritual meal with their extended family in the presence of the long departed ancestors. This custom was part of the cultural and ethnic make-up of the Nabataeans, and was the glue that held them, a nomadic merchant people, together as a society.

There are no other records of a major pilgrimage in the Arabian Peninsula.

13. Petra is missing in all early Islamic literature.

For centuries, Petra was the center of the traderoute and the focus of the twice-yearly pilgrimage in Arabia. While the earthquakes of 363 CE and 551 CE damaged the city, life continued on there for several more decades.

244 Ṭabarī Vol. 6, page 12

245 Ṭabarī Vol. 6, page 3

246 Ṭabarī Vol. 6, page 4

247 Qur'ān 2:158, 196

Until recently, it was believed that Petra was largely destroyed by the earthquake in 551 CE. However, since the discovery of the Petra scrolls, the existence of Byzantine Petra has come to light. In 1993, Hamoudi al-Bedoul, a local Bedouin, discovered the first remains of carbonized papyrus scrolls while excavating at a Byzantine Church in Petra.

The 152 “Petra Scrolls” represent the largest collection of ancient texts yet discovered in Jordan. They contained a variety of personal records including sermons, wills and contracts from the 5th and 6th centuries. It would seem logical to believe that the scrolls were preserved by the 551 earthquake; however, the scrolls contain documents from 528, and others from the reign of Tiberius Mauricius 582-602 CE, meaning that some are dated more than fifty years after the earthquake. None of the documents that have been deciphered refer to damages or lost property that could be attributed to an earthquake. In fact, according to leading papyrologist Ludwig Koenen, who is in charge of deciphering half of the Petra Scrolls, “indications create the overwhelming picture of Petra as a viable city with a functioning hinterland throughout the sixth century.”²⁴⁸

If this is the case, then why is there no mention of Petra in any of the early Islamic literature? There are Islamic records of people passing through the region and even armies marching through this area, but Petra is never mentioned. At the very same time, non-Islamic literature mentions Petra, but never Mecca. There is no mention of Mecca in any literature until 740 CE when it first appears in the *Continuatio Byzantia Arabica*.²⁴⁹

If Petra was the first Islamic Holy City before the Black Stone was moved to Mecca, then would it not make sense that later writers would eliminate every mention of Petra? Is it possible that the descriptions of Petra were transferred in people’s minds to Mecca in Arabia, and thus every mention of Petra was removed from future Islamic literature?



Above: A mosaic floor from a Byzantine church in Petra.

14. The sacred area was marked out by large stones

Early Islamic records²⁵⁰ tell us about killings and revenge killings between the Khaza’a and the Hadrami tribes near Masjid al-Ḥarām. The sons of a prominent sheik were attacked beside Mount ‘Arafa at the

248 Koenen 530, *Petra Romana Byzantia et Islamica*

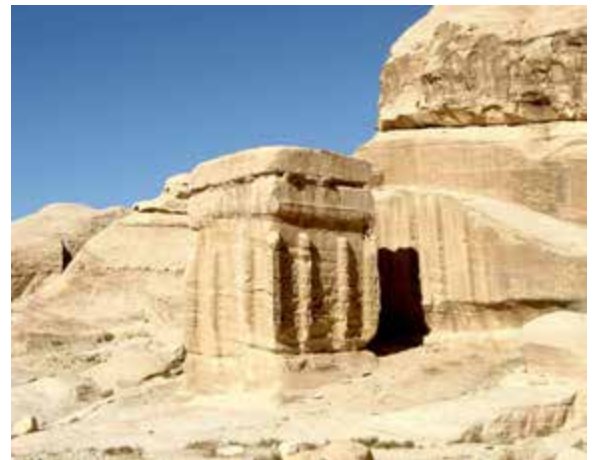
249 Crone-Cook 1977, page 22,171

250 *Sīrat Rasūl Allāh* by Ibn Ishāq, Guillaume, 2006, pg 540; Ibn Hishām 164 (page 390) *Who marched from the sacred stones*; Ibn Hishām 185 (page 390) *killed them in ‘Arafa at the boundary stones of the sacred area*; Ibn Hishām 185 (page 185) *They had wronged us and behaved as enemies And were the first to shed blood at the sacred boundary.*

boundary stones of the sacred area. This story is repeated in several places, as it was very important, since the killings seemed to take place inside the boundary that marked out the sacred area.

These statements show us two things. First, the sacred area was quite large, extending all the way to 'Arafat mountain. From today's Mecca, the distance between the Ka'ba and the base of Mount 'Arafat is around 18 kilometers. Second, it speaks of boundary stones that mark the boundary of the sacred area. In the minds of many readers, this might mean small stones laid out to show the boundary. Small stones however, could be moved, and they would be lost or buried in the desert that surround Mecca and Mīnā. Much larger stones would have been more appropriate, but alas, there are no large boundary stones around Mecca to show travelers where the sacred precinct began and ended.

All around the city of Petra, however, there are large stone blocks carved out of the mountain. Each stone is about 20 feet tall. The stone shown on the right is one of several that tourists pass as they enter Petra via the siq path. All together there are over 25 of these giant square blocks surrounding the greater city area.²⁵¹ Is it possible that these stones mark out the sacred precinct of the Holy City?



15 Games of chance

In the ḥadīths, it is recorded that games of chance and the use of azlams were common in the original Holy City. Azlams refer to any method of obtaining a result by chance. In some instances, they were arrows, sometimes they were dice, or they could simply be sticks thrown down as used by Bedouin today. In the account where Muḥammad removed the idols from the Holy Sanctuary, Bukhārī records the following:

*When Allāh's Apostle came to Mecca, he refused to enter the Ka'ba with idols in it. He ordered (idols to be taken out). So they were taken out. The people took out the pictures of Abraham and Ishmael holding azlams in their hands. Allāh's Apostle said, "May Allāh curse these people. By Allāh, both Abraham and Ishmael never did the game of chance with azlams." Then he entered the Ka'ba and said Takbir at its corners but did not offer the prayer in it.*²⁵²

In the city of Petra, there are many ancient game boards carved in the rocks all around the city. At the Second Conference on Nabataean Studies held in Petra, Jordan, October 2002, Dr. Bilāl Khrīsat and Ṭalāl 'Akasheh presented a paper called *Gaming Boards from the Nabataean Capital City of Petra: Documentation and Study*.²⁵³ It was at this conference that I first took interest in these ancient gaming boards, and soon afterwards a group of us tried to catalogue our own findings at the Nabataea.net website: <http://nabataea.net/games1.html>

²⁵¹ Browning, 1994, *Petra*, page 110

²⁵² Ṣaḥīḥ al-Bukhārī Ḥadīth 2.671

²⁵³ <https://www.auac.ch/bns/research/conferences.html>



Regarding azlams, these were often arrows used by the Arabs. Dice were used by Persians and Romans.²⁵⁴ A recent study suggests that these games were *ṭāb* and *sija*, games²⁵⁵

Left The remains of a game board in Petra, one of dozens of games of chance found around the city of Petra.

16. Battle for Medina (The Battle of the Trench)

In year 5 CE the Quraysh assembled several tribes to attack the new Muslim sect in Medina.²⁵⁶ Muḥammad heard they were coming, so he laid out a trench to protect Medina.

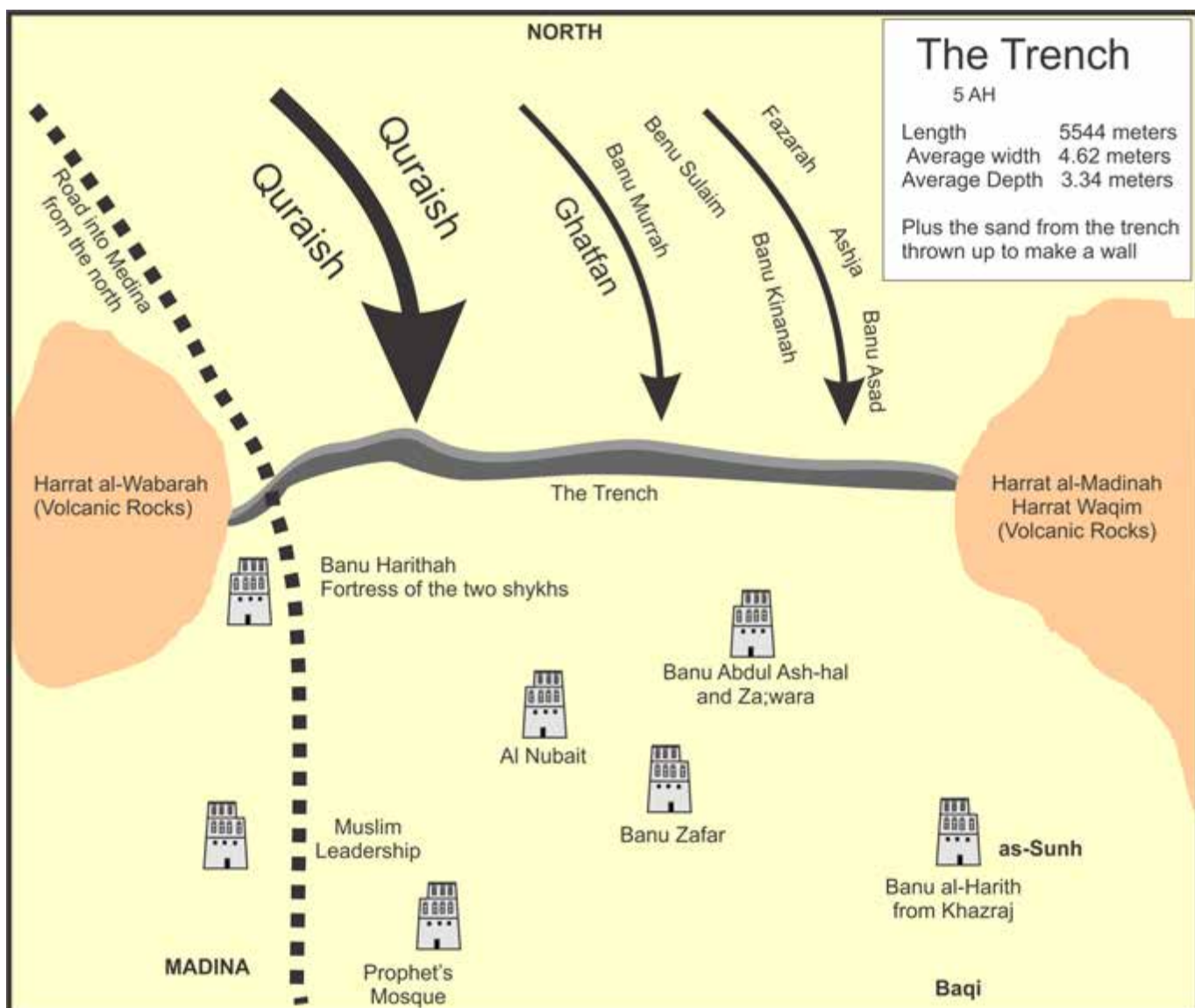
It is noteworthy that the Quraysh tribe attacked Medina from the north. This is very peculiar because Mecca, where the Quraysh lived, was south of Medina. However, as the map on the next page illustrates, the battles against the Quraysh were always on the north side of Medina.

In this case, the two armies faced each other for twenty two days and nights. It seems strange that the Quraysh wouldn't also have attacked from the south if they were marching up from Mecca, which was in the south. However, the record says that they approached Medina coming from the Holy City from the north. This wasn't some chance thing. The prophet Muḥammad made plans well before they arrived, so that they had a trench already prepared when they arrived.

254 'Abdul-Raḥmān, Muḥammad Saed, (2007) *The Meaning and Explanation of the Glorious Qur'ān*, Volume 2, MSA Publication Ltd., page 362 (Also see Sūra 5:90-92)

255 Alex de Voogt, Ahmad B. A. Hassanat, and Mahmoud B. Alhasanat, (2017) "The History and Distribution of *ṭāb*: A Survey of Petra's Gaming Boards," *Journal of Near Eastern Studies* 76, no. 1 (April 2017): 93-101.

256 Ṭabarī Vol. 8, page 7



Above: This map has been styled after a similar map in the “Atlas of the Qur’ān” by Dr. Shauqi Abu Khalil, (Darussalam, 2003).

If the Quraysh were coming from Petra, then they would have definitely come along the road from the north. While different Islamic commentators have tried to explain this anomaly away, once we accept that Petra was the first Mecca, this anomaly disappears.

17. Battle with the Banu Lihyan

The following year, in 6 AH (627 CE) the Muslims marched out of Medina to attack the Banu Lihyan. The Lihyanites had traditionally occupied an area quite far north of Medina, up to and including the areas south of Petra in what is today Wadi Rum. Lihyanite inscriptions can be found all through this part of the desert, but never south of Medina. Al-Ṭabarī records the journey and battle.²⁵⁷ He notes how the armies

²⁵⁷ Ṭabarī Vol. 8 pg 126

marched north out of Medina, and traveled past Makhid to the region of al Batra. Then they took the left road and went to the Holy City of Petra (Mecca in the text) where the Benu Lihyān lived.

These people had been alerted and were fortified in secure positions on the mountain tops, so Muḥammad's plans were thwarted. This paragraph would make perfect sense if they were attacking Petra, but al-Ṭabarī claims they were attacking Mecca. He writes, "To take the enemy by surprise, he pretended to be taking out for the north."²⁵⁸ With this insertion, al-Ṭabarī tries to make sense of the geography that otherwise didn't make sense to him, since by his day Mecca was considered south of Medina.

However, for those who believe that Petra was the Holy City, the paragraph makes perfect sense without the insertion. They went north from Medina into the region south of Ma'an and east of Ras al Naqab to the area known to the Bedouin as Al Batra even to this day, and then veered left to Petra. The Benu Lihyān had fortified themselves in the mountains, so the Muslims returned home.

18 Al-Ḥajjāj and the city of Khaybar

In 7 AH the Muslim armies from Medina marched north again. Their first target was Khaybar, a city 150 kilometers north of Medina that had often opposed the Muslims. After the Muslim army defeated Khaybar, al-Ḥajjāj (who was not yet a military leader) decided to go on to the Holy City because he had a wife, son and property there.

Al-Ṭabarī describes his arrival in the Holy City.²⁵⁹ *I departed and arrived in Mecca [Petra]. On the mountain trail at al-Bayḍā, I met some men from Quraysh who were eager to hear news and were asking about what happened to the Messenger of God. They had heard that he had gone to Khaybar and knew that it was the leading town in the Ḥijaz in fertility, defenses and men, so they were seeking news.*

There are two striking things about this paragraph. First, al-Ḥajjāj arrived on the mountain trail by al-Bayḍā. On page 243, we will see that al-Bayḍā is a town close to Petra (5 km) on the northern route into the city. I'm sure al-Ḥajjāj approached from the east, so he could travel towards the south into Petra. That way it wouldn't appear he was coming directly from Khaybar, for the Quraysh were at war with the prophet. There is no al-Bayḍā near Mecca, so Yāqūt, writing 600 years later²⁶⁰ tells us that al-Bayḍā is another name for Tan'im, which would have been outside the sacred territory encircling Mecca. The geographer Yāqūt gives no sources or reasons for his conclusion.

The second striking thing about this paragraph is that the Quraysh are so concerned. If the Holy City was indeed south of Medina, they should not have been too concerned. After all, they were the leading city, the mother-of-all-cities in the south. Khaybar lay far to the north of Medina. However, if the Holy City was Petra, then the fall of Khaybar would have been of great concern to them, as it was the only major center between Medina and Petra. The men insist on hearing news, so al-Ḥajjāj then tells them lies. He says that Khaybar defeated the Muslim army and that Muḥammad was made a prisoner and was being sent

258 Ṭabarī Vol. 8, page 42-43

259 Ṭabarī Vol. 8 pg 126

260 Mu'jam al-Buldan, II, 335

to Mecca. The Quraysh rejoice and are happy, so al-Ḥajjāj goes about his business collecting his property. This is indeed an interesting story, for if the people of Khaybar had captured Muḥammad, the last place they would have taken him was Mecca, for it would mean a journey through Medina!

They might have tried to slip around the coast, or across the vast deserts to the east, but however they might have wanted to try it, a trip from Khaybar to Mecca without passing Medina would have been difficult, especially with such a prisoner as Muḥammad! However, if the Holy City was north of Khaybar, then the people of Khaybar could easily have taken Muḥammad north to the Holy City (Petra) so he could stand trial there. al-Ḥajjāj makes good his escape from the Holy City before the news reaches them that Khaybar was actually defeated and Muḥammad is on his way at the head of the army to fight them.

19. The order of the Battle for Mecca (The Victory of Islam)

After defeating Khaybar, the Muslims raided a number of locations in northern Arabia, and then they prepared to march further north to meet the Roman (Byzantine) armies.²⁶¹

They encamped at Mu'tan (Ma'an) in the land of Syria. The men learned that Heraclius had encamped with 100,000 Byzantines at Ma'ab.^{262,263} The men journeyed on. When they were within the boundaries of al-Balqa, they were met by Heraclius' armies of Romans and Arabs at a village of al-Balqa called Masharif ... the Muslims withdrew to a village called Mu'ta.²⁶⁴

The battle of Mu'ta was a stalemate and the Muslim army was in a bad state as many were killed or wounded. It is important to note here that the Anṣār fought in this battle.²⁶⁵ The two armies retired from each other for a time. What happens next is puzzling, especially if you accept the traditional geography of the Holy City being Mecca in southern Arabia. After a short campaign into Syria, Muḥammad decided to attack Mecca next.²⁶⁶ This is a very strange occurrence. The armies of Muḥammad, the Emigrants and the Anṣār apparently all march to Mecca in Saudi Arabia.²⁶⁷

Consider these two options. First, we know the Muslim armies marched all the way from Medina north to fight at Mu'ta in southern Jordan. Did they then return over 1000 kilometers back across the burning Nafud Desert to take Mecca? Wouldn't it make more sense if the Holy City was in Petra instead of being south of Medina?

261 Ṭabarī Vol. 8, page 152 and onward

262 Rabbah Moab, 10 kilometers north of Kerak

263 Ṭabarī Vol. 8 Page 152

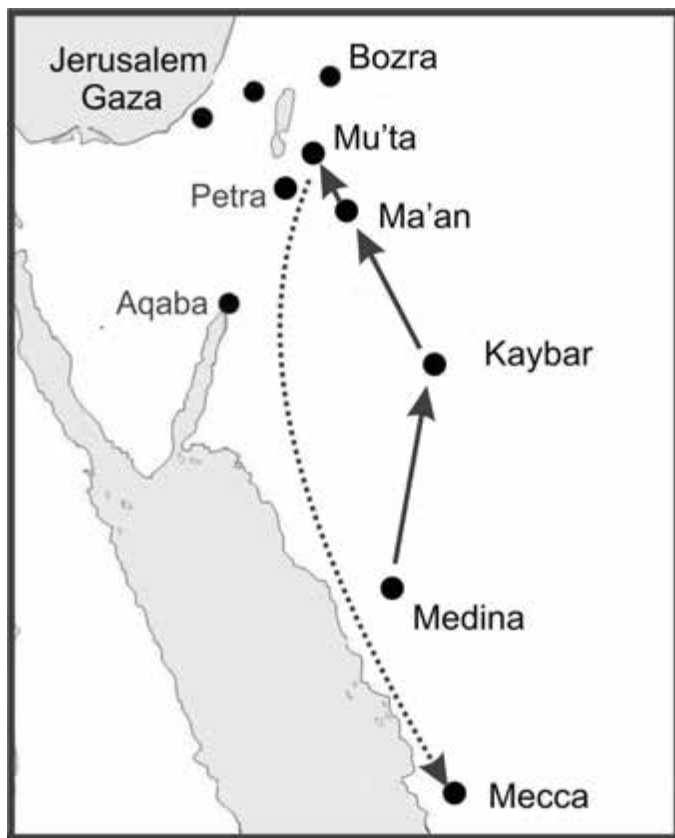
264 Ṭabarī Volume 8 page 156

265 Ṭabarī Vol. 8 page 156

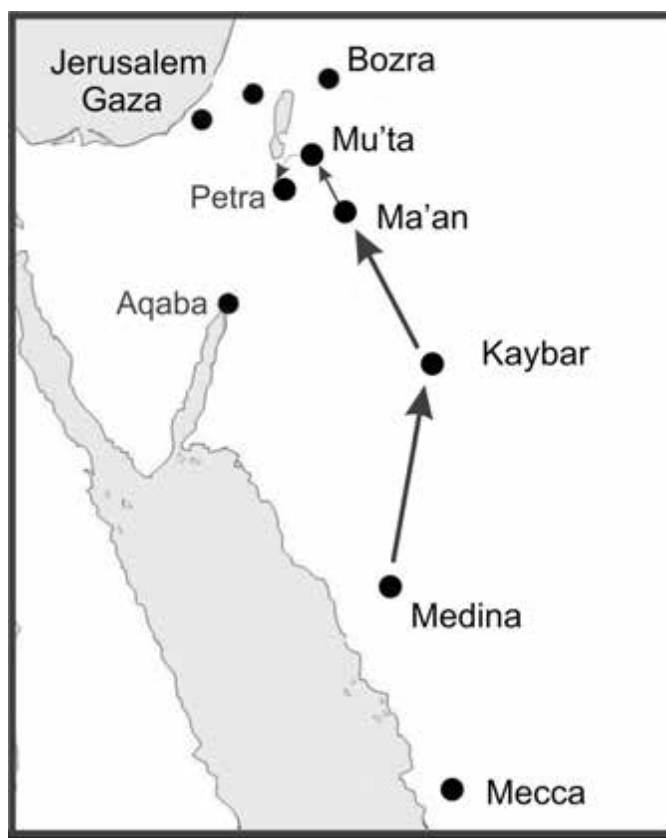
266 Ṭabarī Vol. 8, page 160

267 Ṭabarī Vol. 8 page 168

Consider the distances the armies had to march. Medina to Mu'ta is about 900 kilometers, taking the most direct route. Mu'ta to Mecca is another 1,200 kilometers. Then travel from Mecca back to northern Arabia to continue campaigning is another 1000 kilometers. In total this would be 3,100 kilometers across some of the most difficult terrain in the world: rugged mountains, burning deserts, and waterless plains.



Above: This map shows the traditional journey: leave Medina and march north to Khaybar, then to Ma'an, and the battle of Mu'ta. Then Muḥammad decides to take Mecca, and marches all the way back south



Above: If Petra is Mecca then they leave Medina and march north to Khaybar, then to Ma'an, and the battle of Mu'ta. Then Muḥammad decides to take Mecca, only a few miles away.

The answer that Muslim writers 300 years after the fact give us, is that despite the Anṣār warriors being mentioned as present in all locations, they claim there were three Muslim armies. Otherwise, the treks back and forth in Arabia would have been impossible.

20. The back way into the Holy City

The descriptions that al-Ṭabarī gives of the Mecca district are puzzling.²⁶⁸ *When approaching Mīnā: he met Ikrimah in a canyon and routed him so that he drove Ikrimah back into the walled gardens of Mecca....*

There are numerous references to the Holy City being surrounded by canyons and rough terrain. While Mecca in Saudi Arabia is surrounded by low rocky mountains, this description is not true of the Mecca region today, which can be approached from various different angles.

268 Ṭabarī Vol. 8, page 71

For instance, when Muḥammad led his army from Medina back to Mecca to conquer it, the prophet asks: “Who is a man who will lead us forth on a way other than the one on which they are?” According to *Ibn Ḥumayd – Salamah- Ibn Ishāq-’Abdallāh ibn Abū Bakr: A man from Aslam said “I will, Messenger of God.” He took them on a rough and rugged path among canyons. When they emerged from it, it was exhausting for the Muslims – they reached level ground at the end of the valley, the Messenger of God said to the people:...*”²⁶⁹

It is interesting to note that Muḥammad, who was born and raised in the Holy City, and who roamed the mountains in his youth, needed a guide. Apparently the area was so contorted that even Muḥammad could not find his way. Historians have not been able to trace this route into Mecca in Saudi Arabia as the description of “mazes of canyons ending in a level valley” does not fit any landscape around Mecca.

The story continues: *Turn right amid the salt-bushes on a path that will bring [the army] out over al-Murar Pass to the descent of al-Hudaybiyah below Mecca.* The Murar Pass with a descent of al-Hudaybiyah has never been identified and historians are unsure what is meant by “below Mecca.” *The Messenger of God set out, but when he entered al-Murar Pass, his camel kneeled down....*”²⁷⁰

The Thaniyyat al-Murar (Bitter Bush Pass) has also never been identified in Mecca, although Yāqūt mentions it.²⁷¹ It appears to be a narrow path that leads down from Mecca to a lower area.

If this description was applied to Petra, then the army would have approached from the south. And ...there



is a mountain pass that goes through a maze of canyons south of Petra. It is unused today except by the local Bedouin. In 2002, a group of adventurous enthusiasts and myself traveled this route into Petra. The undertaking was difficult and despite our GPSs we ended up requiring help from the Bedouin. The pass opened up in a flat area just south of the city. The journey was arduous, but it proved that it was possible to travel through the maze of canyons into the very south end of the city, just as al-Ṭabarī describes the armies coming into the Holy City. These photos are from that expedition.

The narrow thaniya pictured left opens into a maze of canyons, some of them wider, like the one on the next page, and many smaller, narrower ones. Without a guide, we quickly became lost, despite our GPS units and maps.

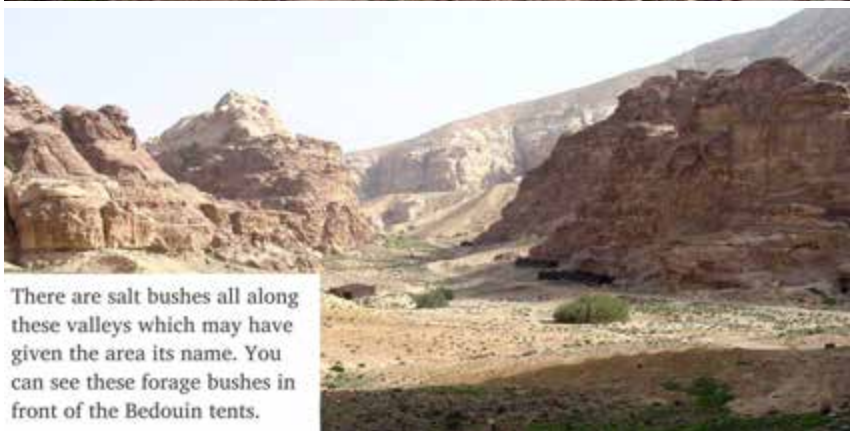
269 Ṭabarī Vol. 8, page 72

270 Ṭabarī Vol. 8, page 73

271 Yāqūt, Mu’jam al-buldan, Vol. 8, 3



Left: Bedouin live near the end of what is possibly Thaniyyat al-Murar just before it opens into the south end of Petra.



21. The current location of the Quraysh tribe

As Islam spread, the Quraysh tribe spread with them. Today it is possible to find people who claim to be descended from the Quraysh tribe all across the Middle East. Almost all of the Muslim Quraysh are Sunni, but there are also some who are Christians, belonging to the Orthodox

Church (Antioch), the Chaldean Catholic Church, the Ancient Church of the East, as well as a few in the Aḥmadiyya community. This wide dispersion of people from a Quraysh background would be expected, as the Quraysh were among the leaders of Islam as it spread west to Spain and east to Afghanistan. An internet search of Quraysh or Qureshi will produce an interesting list of people with this last name.

When living in southern Jordan doing survey work of ancient Nabataean sites, I became aware of many Quraysh tribesmen living around (especially south and west) of the city of Ma'an. I asked a local clinic if I could survey the names in their registry and found an amazing number of Quraysh names. Ma'an is only 30 kilometers east of Petra. These tribesmen living in the Ma'an vicinity claimed they were descendants of the original Quraysh tribe.

But what about in antiquity? The city of Ḥumeima was a Nabataean town on the incense route, some 40 kilometers south of Petra. It flourished during the Nabataean Empire (100 BCE – 300 CE) and was not abandoned until 746 CE when a large earthquake destroyed much of Ḥumeima and also Petra.²⁷² The Ḥumeima site has five Byzantine churches, two Umayyad-Abbāsid farmhouses, a large early Abbāsid fortified house and a mosque that served as the residence of the famous Abbāsid family.²⁷³

²⁷² Oleson, 1995, *Preliminary Report of the Hymayma Excavation Project, 1993*

²⁷³ Oleson, 2005, *Introduction to the Humayma Excavation Project*

The Abbāsīd families left Ḥumeima for Kūfa in Iraq in 132 AH/749 CE where they would later become rulers. Among them were two of the first Abbāsīd caliphs: Abū al-'Abbās al-Saffāh and Abū Ja'far al-Manṣūr, both of whom were born and grew up at Ḥumeima. Excavations have uncovered three buildings associated with the Abbāsīd family including the qaṣr (fortified house) and the small mosque.

Right: A photo of the foundations of the Abbāsīd Qaṣr or fortified house in Ḥumeima.



Why is Ḥumeima important? When the Muslims of Baghdad wished to find a member of Muḥammad's family to support their revolt against the Umayyad rulers in Damascus, they went to the region of Petra. It is interesting that they did not find members of Muḥammad's family at Mecca in southern Arabia, but rather looked to northern Arabia, to a town only 27 miles south of Petra.

22. The lack of evidence from north and south of Mecca

Muslims commonly believe that ancient Mecca in Saudi Arabia was a major city on the caravan routes between the kingdoms of Arabia. However, history does not prove this to be so. One would think that kingdoms like Yemen, which are immediately south of present day Mecca, and those north of Mecca would substantiate Mecca's existence, but this is not the case. The ancient kingdoms of Yemen utilized the skill of writing since the 10th century BCE,²⁷⁴ and yet, with the thousands of inscriptions, graffiti and other writings that have survived to this day, there is not a single mention of the city of Mecca. Looking north from Mecca to the cities of Dedan, Teyma and Khaybar, again thousands of inscriptions, graffiti and other writings have survived to this day, and once again we have not a single mention of the city of Mecca in any literature prior to 900 CE.

Farther north are the Nabataean cities of Meda'in Ṣāliḥ, Petra and the Nabataean cities in the Negev. In the inscriptions, graffiti and other records, once again, there is not a single mention of the city of Mecca. If Mecca was indeed a major center that had existed since the days of Abraham, it should have appeared somewhere in the ancient and classical records.

In contrast, many of the small kingdoms that existed in Yemen are well documented. The Kingdom of Ḥaram was founded 600 BCE by King Yaharil²⁷⁵ and ended with King Maadikarib Raydan. (190-175 BCE).²⁷⁶

²⁷⁴ Kitchen, 1994, page 135

²⁷⁵ Kitchen, 1994, page 239

²⁷⁶ Kitchen, page 181, 239, *Documentation For Ancient Arabia*

There was also the Kingdom of Inabba, whose most prominent ruler was King Waqahil Yafush. (550-530 BCE)²⁷⁷ Another kingdom, Kaminahu, was founded by King Ammiyitha (585-570 BCE)²⁷⁸ and ruled by a number of kings until Ilisami II Nabat, 495–475 BCE. Then there was the kingdom of Nashan, whose first documented ruler was King Ab'amar Saqid. He reigned in 760 BCE.²⁷⁹ Later a king named Yadi'ab Āmir ruled from 500-480 BCE.²⁸⁰ If historians and archeologists can date so many small kingdoms north and south of Mecca, why can they not find any reference to the city of Mecca supposedly existed in this region for thousands of years?

Dr. Michael Macdonald at the Faculty of Oriental Studies in Oxford University has been working on databases of inscriptions found in Arabia. He and his colleagues have recorded thousands of inscriptions.²⁸¹ To date, not a single reference to the city of Mecca has been discovered, despite thousands of pieces of graffiti written by people going on the pilgrimage.

While there is much evidence of people going on pilgrimages to Petra, one wonders why Mecca is never mentioned. It is as if it never existed.

23. Khālīd's pilgrimage

In the massive collection of writing produced by Abbāsīd authors between 750 - 950 CE (132 - 340 AH) the Muslim writers seldom mention the city of Mecca and never once mention the city of Petra. Sometimes when early Abbāsīd writers do mention Mecca, they go out of their way to demonstrate just where Mecca was located. This is illustrated in al-Ṭabarī's comments in the following story.²⁸²

Khalid and a group of young men were together with the army of Abū Bakr as it marched along the Euphrates River in Iraq. It was a slow moving army, following the long bends of the river. The young men were bored, when one of them got an idea. They should make a quick dash across the desert and perform the pilgrimage in the Holy City and then dash back. Could they make it in time before the army arrived at its destination? They raced off, performed the pilgrimage and raced back to al-Ḥirārah arriving just when the rear of the army entered the city. It was a brilliant feat, but soon word got out and Abū Bakr sent the young men back to Syria as punishment.

Al-Ṭabarī tells the story and then notes some items. These items have no isnād or line of succession to give indication of where this information came from. We can only assume that al-Ṭabarī himself inserts this information on his own behalf. Abū Ja'far relates the story: *Khālīd set out as a pilgrim from al-Firād (Iraq) on 25 Dhū al-Qa'dah (31 January 634) but kept his pilgrimage a secret. He had with him a number of his*

277 Kitchen, page 181, 239

278 Kitchen, page 182

279 Kitchen, page 183

280 Kitchen, page 240

281 You can read about the database at <http://www.orinst.ox.ac.uk/staff/iw/mmacdonald.html>.

282 Ṭabarī Vol. 11, page 68

companions. He traveled through the land until he arrived at Mecca by dead reckoning. That came to him easily, in a way that it would not come to either guide or *ribāl*. He traveled on one of the roads of the people of al-Jazīrah, no stranger way nor one more appropriate than it despite its difficulty has been seen. Therefore his absence from his troops was short, so that the last of them had not arrived in al-Ḥīrārah before he came to them in the company of the commander of the rear who he had appointed, and the two of them arrived together. Khālīd and his companions had shaven their heads. His pilgrimage was unknown except to those in the rear whom he had told about that. Abū Bakr did not learn of that until later, when he reproached him for it. His punishment was that he was sent to Syria.

(Here starts al-Ṭabarī comments.) *Khālīd's journey from al-Firād crossed the width of the land randomly by his own reckoning. The road from al-Firād passed through Ma'al-Ambari, then Mithqab, then ended at Dhat al'Irq. The road then headed east from there, bringing him from 'Arafat to al-Firād. That road is named al-Sudd.*

There are several things that one can note from this passage. First is that Khālīd calculated he could make a quick pilgrimage to Mecca while his troops marched from al-Firād to Ḥīra. The troops would travel a distance of 475 kms on a direct route, or around 700 kms if they followed the meandering river.

The overland trip to Mecca in Saudi Arabia however was over 1500 kms in one direction, and the return journey would make the total distance well over 3000 kilometers. Second, after the account is finished, al-Ṭabarī seems to insert the short section to describe Khālīd's route to Mecca, in case anyone objects to this rather long and tedious journey being made in such a short time.

The paragraph: *Khālīd's journey from al-Farād crossed the width of the land by his own reckoning. The road from al-Firād passed through Ma'al-Ambari, then Mithqab, then ended at Dhat al'Irq. The road then headed east from there, bringing him from 'Arafat to al-Firād. That road is named al-Sudd..*" reads more as an intrusion into the text than a part that flows from it. Al-Ṭabarī gives no source other than himself for this section.

The question then faces us: Which is more probable, a quick trip to Petra, or a quick trip to Mecca in southern Arabia? If one assumed that Khālīd's pilgrimage was to the religious center of Petra, the journey would have been much shorter. (475 kms to Petra versus 1500 kms to Mecca in the south) On a journey to Petra, dead reckoning would have been necessary to find the ancient water cistern that connected Wadi Sirḥān to Jafr. This cistern was used by ancient camel caravans enabling camels to cross directly west from Wadi Sirḥān to Jafr and then on to Ma'an and finally to Petra. This route was first suggested to me by John Hill, when he was preparing his translation of the Xiyu juan or "Chapter on the Western Regions" from the Hou Han shu as the Chinese described traveling to Petra arriving directly from the east. At the time, Hill required some help tracing out the Chinese routes, and I was in the Middle East, living in the desert between Petra and Wadi Rum.

As John Hill translated the Chinese text²⁸³ he became convinced that a trade route used to exist between Petra and Wadi Sirḥān to the east. Such a trade route would cross the desert to link Petra directly with Jawf, and subsequently to the trade routes that ran east from there to Gerrha and the ports at the head

283 Hill, John, nos. 2.21 and 12.24, also *Through the Jade Gate, China to Rome*, Vol. 1, page 318

of the Persian Gulf. This proposed trade route would have provided a direct link between Gerrha and the more northern ports such as Charax Spasinu on the Persian Gulf, and Gaza and Rhinocorura (modern al-'Arish) on the Mediterranean Sea.

This route would have been known as the “Mesopotamia Route” or “Northwest Route” to Petra. It is interesting to note that the term al-Ṭabarī gives it means exactly that: “al-Jazīrah.”²⁸⁴

The Chinese text that John Hill was referring to is one known as the *Wei lue* (or “Short Account of the Wei Dynasty”) composed by Yu Huan between 239 and 265 CE.²⁸⁵ It provides much additional material on Parthia and DaQin or the Roman Empire than was included in the earlier account of these regions in the *Hou Han shu*, which were based on the reports of the Chinese envoy Gan Ying who reached the Persian Gulf in 97 CE, and presented in an address to the Chinese Emperor circa 125 CE. The new material in the *Wei lue* appears to date from the late 2nd or early 3rd century CE and seems to be based on accounts from Arab sources.

According to John Hill, the ancient Chinese text claims that “from Qiēlan (Wadi Sirḥān) one can travel due west 600 li (250 km) to the kingdom of Sifu (Mount Sier or Petra).”²⁸⁶

The basic units of measurement employed in the *Hou Han shu* (the li and the chi) have varied considerably through the ages and at times, from district to district. Fortunately, however, they remained stable over the Qin and Han periods and a bronze standard measure, dated 9 CE, has been preserved at the Imperial Palace in Beijing. This has allowed accurate conversions to modern measurements, and the li is calculated to be 415.8 meters in length. Other ancient measurements were the Greek stadium (201.5 meters), the Roman stadium (185 meters), and the Roman mile (1,482 meters).²⁸⁷ There were several problems with the trade route that John Hill suggested.

First, this route does not appear on any modern maps of ancient trade routes of the Arabian Desert. Such a route would cross a wide desert expanse between Jafr in Jordan and Wadi Sirḥān in Saudi Arabia. Second, the Chinese text suggested that there was a wang or “king” of Wadi Sirḥān, and as far as we know, Wadi Sirḥān never was a kingdom, although it appears to have been a major part of the Midianite kingdom as I demonstrate in chapter nine of *Qur'ānic Geography*.

Wadi Sirḥān is the name of a wadi (valley) that runs southeast from the ancient site of Al-Azrak in eastern Jordan, eventually crosses the border into Saudi Arabia and ends at the wells of Maybu. It is about 140 kilometers (87 miles) in length, and 5-18 kilometers (3-11 miles) wide. Musil called it: “a sandy, marshy lowland, surrounded by low hillocks.”

As far as I could tell, any reference to a “king” of this area by the Chinese explorer must have referred to a

284 Also see note 658, *Al Jazīrah*, page 180 Ṭabarī Vol. 12, page 180

285 See the list of Chinese explorers in chapter 5

286 & 287 Soon-to-be published annotated translation of the *Weilüe* by John E. Hill - personal communication 30 May, 2017

local sheik. Hill explains it this way: “The Chinese word, ‘wang’, usually translated as “king,” is employed for everyone ranging from tribal chiefs to emperors - so there is no difficulty assuming it is used here for “sheik.”

Now, trade routes can be funny things. Most Westerners think in terms of major nations trading with other major nations through established and well known routes. The Arab mindset was different. The Bedouin think in terms of being middlemen without the two centers having contact with each other. This is significantly different. Camel caravans were making profit by bringing goods from one center to another, but they were not the official representatives of either center, and endeavored to limit direct communication between the two.

The governments of these centers made money by taxing the caravans. The caravan owners made better profits by avoiding taxes. So trade routes were in constant flux. There were, and are, many ways to cross the desert. Each route has its positive and negative points.

So any caravan passing through a settled area would have to pay something to the sheik who controlled that area. Settled areas, however, were usually located around water spots, and caravans needed water. As I mentioned in chapter eleven of *Qur’ānic Geography*, the Nabataeans grew in wealth and power because they developed secret water collection systems in the desert, enabling their caravans to pass through areas that others could not travel, thus avoiding some of these taxation centers. Thus a cat and mouse game developed between caravan owners and those with the power to tax caravans passing through their region.

This constant flux makes it difficult for historians to accurately plot ancient trade routes. While major routes did occur, other routes that bypassed certain centers were used whenever it was profitable.

As mentioned before, based on Chinese records, John Hill suggested that a trade route existed between Petra in the west and Gerrha in the east. The part of the route that ran east from Petra to Ail, then to Ma’an and finally to Jafr is quite acceptable, and follows a natural course of travel between these centers. There is also enough water along this route for major camel caravans to pass.

The problem with Hill’s suggested route was getting a caravan from Jafr to a spot with water in Wadi Sirhān. Since camels require about 80 - 100 liters of water each, a small caravan of 100 camels would require 8000 - 10,000 liters of water. Thus there had to be a major watering point between Jafr and Wadi Sirhān with a minimum of 10,000 liters and, preferably, much more.

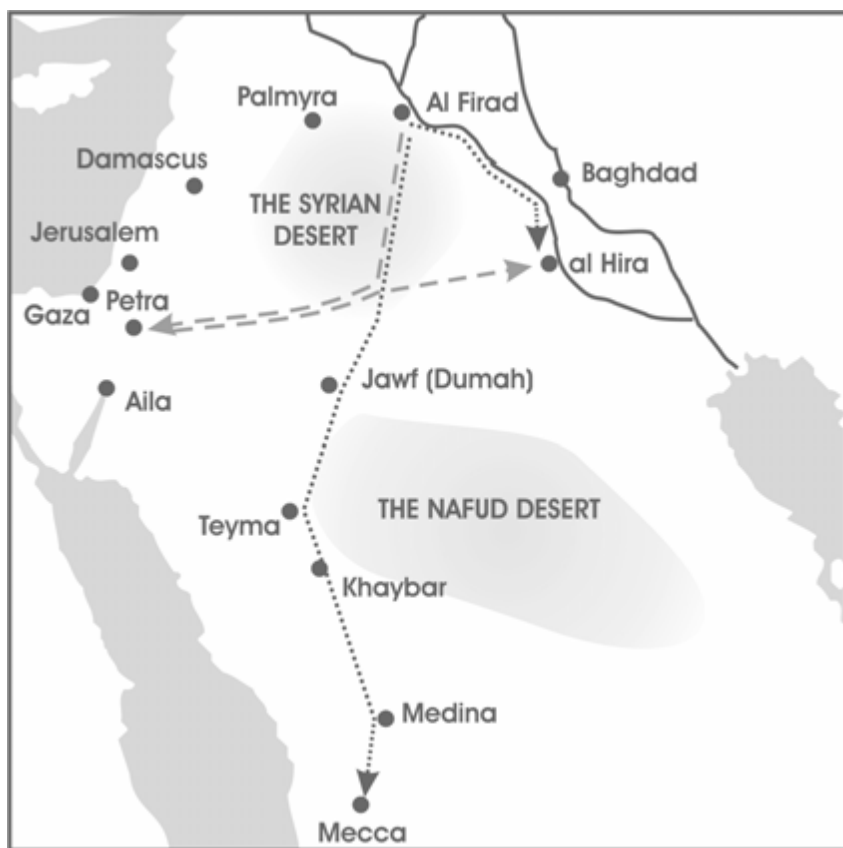
A well would not usually provide this kind of water, unless it was located in an area with close surface water. Such an area would have been an oasis, such as is found in Ma’an. If there was no oasis or active well, then a rain-water collection system that fed into a large cistern was required. If camel caravans used this route, then there must have been a major source of water about half way between Jafr and Wadi Sirhān.

I began my search in the Jordanian village of Abū Lissan where the Darawsha tribe of Bedouin live. They originally herded camels south and east of the Jafr area, before being settled by the Jordanian government around the well at Abū Lissan. After much discussion regarding the area and possible routes, the old men of the village told me of a large, ancient water cistern located in the desert east of Jafr. However, as it is very hard to gain government permission to visit this area, we couldn’t just drive on out to look for

it. Then a few days later, while digging around in the basement of ACOR (American Center for Oriental Research) in Amman, I came across an old map that actually showed the location of this large cistern.

Is it possible that Khālīd's men remembered the ancient Nabataean trade route and tried a daring quick trip to the Holy City while their army marched back to Ḥīra? Rather than taking the longer trip around the top of Syria, they made a dash through the desert and approached Petra directly from the east.

While their army marched along the winding river bank on foot for nearly 700 kms, their camels raced across the desert covering 800 to 900 kilometers, depending on which desert track they took. The men quickly performed the pilgrimage and then rushed back to their troops before the rear guard made it to Ḥīra. It is just the kind of dashing bravery that young Bedouin men often demonstrate or aspire to. It must have been a shock to them when Abū Bakr disciplined them for their act of devotion to Islam.



The rain-water collection system and storage cistern is located almost exactly half way between Jafr and Al Isawiyah at a place where Wadi Hadrai and Wadi el 'Abyaḍ meet, collecting water from both wadis. This would enable caravans to water at a spot directly between Petra from Wadi Sirḥān and would have provided a way for Khālīd to perform the pilgrimage to Petra and quickly return to al-Firād or al- Ḥīra on the Euphrates River.

A journey to Mecca in Saudi Arabia, a thousand kilometers south of Petra would have been impossible for Khālīd to undertake in the same time period. Therefore, this story better illustrates that Khālīd and his men actually traveled to Petra and not Mecca.

24. Trebuchet Stones

During the civil war with Ibn al-Zubayr²⁸⁸ the Syrian army attacked the Holy City, and during the month of October destroyed the Ka'ba in the center of the city with a trebuchet which hurled large stones into the Ka'ba area.²⁸⁹

In the city of Mecca, there is no evidence of trebuchet stones ever being used against the city, or even city walls over which a trebuchet would have thrown stones. In Petra, archeologists from Brown University have uncovered hundreds of trebuchet stones which were hurled into the area in front of the temple of Dushara, the bathhouse and in front of the "Great Temple area". Using the fallen roof tiles from the Great Temple, it is possible to date the fortified area and stones to sometime after the earthquake of 551 CE.

The area was then covered in rubble from the later earthquake of 713 CE. Is it not an amazing coincidence that a manjanik (early tebuchet) was used against Petra at exactly the same time as one was supposed to have been used against Mecca?



Right: Manjanik stones found by Brown University in their excavations of the center of Petra.

25. The cave of Ḥirā'

Muḥammad received his revelation in the cave of Ḥirā'.²⁹⁰ In his book *Sīrat Rasūl Allāh*, Ibn Ishāq tells us where the mountain of Ḥirā' is located:

*Now al-Khaṭṭāb had so harassed Zayd that he forced him to withdraw to the upper part of Mecca, and he stopped in the mountain of Ḥirā', facing the town.*²⁹¹

Today, the cave of Ḥirā' has been identified as being located on Jebal Nour near Mecca. The cave on Mount Nour is more or less a slab of rock that has fallen over, creating a small hollow space underneath it about 4 meters in length and 1.7 meters wide. The Islamic record give us several descriptions of the cave and what the prophet would do there:

288 64 AH, 683 CE

289 Cosman, 2008, pg 305 and Ṭabarī 19: 223-224

290 Ṣaḥīḥ al Bukhārī Ḥadīth 1.3

291 Guillaume , Ishāq 148, page 102

The apostle would pray in seclusion on Ḥirā' every year for a month to practice taḥannuth, as was the custom of Quraysh in heathen days. Taḥannuth is religious devotion.²⁹² (This practice is not described to us, but is assumed to be understood by the readers, so it was common knowledge in its day.)

He used to go in seclusion in the cave of Ḥirā' where he used to worship continuously for many days before his desire to see his family. He used to take with him the journey food for the stay and then come back to Khadija to take his food likewise again till suddenly the Truth descended upon him while he was in the cave of Ḥirā'.²⁹³



Above: The cave of Ḥira is under some fallen slabs of rock about half way to the top Ḥira Mountain. (Jebal Nour)

I was in the company of the Prophet in the cave, and on seeing the carvings of the pagans, I said, "O Allah's Apostle! If one of them (pagans) should life up his foot, he will see us." He said, "What do you think of two (gods), the third of whom is Allah?"²⁹⁴

Note that there were pagan images on the walls of the Ḥirā' cave. Today there is no evidence that there ever where any pagan images

there. On the next page you can see these carvings on the walls of the cave of Ḥirā' in Petra.

So what does taḥannuth mean? It literally means to break ones oath or commit a sin, but when it is used in the 5th form it becomes taḥannath or the reflexive of "ḥanath." It would seem that people went to the cave of Ḥirā' to avoid committing sins similar to monks of that period seeking asceticism. Wagtendonk and others suggest it includes feeding people passing by.²⁹⁵

The cave near Mecca is very narrow, less than 2 meters wide at its widest, while most of the flooring is about ½ meters wide. The cave is situated at a height of 270 m (890 ft) taking about 1,200 steps to reach from the foot of the mountain. It is hardly likely there would be people passing by. The mountain itself is 640 meters tall, so the cave is about half way in an area of loose rocks.

There are a couple of issues that should be considered. Both Ibn Hishām and Ibn Ishāq clearly call Mount

292 Ibn Hishām 51, page 92

293 Bukhāri 1:3

294 Bukhāri 6:186. Note Bukhāri 6:187 gives an alternative account of the cave story, in which the Angel Gabriel does not appear to Muḥammad. He only hears a voice calling him. (See 6:444)

295 Wagtendonk, K., *Fasting in the Koran*, Brill, 1968, pg 35

Ḥirā' a mountain located in the upper region of Mecca. The area around Mecca is basically flat with a series of large rocks rising from the ground. The term "upper part" of Mecca doesn't really fit.

Both Ibn Hishām and Ibn Ishāq tell us that after receiving the revelation, Muḥammad decided he was going crazy, so he started to climb the mountain above the cave to throw himself off.²⁹⁶ Midway up Jebal Ḥirā' the angel confronted him again. Even though the messengers of Khadīja were searching for him below (all through the "high ground" of Mecca, they did not see him. The story then continues: "...when I was midway on the mountain, I heard a voice from heaven..." If the cave is half way up the mountain, what does the term "midway on the mountain" mean? If the cave was lower down, then this would make more sense. There is nothing in the narratives to give us any indication that the cave was high up the mountain side. If it was, as you can see in the photo, then Muḥammad could have thrown himself off without climbing any higher.

Now let's turn to Petra. If all of the early Qiblas pointed to this city, then there should be a cave outside of the city that fits all of these descriptions. While it is difficult to imagine this scenario being played out in Mecca's geography, there are a number of caves in Petra facing the valley that fit this description. I believe there is one cave that fits very well.

During my years of exploring the area around Petra, there was one place that particularly impressed me. North of the famous siq crack through the rock is a smaller siq that is an active watercourse for part of the year. At one place the water used to swirl around a bend, and here it carved out a small cave. Down through the years people visited this cave and carved many god blocks, niches and even a crescent onto the cave walls. In this place there is a raised stone bed where a person could sleep. The cave opening is only a dozen or so feet away, and an ancient walking path went past the entrance of the cave. It would be an excellent place for a person to practice asceticism as well as being located in a place where they could feed pilgrims passing by.



Above: Inside the Petra cave there is indication that the area was long venerated. The two gods of Bukhārī 6:186 can clearly be identified in the niche in the center of the photo on the right.

296 Ibn Hishām 51, Ibn Ishāq 1150 page 106



Above left: One of the oldest known crescent symbols is prominent in this cave.



Above right: The entrance of the cave is down this narrow canyon, which is still an active watercourse. Tourists are advised to stay away, especially in rainy season. Rain can fall miles away, and rush down this canyon onto the unsuspecting.

In the ancient records, there were multiple caves around ancient Mecca, such as Abu Bakr's cave on Jebal Thaur, a mountain "below" Mecca, which cannot be identified today.²⁹⁷

Conclusion

The twenty five arguments presented in this chapter are intended to support the proposal that the city of Petra was the original Holy City of Islam. These arguments are intended to supplement the archeological evidence given in the first chapter, rather than stand alone. When taken together with the archeological evidence of early mosque qiblas, there seems to be no question that the original Qibla faced towards Petra, and that Petra is indeed the place where the original Masjid al-Ḥarām was located, the original Holy City of Islam where the prophet Muḥammad was born, and where the first four rightly guided caliphs worshiped.

297 See Bukhāri 5:245

More Supporting Evidence

26. The “Mother of All Cities”

This is a term which brings to mind either a large and impressive city or a city of great antiquity. The Qur’ān clearly refers to Mecca as the Mother of All Cities:

*“And this is a book which we have revealed bringing blessings and confirming (the revelations) which came before it: that thou mayest warn the Mother of Cities (Mecca) and all around her. Those who believe in the hereafter believe in this (book) and they are constant in guarding their prayers.”*²⁹⁸

The term *mother of all cities* (Umm al-Qura) is still used for Mecca today²⁹⁹ and Muslim scholars try to point out that it is worthy of this description:

*Additionally, some modern scientists say that the city of Makkah is the center of earth in terms of gravity. Makkah also falls at the ratio of phi (the mathematical golden ratio) between the north and south poles. The above are scientific theories that are not mentioned in the Islamic scripts. However, what is mentioned is that Makkah is the mother of all cities.*³⁰⁰

In 2002, I had the opportunity to visit the Second Conference on Nabataean Studies held in Petra, Jordan, and organized by the Al Hussein Bin Talal University. During the conference I had occasion to speak with several leading Jordanian and Saudi archeologists. I asked them specifically about the archeological record in and around Mecca. While not wishing to be quoted or named publicly, they admitted that the archeological record at Mecca was basically non-existent before 900 CE. I had expected them to defend



the opinion that ancient Mecca was a walled city with houses, gardens, public buildings and temples. They shook their heads and said, “There was nothing like that there.”

When construction began on the Abraj Al-Bait complex of seven skyscrapers in Mecca in 2004, there was a stir of interest in the archeological community, wondering what the construction might reveal about the ruins under Mecca. In the end, the only ruins that were disturbed was that of the 18th-century Ottoman Ajyad Fortress. Truly there was no great city under Mecca.

298 Sūra 6:92 (Yūsuf Alī)

299 Serageldin, I. Shluger, E. and Martin-Brown, J., 2001, pg 8

300 http://www.readingislam.com/servlet/Satellite?cid=1256909707756&pagename=IslamOnline-English-AAbout_Islam%2FAskAboutIslamE%2FAskAboutIslamE - Retrieved September, 2011

27. Described as the “center of the trade route”

There are numerous occasions where caravans are mentioned as originating from the Holy City, and indeed Muḥammad’s uncle Abū Ṭālib was a merchant who regularly sent caravans on trading missions.³⁰¹

Later, Muḥammad married Khadija, who also managed caravans of camels.³⁰² Still later when living in Medina, Muḥammad would raid Meccan caravans, some which consisted of as many as three thousand men.³⁰³ While Muslims are adamant that Mecca was the center of the trade route, modern historians give us a different picture. Dr. Patricia Crone tells us:

*“Mecca was a barren place, and barren places do not make natural halts, and least of all when they are found at a short distance from famously green environments. Why should caravans have made a steep descent to the barren lands of Mecca when they could have stopped at Tā’if? Mecca did, of course, have both a well and a sanctuary, but so did Tā’if, which had food supplies, too”.*³⁰⁴

Furthermore, Dr. Crone asks,

*“What commodity was available in Arabia that could be transported such a distance, through such an inhospitable environment, and still be sold at a profit large enough to support the growth of a city in a peripheral site bereft of natural resources?”*³⁰⁵

Many people have imagined that the caravans carried incense, spices, and other exotic goods, but according to research by Kister and Sprenger, the age of frankincense was over and the Arabs now engaged in a trade of leather and clothing - hardly items which could have founded a commercial empire of international dimensions.³⁰⁶

There was one major trade route traveling north-south along the mountains of Arabia. This trade route connected the incense growing areas with the Mediterranean civilizations. While this route was important for thousands of years, but the time of Muḥammad, maritime routes had the upper hand. At the same time, the use of incense had fallen to an all time low. However, even when considering the north-south trade route at its height, the “center of the trade route” does not describe Mecca as it was not even a stopping place on the caravan route. See the map on the next page.

301 Ishāq, page 79

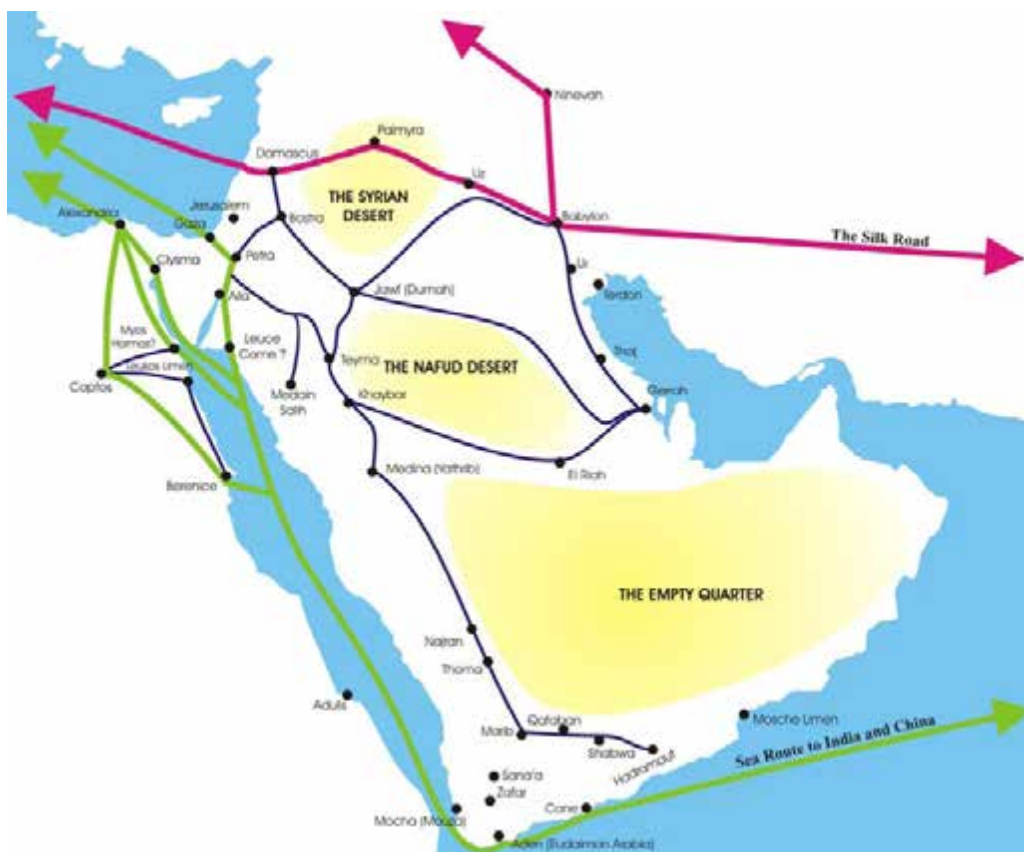
302 Ishāq 119, page 82

303 Ṭabarī, Vol. 7, page 110

304 Crone, 1987 page 6-7; Crone-Cook, 1977, page 22

305 Crone, 1987, *Meccan Trade and the Rise of Islam*, page 7

306 Kister 1965, page 116; Sprenger, 1869, page 94 addressing Ṭabarī 7:19



Left: The city of Mecca is south of the city of Medina, and was never part of the major trade networks in Arabia. On the other hand, the city of Petra was known for its major role in conducting trade throughout Arabia.

Below: A worn "camel caravan" carving in the siq at Petra.



28. Mecca missing on early maps

One would expect that a major merchant city in Arabia would be mentioned on early maps. Such maps never claimed to show every village and settlement, but certainly sought to place significant and famous cities. Surprising as it may seem, not one map before 900 CE even mentions Mecca. This is 300 years after Muhammad's death.

Over the years I have gathered copies of many ancient maps of Arabia and have diligently translated and transcribed them, but never once did I find Mecca mentioned on an early map. Muslims often quote Ptolomy's map of Arabia claiming that Macoraba is actually Mecca. However, their only supporting arguments are that the name starts with "M" and that it is located in central Arabia. In 2013, I carefully plotted Ptolomy's map using his four river coordinates and known city locations, and then compared these with modern maps of Arabia. Macoraba became Al-Mahabishah in northern Yemen, and was not close to Mecca. You can find this paper freely available on the Internet at various locations.³⁰⁷

It is clear that Mecca is never shown on a map, and indeed the mention of Mecca does not appear in any literature prior to 740 CE (approximately 122 years after the Hijra) when it first appears in the *Continuatio Byzantia Arabica*.

307 Gibson, *Suggested Solutions for Issues Concerning The Location of Mecca in Ptolemy's Geography*, available at <http://stpt.ca/islam.html>

29. The Holy City produced large armies

Apparently Mecca had no trouble in raising large numbers of men to work large caravans and march in their armies. The following chart is information gleaned from al-Ṭabarī's History:

| Source | Year AH | Event | Size of Meccan Army |
|---------------------|---------|--------------------------|---|
| Al-Ṭabarī 7I, pg 13 | Year 1 | Expedition to al-Abwa | 300 Meccan horsemen |
| Al-Ṭabarī 7, pg 15 | Year 2 | Raid on Meccan caravan | 100 Meccan men, 2,500 camels in caravan |
| Al-Ṭabarī 7, pg 90 | Year 2 | Expedition of al-Sawiq | 200 Meccan soldiers |
| Al-Ṭabarī 7, pg 98 | Year 3 | Expedition to al-Qaradah | 20,000 dirham captured from caravan |
| Al-Ṭabarī, 7 pg 110 | Year 3 | Expedition to Uḥud | 3000 Meccan soldiers, 200 cavalry |
| Al-Ṭabarī 8, pg 13 | Year 5 | Battle of the Trench | 10,000 Quraysh soldiers |

When one considers the number of soldiers and camels that the Meccans could raise despite their losses in battles year after year, one would expect Mecca to be a very large city. However, archeological evidence points to Mecca being a small place in a harsh environment. How then could it have produced such armies?

30. There is scarce rainfall in Mecca

Mecca averages 4.3 inches of rain per year (11 cm). With its high desert temperatures and barren conditions, this is scarcely enough to grow any vegetation at all, let alone grow enough food to support a large population.³⁰⁸ It is hard to imagine a large city, able to produce ten thousand soldiers surviving in this harsh environment, without leaving behind some evidence of large scale waterworks, aqueducts and irrigation. Petra on the other hand has adequate rainfall for crops, as well as evidence of large scale waterworks, aqueducts and irrigation.³⁰⁹

31. The original Holy City had grapes growing in it

“By Allāh, I never saw a prisoner better than Khubaib. By Allāh, one day I saw him eating of a bunch of grapes in his hand while he was chained in irons, and this was not the time of fruit in Mecca.”³¹⁰

Here we have reference to ancient Mecca having a time of fruit harvest, as well as grapes growing in and around it. Once again, it is hard to imagine this happening where Mecca is located today. Based on the average rainfall in the Mecca area, and paleoclimate records, there was insufficient moisture for grapes to grow in the Mecca area even during the time of Muḥammad.

308 http://jrcc.sa/reports_files/1985_2010Reports/Jeddah.RTF “Climate Data for Saudi Arabia,” Jeddah Regional Climate Center. Retrieved October 29, 2015.

309 Ortloff, C.R. (2005) ‘The Water Supply and Distribution System of the Nabataean City of Petra (Jordan), 300 BCE– AS 300’, *Cambridge Archaeological Journal*, 15(1), pp. 93–109

310 Ṣaḥīḥ al-Bukhārī Ḥadīth 4:281

32. The original Holy City had trees

*Once when I was with the Prophet in Mecca and we went out into one of its districts in the neighbourhood, not a mountain or tree which confronted him failed to say, "Peace be upon you, Messenger of Allāh." Tirmidhi and Darimi transmitted it.*³¹¹

This is an interesting reference to both 'districts of Mecca' and 'trees.' The ancient village of Mecca left a very small archeological footprint and didn't have much for districts, let alone trees. This is reinforced by Ibn Hishām: *When they came to Mecca they saw a town blessed with water and trees and delighted with it, they settled there.*³¹²

Ibn Ishāq mentions trees again a little later when he tells us that the people of Mecca were reluctant to cut down trees in the sacred area.³¹³ The presence of trees and plants in ancient times can be easily tested by the presence of spores and pollens in undisturbed ancient soil.³¹⁴

33. Grass grew in the original Holy City valley

*(Muḥammad) ... would go forth for his affairs and journey far afield until he reached the glens of Mecca and the beds of its valleys where no house was in sight.*³¹⁵

*One night, the Prophet was unable to sleep and said, "Would that a righteous man from my companions guarded me tonight." Suddenly we heard the clatter of arms, whereupon the Prophet said, "Who is it?" It was said, "I am Sa'd, O Allāh's Apostle! I have come to guard you." The Prophet then slept so soundly that we heard him snoring. According to Abū 'Abdullāh: 'Ā'isha said that Bilal said, "Would that I but stayed overnight in a valley with Idhkhir and Jalil (two kinds of grass) around me (i.e., in Mecca)." Then I told that to the Prophet.*³¹⁶

It is hard to believe that this was written about the Mecca we know today, as the area around Mecca is completely desert sand where no grass grows naturally, nor is there any evidence that the area was ever irrigated and able to support grass and fields in the past.

34. The origins of the Black Stone

The physical properties of the Black Stone were described in the 19th and early 20th centuries by Euro-

311 Ṣaḥīḥ al-Tirmidhi Ḥadīth 1535

312 Guillaume, 2006, pg 46 and 72, Ibn Hishām 23

313 Guillaume, 2006, pg 53

314 Abdel Khalik, Kadry Species richness of the catchment area of Al-Baha region, Saudi Arabia, *Bothalia Journal*, May 2015, plus various studies by Dr. Kadry of the Umm Al-Qura University, Mecca

315 Ishāq 151, pg 105, and Ibn Hishām 51

316 Ṣaḥīḥ Al-Bukhārī Ḥadīth 9:337

pean travelers in Arabia who visited the Ka'ba in the guise of pilgrims. The Swiss traveler Johann Ludwig Burckhardt, who visited Mecca around 1815 disguised as a pilgrim, provided a detailed description in his 1829 book *Travels in Arabia*.³¹⁷

It is an irregular oval, about seven inches in diameter, with an undulating surface, composed of about a dozen smaller stones of different sizes and shapes, well joined together with a small quantity of cement, and perfectly well smoothed; it looks as if the whole had been broken into as many pieces by a violent blow, and then united again. It is very difficult to determine accurately the quality of this stone which has been worn to its present surface by the millions of touches and kisses it has received. It appeared to me like a lava, containing several small extraneous particles of a whitish and of a yellow substance. Its colour is now a deep reddish brown approaching to black. It is surrounded on all sides by a border composed of a substance which I took to be a close cement of pitch and gravel of a similar, but not quite the same, brownish colour. This border serves to support its detached pieces; it is two or three inches in breadth, and rises a little above the surface of the stone. Both the border and the stone itself are encircled by a silver band, broader below than above, and on the two sides, with a considerable swelling below, as if a part of the stone were hidden under it. The lower part of the border is studded with silver nails.

The Black Stone has also been described as an agate, a piece of natural glass or most popularly, as a stony meteorite. It is evidently a hard rock, having survived so much handling over the years. A significant clue to its nature is provided by an account of the stone's recovery from the Qarmatians.³¹⁸

In 930 CE, the Qarmatians attacked Mecca during the pilgrimage season insisting that it was not the correct Qibla. They killed many residents and pilgrims, and removed the Black Stone. It is believed that the stone was taken to Bahrain. Over 20 years later, it was eventually returned to Mecca, this time broken into several pieces. A test was performed to prove that it was not a clever forgery. The stone floated in water, which many Muslims took to be a miracle, however this is very common for black pumice stone.³¹⁹



It has been suggested that the Black Stone may be a glass fragment from the impact of a fragmented meteorite some 6,000 years ago at Wabar crater in the Rub' al Khali Desert (Empty Quarter) some 1,000 km east of Mecca. The craters there are

Left and below: During its history the black stone was broken into eight parts. Today pilgrims may touch or kiss the pieces, which are held together in mortar surrounded by a silver casing.



317 Burckhardt, *Travels in Arabia*, page 137

318 al-Nadim, *Fehrest*, pp. 186f. See also page 272

319 http://www.irfi.org/articles4/articles_5001_6000/Al-hajr%20aswad.htm

noted for their blocks of silica glass, fused by the heat of the impact and impregnated by beads of nickel-iron alloy from the meteorite (most of which was destroyed in the impact). Some of the glass blocks consist of shiny black glass with light colored interiors and gas-filled hollows, which allows them to float on water. However, recent dating of meteorite remains from the Wabar crater date the event at less than 260 years ago.³²⁰

Is it possible to connect the Black Stone with the Nabataeans of Petra? From ancient time, the Nabataeans have venerated special rocks. It is thought that the worship of rocks has to do with Dushara the god of mountains, or specifically the Edomite mountains around Petra. Throughout these mountains it is possible to view god-rocks. Usually they are in the form of a square block, although there are also triangles.



As the Nabataeans and Edomites were both descendants of Abraham they had a monotheistic background and were reluctant to put human characteristics onto gods, although in later years they did add faces to some of their god-blocks. (left) Usually the god-rocks were simply large square blocks of stone or square block shapes carved in a niche. It is possible to see many of these around the city of Petra.

Maximus of Tyre in his book *Philosophoumena* in the 2nd century CE recorded: “The Arabs serve I know not whom, but I saw this statue which was a square stone.”³²¹

The Suda Lexicon, which was compiled at the end of the tenth century, refers to older sources which have since been lost. It states: *Namely the god [theos] Ares, is in Petra in Arabia. The god Ares is revered amongst them; for this one they especially honor. The statue is a black stone, square in shape, unchiseled, four feet tall, two wide: it is mounted on a plinth of beaten gold. To this [deity] they pour forth the blood of the sacrificial animals on this; and this is their libation. And the whole house is rich in gold, and [contains] many votive offerings.*³²²

Was this the same black stone? The stone in Mecca today was smashed to pieces during the Qarmatian rebellion, so perhaps only pieces of it were returned to Mecca. While we will never know for sure, this does confirm that the early Arabs in Petra worshiped black stones, recognizing that deities should be represented by a geographical shape and not human or animal form.

320 Prescott, page 109, *Dating of the Wabar meteorite craters, Saudi Arabia*

321 Trapp, M. (1997) *Maximus of Tyre*

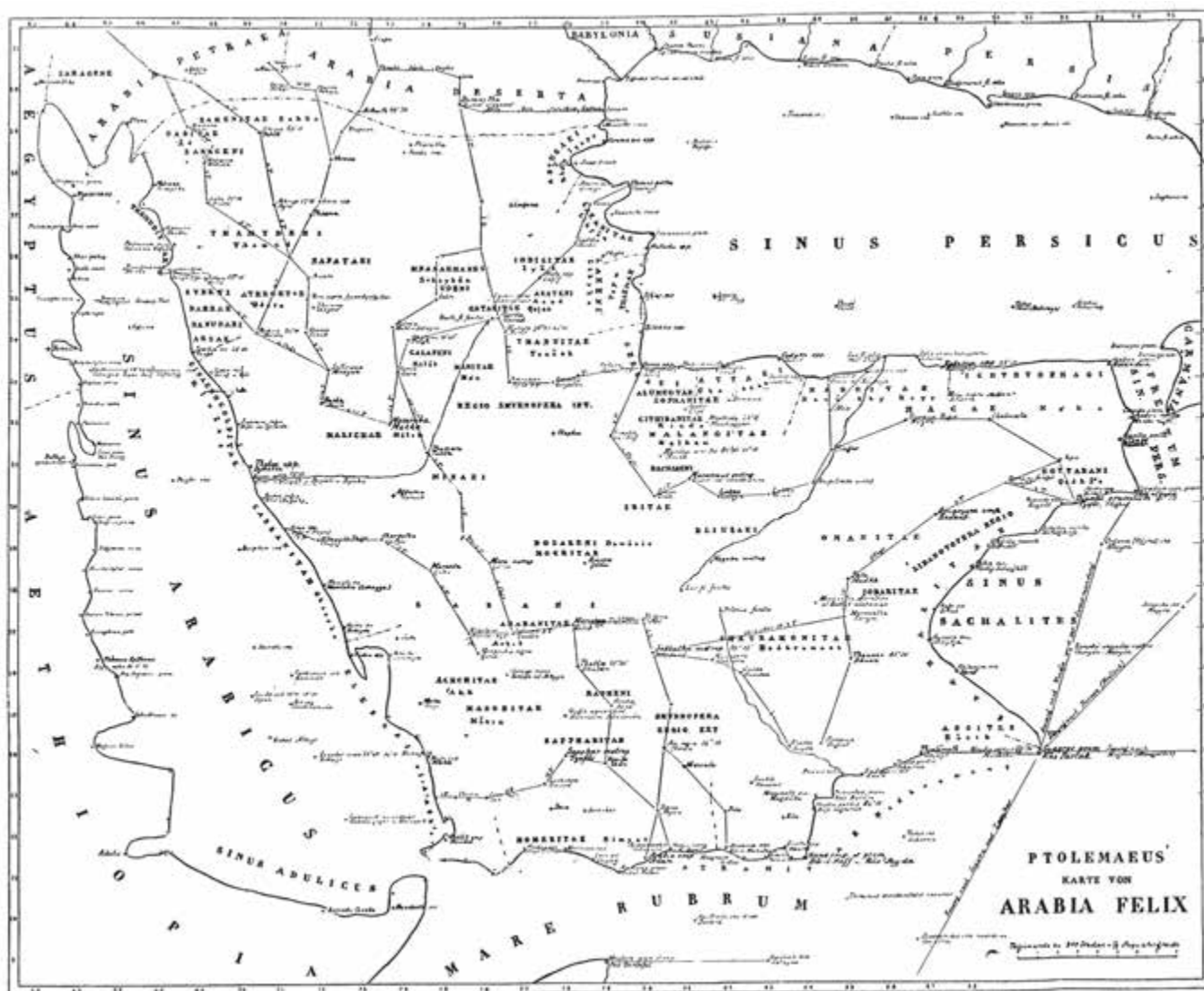
322 Oleson, 1995

35. Cartographic evidence

The science of mapmaking goes far back into history, farther back than the time of Muḥammad. Thus, by 550 CE maps of the Middle East and the Mediterranean Sea had become more and more useful. To the modern reader, however, some of these maps are difficult to make out. First, many maps were not oriented with the top of the map being north. Many early Christian maps were oriented towards the east, where Christ would return. Thus the English word 'orientation' came from 'eastern oriented' maps, or 'towards the orient.'³²³ The Nuzi map from the age of Sargon of Akkad (2300 BCE) in northern Iraq uses the north, south, east and west winds as coordinates, with east at the top and north on the left.

Ptolemy's map

As mentioned earlier, Ptolemy's description of Arabia contains no reference to Mecca. It is as if it never existed. Indeed, in his day, it probably didn't exist. If you examine the map below, Mecca does not exist, but Arabia Petraea is clearly written across the top of Arabia.



323 Wilford, 1982, *The MapMakers*, page 9

The Madaba map

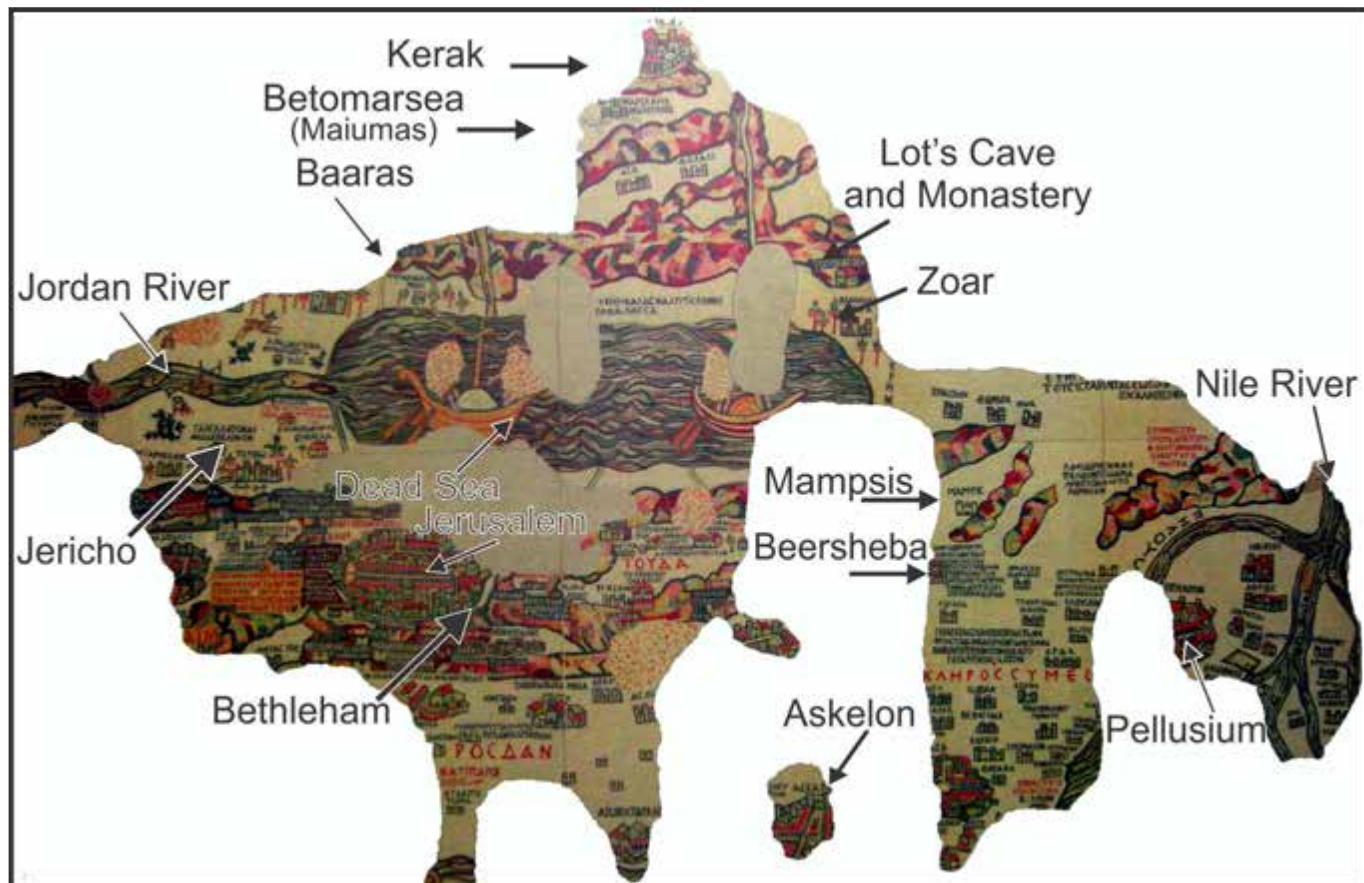
Another early map is the famous Madaba map found under the floor of the early Byzantine church of Saint George in the city of Madaba, Jordan. Only 25 square meters of the original map are preserved.

The map contains a total of 156 locations or memoirs, and is comparable with the well known treatise on biblical places written in Greek about 395 CE by Eusebius of Caesarea, and translated into Latin by Jerome around 490 CE.

The Madaba Map on the next page is dated between 542 and 570 CE (by dating the buildings depicted in Jerusalem). Under Umayyad ruler Yazīd II, Muslim zealots removed many of the pictures in the church and damaged the map. The church was abandoned in 746 CE (128 AH) when an earthquake brought down the building, preserving the remains of the map under rubble.

The map was rediscovered in 1894, during the construction of a new church on the site. The preservation of this map under rubble since 128 AH provides us with a clue about which parts of the map the zealots destroyed. The map faces east, so imagine you are in the middle of the Mediterranean Sea looking east as in the satellite photo to the right.

Notice that Lot's cave in Zoar is present and the mountains up to Kerak are present, but the area where Petra would have been, right



above Kerak is demolished. Damascus is removed, which would have been on the far left. The Negev, homeland to the Nabataeans, is also erased. Was this just random vandalism or were the Muslims offended or trying to obliterate something when they removed parts of the map?

Yazīd II made an edict against images³²⁴ around 740 CE, during the time of confusion when mosques pointed to both Petra and Mecca. It may be that angry Muslims entered churches and demanded the ancient mosaics be either covered over or removed. Many churches chose to overlay their floors with new patterned mosaics rather than destroy the beautiful images of people and animals.

This action preserved the original floors of many churches for us today. Some of these floor mosaics are on display in the ancient town of Madaba. However, it appears that the Madaba map was destined for destruction, particularly the area that showed the location of Petra.

36. The Abbasid Writers

After the Hijra, Muḥammad and his followers began to use Medina as their capital city. In many ways, Islam did not exist until it came into being in Medina. Before that, Islam was simply a series of revelations given to Muḥammad.

In Medina, Islam became a reality as the new Islamic customs and laws were implemented. Islam is more than a personal faith; it is a way of life for a Muslim community. This is why Muslims around the world rightly refer to the year of the Hijra as Year One of the Islamic calendar. For western people this is sometimes hard to comprehend, for they consider faith to be an individual thing, while Muslims see faith as a community.³²⁵ Medina then became the center of the Muslim empire until the Umayyad caliphs established their rule from Damascus. This rule continued until the Abbāsids wrestled control from the Umayyad caliphs, and the center of power was transferred to Iraq. As a result, early Muslim historians frequently mention the cities of Medina and Damascus, while the city of Mecca is hardly mentioned at all.

Once the Abbāsids were firmly entrenched and their rule secure, they set about unifying their empire by solidifying the various conflicting political, military and religious elements, bringing them all firmly under their control. Since almost all Islamic history is written after this time of Abbāsid solidification, one has to read carefully to understand what took place earlier, and why it happened. There is no argument that under Abbāsid rule massive religious, scientific and academic projects were undertaken. The Abbāsid rulers encouraged scholarly development that would not only present the early years of Islam in a good light, but would also confirm their own right to ruling the empire.

It is during this period of time that the great Islamic historians wrote their treatises on Islamic history. Today we can categorize these writers into various groups including those that gathered ḥadīths, those that wrote histories, those that compiled works of literature and others who wrote scientific treatises. It is interesting that 200 years after the Hijra, Islamic scholars were classified into two groups; the Tra-

324 Hoyland, 1977, page 414 footnote 88 and page 596, footnote 14

325 Sura 3:110

ditionalists (muḥaddithūn) and the reformers or Jurists. (fuqahā). Ibn Hishām, who was a very active early reformer, refers to traditionalists twenty four times in his notes attached to Ibn Ishāq's biography of Muḥammad, *Sīrat Rasūl Allāh*.

Unfortunately we do not have Ibn Ishāq's original book, as Ibn Hishām unabashedly edited and corrected what he called "grievous errors" in the earlier book. It is also interesting to note that when editing the first 130 pages of *Sīrat Rasūl Allāh* which cover the events before Muḥammad's life, Ibn Hishām never mentions the traditionalists. It is only when dealing with the actual life of Muḥammad that Ibn Hishām begins to refer to the views of the traditionalists.

Sixty-five years after Ibn Hishām, Abū Ḥanīfa presented a more modern understanding of Traditionalists (muḥaddithūn) and the Jurists (fuqahā) in his book *Al-Fiqh al-Akbar* around 896 CE (283 AH).³²⁶ This was a very tumultuous time as the Qarmatian rebellion was at its height.³²⁷ This revolt happened when the people of the central Arabian Peninsula rose up and protested that Mecca was not the correct Holy City, forcibly keeping pilgrims from worshiping at Mecca. In modern times, the term traditionalist most often describes orthodox Sunni Islam as distinguished from Salafism and Islamism.

After Ibn Hishām, the rest of the great Islamic historians present us with an Islamic history that was tailored to suit the political and religious worldview of the Abbāsīd rulers of their day. While Ibn Hishām used the authority of Ibn Ishāq for his writings, later writers relied on a list of people who passed on the knowledge to others, who passed it on to others. This chain of narrators became known as the *isnād* (supporters). Thus, *isnād* consisted of a chronological list of the narrators, each mentioning the one from whom they heard the ḥadīth, until mentioning the originator of the report along with the report (*matn*) itself. All of the reports and sayings of early Islam were then judged by their *isnād* and classified as being strong or weak, depending on the completeness of the chain of narrators and the presence of Islamic authorities among the chain.

Some of these historians gathered many traditions or reports. al-Bukhārī is said to have collected over 300,000 ḥadīth, but then he eliminated all but 2,602 which he claimed were the only true and trustworthy ones. It is unfortunate that these historians, including al-Bukhārī, collected their reports 250 years after the fact, and much of their choosing was based on the religious teachings of their day. Because so many of the earlier reports were then destroyed, we have no way of studying the earlier ones for ourselves.

Today, this would be similar to trying to write the history of the American War of Independence (1775-1783) based solely on the hearsay of people alive today, who heard something from their father or grandfather, who heard it from their father or grandfather and so on, back to the actual event. Imagine writing a history with few early references, and using as your major authority the stories that have been passed down from one generation to the other.

At least Ibn Hishām admits that there were traditionalists who viewed things differently than the popular opinions of the day. However, I doubt that we will ever be able to understand all of the conflicting opinions that existed in Ibn Hishām's day.

326 Maghnisawi, 2007, *Imām Abū Ḥanīfa's Al-Fiqh Al-Akbar Explained*

327 See Qarmatian rebellion page 272

37. Literary vacuum

It is my belief that there was also a literary vacuum in the early Muslim empire created by zealous Muslims who destroyed books and manuscripts, erased inscriptions, burned libraries and destroyed all literature except Islamic writings, most of which were bits and pieces of what people remembered of the revelations that Muḥammad gave. The destruction of written materials by the Islamic forces has been well documented over the last two centuries, but western historians have been reluctant to attribute the Muslim armies with such actions. Edward Gibbon comments in his book *The Decline and Fall of the Roman Empire* that if indeed the Muslim caliphs ordered the burning of libraries “the fact indeed is marvelous.”³²⁸ Gibbon’s source was the *Specimen Historiae Arabum* of Gregory Abulpharagius, a thirteenth-century Jewish doctor known as Bar Hebraeus, translated in a seventeenth-century Latin book (1649) by Edward Pococke. Gibbon protested that “*the solitary report of a stranger who wrote at the end of six hundred years on the confines of Media is overbalanced by the silence of two annalists of a more early date, both Christians, both natives of Egypt, and the more ancient of whome, the patriarch Eutychius [AD 876-940] has amply described the conquest of Alexandria.*”³²⁹

Gibbon’s comments concerned an alleged letter from Caliph ‘Umar to Amrou, the leader of the Muslim armies in Alexandria, who had asked the caliph what to do with the thousands of manuscripts that he found in warehouses in Egypt. Here is the caliph’s reply:

“As for the books you mention, here is my reply. If their content is in accordance with the book of Allāh, we may do without them, for in that case the book of Allāh more than suffices. If, on the other hand, they contain matter not in accordance with the book of Allāh, there can be no need to preserve them. Proceed then and destroy them.”

However Muslim writers also refer to this event. The Muslim writer Ibn al-Qifti (1172-1248) tells us that the books were distributed to the public baths of Alexandria where they were used to feed the stoves which kept the baths comfortably warm. Ibn al-Qifti writes that “the number of baths was well known but I have forgotten it. They say, that it took six months to burn all that mass of material.”³³⁰ Eutychius tells us that there were four thousand baths that received books from the Alexandrian library.³³¹

Another record of the exchange between the Muslim General Amrou and the Egyptian patriarch can be found in *Patrologia Orientalis*.³³²

328 Gibbon, 1838, page 452, *The History of the Decline and Fall of the Roman Empire*

329 Gibbon, 1838

330 Tārīkh al-Ḥukamā (*Chronicle of Wise Men*) ‘Alī ibn Yusaf al-Qifti, Ikhbar al-‘Ulama bi Akhbar al Ḥukamā, Edited by Julius Lippert, Leipzig, 1903) (Mones & Parsons, pages 389-392)

331 Alter, 1658, Arabic/Latin, and Pococke & Selden, 1654, page 316

332 Volume I, 1903, pages 494 – 498) A further Syriac manuscript (Add. MS 17193) also attests to this, and was published with commentary in the Journal Asiatique, March- April 1915. (Series 11, Volume 5, pages 225-279)

An excellent compilation on the destruction of the books in Alexandria can be found in Luciano Canfora's book "*The Vanished Library, A Wonder of the Ancient World*."³³³

This burning of books, however, did not start in Egypt, but was begun in Persia. Caliph 'Umar's armies met with the Persian armies in the battle of Qadisiyyah in 14 AH. When the battle was finished, thousands lay dead on each side. The Muslims however, leapt upon the riches that had been left behind.

Al-Ṭabarī³³⁴ tells us, "The spoils and the wealth were gathered; a quantity such as this had never been gathered, neither before al-Qadisiyyah nor after it."

From Qadisiyyah the Muslim armies, numbering 15,000 and led by Saad, marched against the city of Ctesiphon, the capital of the Sassanian Empire. In early January 637 CE, the Muslim advance guard reached the outskirts of Ctesiphon and laid siege to the city for two months. Eventually the city fell, and the Muslims occupied it. During the fighting, the palaces and the Zoroastrian library at Ctesiphon were burned.³³⁵

Another example of book burning can be seen when the Muslim invaders reached India some years later. The library of Nālandā was the most renowned repository of Buddhist knowledge in the world at the time. Its collection was said to comprise hundreds of thousands of volumes, so extensive that it burned for months when set aflame by Muslim invaders. The library had three main buildings as high as nine stories tall. The story of this destruction (1198 CE) was told in 1243 by an eye-witness to the Persian historian Minhaz. In his book *Tabaquat-I-Nāṣiri*, he reported that most of the inhabitants of the place were Brahmins with shaven heads. They were put to death. Large numbers of books were found there, and when the Muslims saw them, they called for some person to explain the contents. But all of the learned men had been killed. When it was discovered that the whole fort and city was a place for study (Nālandā University) the remaining monks were burned alive or beheaded, and the burning of the library of Nālandā continued for several months.³³⁶

Even Christian churches were to suffer damage. The "Edict of Yazīd," issued by the Umayyad caliph Yazīd II in 722-723 CE ordered the destruction of crosses and Christian images within the territory of the caliphate. In present-day Jordan there is ample archaeological evidence that images from the mosaic floors of some, although not all, of the churches that stood at this time were removed.³³⁷ One can only surmise that the city of Petra is today bereft of all inscriptions because of the actions of zealous Muslims during Yazīd's reign.

In the end, the only book to survive in Arabia was the Qur'ān. However, even here historians have struggled. It seems that most of the Qur'ān was retained in oral fashion rather than written form. While

333 Canfora, L. (1990). *The Vanished Library, A wonder of the ancient world* (2nd ed.). Berkley: University of California Press

334 Ṭabarī, Vol 12, page 125

335 Kroger, 1993, *Ctesiphon*

336 Dutt, 1996, Part V, 3, *Buddhist Monks and Monasteries of India*

337 Grabar, 1984, page 155-156, *L'iconoclasme byzantin: le dossier archéologique*

the Arabs were great memorizers and had the ability to retain the entirety of the Qur'ān, the retention of materials in an oral tradition suffers from two difficulties. First, the accuracy of the memories of the individuals involved must be perfect. In the case of the Qur'ān, arguments arose over various verses, how they should be rendered, and if they should or should not be included in the whole.

Second, the problem of transferring knowledge from the learned to the novice is often a difficult step. In the case of the Qur'ān, most of the men who had memorized the sayings of Muḥammad were also warriors. As is often the case, warriors die in battle, and their knowledge of the Qur'ān perished with them. This is amply illustrated in the Battle of Yamama when an estimated 450 men who had memorized the Qur'ān were killed.³³⁸

Al-Bukhārī tells us:³³⁹

Hudhaifa bin Al-Yaman came to 'Uthmān at the time when the people of Sham and the people of Iraq were waging war to conquer Arminya and Adharbijan. Hudhaifa was afraid of their (the people of Sham and Iraq) differences in the recitation of the Qur'ān, so he said to 'Uthmān, "O chief of the believers! Save this nation before they differ about the book (Qur'ān) as Jews and the Christians did before." So 'Uthmān sent a message to Ḥafṣa saying, "Send us the manuscripts of the Qur'ān so that we may compile the Qur'ānic materials in perfect copies and return the manuscripts to you." Ḥafṣa sent it to 'Uthmān. 'Uthmān then ordered Zaid bin Thābit, 'Abdullāh bin Az-Zubair, Sa'īd bin al-Āṣ and 'Abdu-r-Raḥmān bin Ḥārith bin Ḥishām to rewrite the manuscripts in perfect copies. 'Uthmān said to the three Quraishi men, "In case you disagree with Zaid bin Thābit on any point in the Qur'ān, then write it in the dialect of Quraish, the Qur'ān was revealed in their tongue." They did so, and when they had written many copies, 'Uthmān returned the original manuscripts to Ḥafṣa. 'Uthmān sent to every Muslim province one copy of what they had copied, and ordered that all the other Qur'ānic materials, whether written in fragmentary manuscripts or whole copies, be burnt. Sa'īd bin Thābit added, "A verse from Sūrat Ahzab was missed by me when we copied the Qur'ān and I used to hear Allāh's apostle reciting it." So we searched for it and found it with Khuzaima bin Thābit Al-Anṣārī. (That verse was): "Among the believers are men who have been true in their covenant with Allāh."

Eventually a more or less complete copy of the Qur'ān was assembled. But there were some who felt that more verses should have been included.

Al-Bukhārī reports to us that these few copies were not duplicated, but remained with the caliphs.

The manuscript on which the Qur'ān was collected, remained with Abū Bakr till Allāh took him unto him, and then with 'Umar till Allāh took him unto him, and finally it remained with Ḥafṣa, 'Umar's daughter.³⁴⁰

This means that during the life of Caliph 'Umar, only five or six copies of the complete Qur'ān existed in all of Arabia.

The problem that resulted was a dearth of copies of the Qur'ān in the Umayyad period. On the next page is a chart that illustrates the number of known copies of the early Qur'ān that survived to this date. These

338 Ṣaḥīḥ Al-Bukhārī ḥadīth 6.201 & 9.301

339 Bukhārī's Volume 6, Book 61, Number 510, 33.23

340 Ṣaḥīḥ Al-Bukhārī, Volume 6, Book 60, Number 201

are then compared with the early surviving copies of the New Testament, simply so we can compare the number of copies of other early religious writings that were in existence over a period of time.

The transmission of the New Testament can be compared with the transmission of the Qur'ān. The ample evidence of early Biblical manuscripts and the low degree of error between them is significant, but missing in regards to the Qur'ān. While the Qur'ān is a truly ancient manuscript, the question has to be asked, is it what Muslim clerics claim: an unadulterated copy of the original given to Muḥammad? Or was it changed or molded in some way by the political forces that followed Muḥammad?

As this chart demonstrates, there was a literary vacuum in Arabia during the first 200 years of Islam. Very few copies of the Qur'ān were in existence, in fact Crone and Cook state, “There is no hard evidence for the existence of the Koran in any form before the last decade of the seventh century, ...”³⁴¹ Furthermore they suggest that in the 2nd century of Hijra the textual state of the Qur'ān, “... may have differed considerably in content from the Koran we now know.” This is also the view of Wansbrough who thought the “canonization” of the Qur'ān was not completed until the 2nd or 3rd century AH at the earliest.³⁴²

The Abbāsīd writers had few if any documents to oppose them. Most of the Quraysh tribe who were knowledgeable about the early days had long since died, or now lived on the fringes of the empire. Any old Qur'āns in existence could be fully accepted, and the owners convinced that what they had was only a partial Qur'ān. The Abbāsīds could publish “full” versions of the Qur'ān that contained all of the verses, including the ones about the change of qibla. In this way, older versions of the Qur'ān would still be revered, but the newer versions would have the added verses, such as Sūra 2.143-145 which tells us that the qibla was changed.

| Comparison Era | Islamic period | The Qur'ān | New Testament |
|------------------|-----------------------------|--|--|
| First 70 years | Four Rightly Guided Caliphs | Five or six reported copies (Abū Bakr's) which did not survive, plus some scattered fragments survive. | A handful of fragments survive the first 70 years. |
| 70 – 150 years | The Umayyads | Approximately 30 manuscripts survive, none of them complete. | More than 630 copies after 150 years. |
| 150 – 300 years | The first Abbāsīd rulers | Many fragments and some manuscripts including some from the Ṣan'ā manuscripts, none of them complete. | More than 5,600 copies after 300 years. |
| 300 -- 500 years | The Abbāsīd writers. | Dozens of copies, a few of them complete. | More than 13,000 copies after 500 years. |

See: <http://www.islamic-awareness.org/Quran/Text/Mss/hijazi.html>, which provides detailed information about which verses appear in which Qur'āns. None of the early Qur'āns were complete like present day copies.

³⁴¹ Crone, 1977, page 3

³⁴² Wansbrough, 2004, page 49-52, *Quranic Studies: Sources and Methods of Scriptural Interpretation*.

I did not place the above chart in this chapter to belittle any documents, but to simply demonstrate that compared to the Qur'ān, there were far more copies of the Gospels in circulation during the first one hundred and fifty years of Islam. I say this to demonstrate that there was indeed a literary vacuum at this time. Many of the warriors had died in battle, and the mass production of Qur'āns under the Abbāsids had not yet begun. It was during this time that Ibn al-Zubayr managed to move Masjid al-Ḥarām into Saudi Arabia, while the rest of the Islamic world was completely distracted by external wars as well as civil wars and uprisings.

38. The Abbāsīd historians

In the book *Qur'ānic Geography*, Appendix A includes some of the major Islamic historians and their dates, demonstrating how many years lay between them and the early events that they wrote about. While it is difficult to tell who the creative writers of history were, I have selected four Islamic writers who I believe typify the progression of Islamic thought from 200 CE onward. They were chosen because they are responsible for the bulk of Islamic history that has come down to us today.

1. Ibn Hishām – begins the practice of editing past writings

Hishām ibn 'Abd al Malik was born in Baṣra, Iraq and died in Fuṣṭāṭ, Egypt, either in 218 AH or some time later. Known as Ibn Hishām, he became an Arabic philologist combining linguistics and literary skills in his work. Unfortunately for us, it appears that he meddled with previously written Arabian histories, editing them so that they fit into the political and religious views of his time. Since all copies of the earlier works have been destroyed, we now only have Ibn Hishām's edited version of the earlier work. This is unfortunate, as it means that the very earliest Islamic writings now date nearly 200 years after the death of Muḥammad and are known to be edited by a later writer. This is documented by his list of notes at the end of *Sīrat Rasūl Allāh* in which he lists some of the changes that he made to the original document.

2. Al-Bukhārī – choosing accounts appropriate to current worldview

Muḥammad ibn Ismā'il al-Bukhārī (810 - 870 CE) is the author of the best known of the six canonical ḥadīth collections of Islam (Sunni). These traditions, or ḥadīth, were called *Ṣaḥīḥ al-Bukhārī* and most Sunni Muslims view this as their most trusted collection of ḥadīth, and it is considered the most authentic book after the Qur'ān.

Early on in Bukhārī's life, his teacher, Ishāq ibn Ibrāhīm al-Hanthālī, better known as Ibn Rahoyah, said to him: "If only you would compile a book of only authentic narrations of the prophet." This suggestion remained in his heart, so he began compiling the *Ṣaḥīḥ*." Al-Bukhārī also said, "I saw the prophet in a dream and it was as if I was standing in front of him. In my hand was a fan with which I was protecting him. I asked some dream interpreters, who said to me, 'You will protect him from lies.' This is what compelled me to produce the *Ṣaḥīḥ*."

Al-Bukhārī then traveled widely throughout the Abbāsīd Empire for sixteen years, collecting those traditions he thought were trustworthy. It is said that al-Bukhārī collected over 300,000 ḥadīth but included only 2,602 traditions in his book. At the time, al-Bukhārī classified the traditions as *ṣaḥīḥ* (trustworthy),

ḥasan (good), and ḍa'if (weak).³⁴³ The weak traditions were then discarded. Bukhārī was not alone in doing this. Around the same time, other Muslim scholars also recognized the complete literary vacuum surrounding the beginnings of Islam, and they also gathered and vetted what people said about Muḥammad. Thus, much of our record of early Islam was edited by al-Bukhārī and the others who gathered ḥadīths after him.

3. Al-Ṭabarī – history seen 300 years later

Al-Ṭabarī was a Muslim scholar who lived from 839 to 923 CE. Al-Ṭabarī's history book is officially titled *Tārīkh al-Rusūl wa al Mulūk*, which means the history of prophets and kings. These 38 volumes provide us with the Islamic view of the history of the world from Adam and Eve up to 915 CE. The first four volumes parallel many things that are found in the Bible. Al-Ṭabarī was his nickname, since he came from Ṭabaristan, which is in Iran south of Tehran.

Al-Ṭabarī knew the Qur'ān by heart when he was 7 years old. While some Hanbalite Sunni Muslims have accused him of having Shi'ite tendencies, there is no basis for this except that he was Iranian. Al-Ṭabarī was a Sunni Muslim, even though he was from Iran. Al-Ṭabarī was first a Shafi'ite, and then later he founded his own school.³⁴⁴ There was discord between different schools³⁴⁵ and the Hanbalites would use violence to intimidate Muslims belonging to other schools.³⁴⁶

4. Yāqūt – geography now unquestioned

Yāqūt ibn 'Abdullāh al-Rūmī al-Hamawī (Yāqūt) (1179-1229 CE) was a Syrian biographer and geographer. "Al-Rūmī" ("from Rūm") refers to his Greek (Byzantine) descent, "al-Hamawī" means that he is from Hama, Syria, and his father's name was 'Abdullāh. The word yāqūt means ruby. He was known for his encyclopedic writings of the Muslim world. Yāqūt was sold as a slave to someone who later moved to Baghdad. Upon recognizing his abilities, Yāqūt's purchaser provided him with a good education. He was later freed, and traveled a great deal. Yāqūt also earned a living copying and selling manuscripts. His book *Mu'jam Al-Buldān* is an encyclopedic geography that he started in 1224 CE and finished around 1228 CE, one year before he died. Since his geography was constructed six hundred years after the death of Muḥammad, it is not very helpful in determining early locations. His book is available today in Arabic in several volumes, and is referred to several times in this study. However, anyone wanting to use Yāqūt to defend Islamic geography must admit that he is a very late writer and not an authority on early and pre-Islamic geography. It is important however, to know that Yāqūt wrote his book because he realized that a complete geography of Islam was necessary, as there was confusion over the location of various places, as we will see when we examine the locations of Ṭā'if, Al-Aqṣa, and Aqaba, along with locations within the holy city itself.

343 Fadel, 1995, pg 161-197, *Ibn Hajar's Hady al-sārī*

344 Ṭabarī Vol.1 pg 62

345 Ṭabarī Vol.1 pg 66

346 Ṭabarī Vol.1 page 71

From these four representative writers (many more are mentioned in *Qur'ānic Geography*) we can see that these historians wrote many years after the events they described. As we mentioned, they used a system of a chain of narrators known as the isnād (supporters) as their authority. This system of isnād consisted of a chronological list of the narrators, each mentioning the one from whom they heard the ḥadīth, until mentioning the originator of the report along with the report itself. All of the reports and sayings of early Islam were then judged by the isnād and classified as being strong or weak, depending on the completeness of the chain of narrators and the presence of Islamic authorities among the chain.

There were problems with isnād, as often conflicting stories were told, and even related by the same narrators. An example of this can be found in al-Ṭabarī's recounting of the story of Isaac and Ishmael. Al-Ṭabarī gives us a list of over ten reports, complete with their supporting isnād, that claim Abraham went to sacrifice Ishmael on the mountain. Then al-Ṭabarī immediately gives us another list of over ten reports, complete with all their supporting isnād, that claim Abraham took Isaac up the mountain to sacrifice him, not Ishmael.³⁴⁷

Clearly both cannot be true, but since al-Ṭabarī cannot prove either one, he provides us with both sides of the argument, and even shows us that some isnād are the same ones on both sides. Obviously people relating these stories to al-Ṭabarī, claiming they heard it from someone who heard it from someone who heard it from Muḥammad, could not clarify whether Muḥammad revealed that it was Isaac or Ishmael that became Abraham's child for sacrifice.

In the end al-Ṭabarī concludes: *The earliest sages of our prophet's nation disagree about which of Abraham's two sons it was that he was commanded to sacrifice. Some say it was Isaac, while others say it was Ishmael. Both views are supported by statements related on the authority of the Messenger of God.*³⁴⁸

If isnād could not be authoritative in this case, how can it be claimed as authoritative in others? One would assume that the writers of history and the collectors of ḥadīths would reject any ḥadīths that referred to Petra. Kamali provides us with seven criteria that were used for rejecting ḥadīths.³⁴⁹

1. The language of the ḥadīth must be eloquent, not rude or crude.
2. The ḥadīth should not contain corruption of previously established knowledge. For example, one rejected ḥadīth reported that Muḥammad stated that Noah's ark circled the Ka'ba seven times before it landed.
3. Ḥadīths must not oppose the Qur'ān.
4. If a ḥadīth fails to pass the test of historicity it must be rejected. For example, one rejected ḥadīth reported that Muḥammad spoke while in a Roman bath, but it is known that there were no baths in Mecca or Medina so it was rejected. Petra however, had a Roman bath right beside the Ka'ba.
5. If the ḥadīth smacks of scholastic fanaticism it must be rejected. For example, someone claiming

347 Ṭabarī, Volume II, page 89

348 Ṭabarī Volume II, page 82

349 Kamali, 2009, pg 76, *The Textbook of Ḥadīth Studies*

to have known Muḥammad and to have followed him but later became a Shi'ite, was rejected by the Sunni writers.

6. When a ḥadīth would have affected large numbers of people, but only one person reported it, then it was rejected. For example, the teaching that no one can touch his sexual organs and then immediately pray was only reported by one writer, but if it was true, then many would have known it, practiced it and reported it.

7. When ḥadīths reported extraordinary large numbers or obviously exaggerated blessings or curses, it was rejected.

Therefore I believe that by the time of the Abbāsīd writers, any ḥadīths that mentioned Petra would have been excluded, and only those that remembered the Holy City as “Mecca” would have been included, simply because, by then it was universally accepted that the Holy City had always been at Mecca.

In the end, the writers of the Abbāsīd period put together a history and picture of Islam that was in accordance with the thinking of their day. Muslims all over the world, then as now, turned to them for their authority on how Islam came into being. However today with modern technology, researchers and archeologists are beginning to put the pieces together, and unravel the Abbāsīd version of history to discover what actually happened in the first years of Islam.

39. The Petra origins of Arabic Language

Over the last one hundred years, scholars such as Anton Baumstark, Günter Lüling, Anton Schall and Alphonse Mingana, Claude Gilliot, Pierre Larcher, John Wansbrough, Christoph Luxenberg³⁵⁰ and a host of others have suggested that the Arabic language found in the Qur'ān is a mixture of earlier Aramaic and the emerging Arabic language. They have suggested that the many expressions of Near-East Aramaic are found throughout the Qur'ān, leading them to suspect that the Qur'ān originated much farther north than Mecca or Medina.

What is interesting is that all of these scholars of language and linguistics look farther north for the origins of Islam. In the same book mentioned above, there is an article by Robert M. Kerr³⁵¹ that delves into the languages of the Arabian Peninsula in more detail.

Kerr points out that the Arabian peninsula was divided into three geographical regions, Arabia Felix, Arabia Deserta and Arabia Petraea. These terms go back to the Roman imperial era, and these three regions also had three distinct linguistic differences. The languages used in Arabia Felix were distinct South Arabian Semitic languages, and included such languages as Sabaean, Minaean, Ḥaramitic, Qatabānian, and Ḥaḍramitic. Altogether, over 10,000 inscriptions have been found that used these languages, and they are very distinct from Arabic.

The region known as Arabia Deserta extended from north of Yemen up into the southern tip of Jordan.

350 Ibn Warraq, *Christmas in the Koran*, Prometheus Books, 2014, Page 21

351 Kerr, Robert M., Aramaisms in the Qur'ān and Their Significance, *Christmas in the Qur'ān*, page 145

The languages in this area are known as the Ancient North Arabian languages, such as Dadanitic, Dumaitic, Hasaitic, Mismaic, Ṣafaitic, Taymanitic, and Thamudic, of which together there are some 40,000 inscriptions. These languages are interrelated Semitic dialects using variants of the South Arabian script, so they cannot be the direct ancestors of Classical Arabic.

Further north was the geographical region known as Arabia Petraea where Aramaic, Greek, and Latin were used. This region had been exposed to Greco-Roman culture for close to a millennium. While the major written languages were Greek, there were also various Aramaic dialects, the most important of which was Syriac. Kerr points out on page 148 that the 6/7th fragment of Psalm 78 found in the Umayyad Mosque at Damascus demonstrates (using areal linguistics) that the Qurʾān is written in the Arabic of Damascus and its environs, i.e. the Heimat of pre-classical Arabic. Kerr believes that the evidence shows that the language of the Qurʾān must be based on a Syro-Palestinian Arabo-Semitic dialect and that the script employed was not that used in Mecca and Medina of the period, but the one used in Arabia Petraea.³⁵²

Kerr points out that Arabic required diacritical dots to be added to the Aramaic alphabet, as the Arabic had more characters. Kerr then goes on to look at the Arabic loan words that appear in the Qurʾān among many other topics.

In 2012, Robert Kerr brought his research and conclusions to the attention of Gerd Puin, who then introduced him to my own research. Kerr had come to a similar conclusion about Islam originating in the greater Petra area by using the linguistic map of early Arabia while I used the Qibla directions of early Islamic mosques.

| name | Arabic | Syriac | name | Arabic | Syriac |
|--------|--------|--------|---------|--------|--------|
| Alaph | ء/ا | ܐ | Lamadh | ل | ܠ |
| Beth | ب | ܒ | Meem | م | ܡ |
| Gamal | ج | ܓ | Noon | ن | ܢ |
| Dalath | د | ܕ | Simkath | | ܫܡܟܬܐ |
| Heh | ه | ܚ | 'E | ع | ܥ |
| Waw | و | ܘ | Peh | ف | ܦ |
| Zain | ز | ܙ | Sad'e | ص | ܥܕܐ |
| Heth | ح | ܚ | Qoph | ق | ܩܦܗ |
| Teth | ط | ܬܬܐ | Resh | ر | ܪܫܐ |
| Yodh | ي | ܝܝܐ | Sheen | ش/س | ܫܝܢ |
| Kaph | ك/ك | ܟܟܐ | Taw | ت | ܬܐ |

40. What about Jerusalem and Al-Aqsa Mosque?

In recent years, some debate has risen over the location of the place known as Masjid al-Aqsa. It is commonly thought by Muslims to be located in Jerusalem, and indeed the mosque there bears this name. But is this mosque really the al-Aqsa mentioned in the Qurʾān?

The Qurʾān names al-Aqsa in Sūra 17:1: *Glory to Allāh who did take his servant for a journey by night from the Masjid al-Ḥarām to the farthest (al-Aqsa) whose precincts we did bless in order that we might show him some of our signs: for he is the one who heareth and seeth (all things).*³⁵³

Al-Bukhārī adds: *Narrated Abū Huraira: The Prophet said, "Do not set out on a journey except for three mosques: 1) al-Masjid-al-Ḥarām, 2) the Mosque of Allāh's Apostle, and 3) al-Aqsa.*³⁵⁴ Note in the above had-

352 Page 148-9

353 Sūra 17:1 (Yusif 'Alī)

354 Ṣaḥīḥ al-Bukhārī Ḥadīth 2:281

ith that Muḥammad is speaking of a place called al-Aqṣa almost a century before it was built. So during Muḥammad's time there must have been another place also called al-Aqṣa.

Al-Bukhārī also tells us that *Abū Dhar narrated. I said, "O Allāh's Apostle! Which mosque was first built on the surface of the earth?" He said, "Al-Masjid al-Ḥarām." I said, "Which was built next?" He replied "The mosque of al-Aqṣa." I said, "What was the period of construction between the two?" He said, "Forty years." He added, "Wherever (you may be, and) the prayer time becomes due, perform the prayer there, for the best thing is to do so (i.e. to offer the prayers in time)."*³⁵⁵ There are several strange things about this hadith. Abraham was supposed to have laid the foundations stones for al-Masjid al-Ḥarām, so how was al-Aqṣa built 40 years later? Remember that during Abraham's time there was no mosque in Jerusalem, and indeed no city where Jerusalem is today. The Jerusalem al-Aqṣa mosque was built 90 years after the hijra.

Fiqh us Sunnah³⁵⁶ tells us: *Ibn Taimiyyah said, "There is no other sanctuary in the whole world besides these two, not even Al-Aqṣa, nor any other, even though some ignorant people call them Ḥarām al-Maqdis and Ḥarām al-Khalil. By consensus Ḥarām Makkah is the only Ḥarām (sanctuary). About Madinah there is no such consensus. A majority of scholars, however, hold that Madinah is also a sanctuary, as mentioned in ḥadīth on this subject. Muslim scholars disagree about a third sanctuary, namely, Wujā, the valley of Al-Tā'if. Ash-Shafi'i regards it a sanctuary. Ash-Shawkani agrees with him, but the majority of the scholars disagree and do not consider it a sanctuary." The majority of scholars believes Makkah has preference over Madinah. In this account, the sacred location in Tā'if is also considered. (We will examine this next.) It is interesting that some ignorant people call them Ḥarām al-Maqdis and Ḥarām al-Khalil. The name Ḥarām al-Maqdis (Holy Forbidden Gathering Place) would probably refer to Jerusalem, since it is known as Al'Quds in Arabic, or the Holy Place.*

A few years ago, on an Arabic television program, Zakaria Boutros presented evidence from Islamic sources which he claims support a theory that the al-Aqṣa Mosque referred to in Sūra 17 and in the ḥadīths was a literal mosque located not in Jerusalem, but a few miles outside of the Holy City. His argument is as follows:

In *Kitāb al-Tārīkh wa al-Maghazi*³⁵⁷ early Muslim historian and biographer al-Wāqidi described Muḥammad's stay in the village of Jiranah a few miles outside Mecca. He wrote, *"The Prophet arrived in Jiranah on Thursday, and remained 13 nights. He then departed Jiranah after praying at the al-Aqṣa Mosque located on the bank of the riverbed. The Prophet used to pray there whenever he came to Jiranah."*

Another historian, Azraqī, described in a discussion between two men named Muḥammad ibn Tariq and Mujahid. Muḥammad said, *"Mujahid and I agreed on Jiranah, because he informed me the Prophet used to pray at the al-Aqṣa Mosque located on the bank of the river bed. The other nearby mosque, the al-Adna Mosque, was built by a man from the Quraysh tribe."*³⁵⁸

Al-Aqṣa in Arabic means "the farthest point", and al-Adna means "the nearest point" or perhaps more

355 Ṣaḥīḥ al-Bukhārī Ḥadīth 4:585

356 Fiqh us Sunnah 5:65, Sayyid Sabiq

357 al-Wāqidi al-Tārīkh wa al-Maghazi, 69 *The Islamic Conquest of Syria*

358 Azraqī, Wuestenfeld, Ferdinand (1964) al-Azraqi, in *Chroniken der Stadt Mekka*

correctly the “lowest point.” The two mosques were simply named according to their location. The lower mosque was the al-Adna Mosque, and the farther one was al-Aqṣa.

Another early Mecca historian, Ibn Ishāq al-Fakihi, noted that Muslims who wanted to perform the ‘umrah (Minor Pilgrimage) would first purify themselves at the neighboring villages of Tanim and Jiranah.³⁵⁹ The al-Adna Mosque in Tanim was significant because Muḥammad’s wife ‘Ā’isha had purified herself there, and the Prophet himself had prayed in the al-Aqṣa Mosque in Jiranah. This leads us to expect that Jiranah had a good source of water.

Ḥadīth historian Abū ‘Alī recorded³⁶⁰ that Umm Salmah heard Muḥammad say, “*Whoever prepares for the ‘umrah by purifying himself in the al-Aqṣa Mosque before he goes to the ḥarām area in Mecca will have his sins forgiven before he even commits them.*” This leads us to expect that Jiranah was just outside of the forbidden area, where one could wash themselves.

The above sources all indicate that the Al-Aqṣa Mosque referred to by Muḥammad in Qur’ān 17:1 was the mosque in Jiranah, a village just outside of Masjid-al- Ḥarām. The famous mosque known today by the same name in Jerusalem was built ninety years after Islam began and cannot be the the al-Aqṣa mosque referred to by these historians.

I would like to suggest a place that fits all the descriptions. Today it is covered over by buildings, but in ancient times, this place was 8 km from the heart of Petra. Pilgrims wanting to enter the forbidden sanctuary would have stopped here first to cleanse themselves. Indeed, almost everyone entering the area of Wadi Musa, outside of Petra, drives past an artesian well located at the edge of the wadi, just as it was described. This well is known as the Moses Spring and today, tour guides gleefully connect it with the story of Moses hitting the rock so that water came out. If this is al-Aqṣa, then al-Adna or “the lower” would be at a lower area farther down the wadi before entering the sacred area.



Above: Moses Spring in 1979

So how did the name Al-Aqṣa get connected with the mosque in Jerusalem? First, it is not uncommon for places to have the same name, especially a common name such as “the far” gathering place.

Those building the gathering place (mosque) in Jerusalem in 90 AH would have faced an issue when naming the new structure. The Holy City was known as *al-Ḥarām* or *The Forbidden*. The city of Jerusalem was called al-Quds or *The Holy*. A name such as The Holy Mosque might overshadow the name for their sacred city. Calling it The Far Mosque was a safe description, and at the time, it was indeed the far mosque.

Many years later, after Petra was forgotten, and the original location of al-Aqṣa in Jiranah was forgotten, the Abbasid writers would tell the story of Muḥammad traveling to al-Aqṣa. To them it seemed like a miracle, and the story probably grew.

While we may never prove that al-Aqṣa is the spring in Wadi Musa, there is no question that the original al-Aqṣa is described as being a place of washing, located on the edge of a wadi outside of the sacred area, while al-Aqṣa Mosque in Jerusalem is on a bald hard rock at the top of a mountain.

359 Azraqī , *Mecca and its Antiquities*

360 Ali bin Hasamuddin , Alauddin, Masnad Imam Abu Abdullah (Arabic)

41. Location of al-Bayḍā

Al-Ṭabarī tells us an interesting story about al-Ḥajjāj going to Mecca.³⁶¹ He comes to a place called al-Bayḍā, on a mountain trail, and meets some men there. As a student of geography, I immediately want to ask: Where is al-Bayḍā? The greatest authority on Islamic geography is a man known as Yāqūt, the author of *Muʿjam al-Buldān*, a multi-volume series of books on the geography of Islam, written some 600 years after Muḥammad. In volume 2,³⁶² he tells us that he had identified al-Bayḍā as another name for Tanʿīm, just outside of the ḥarām territory encircling Mecca in Saudi Arabia. He gives no reason to back up his thinking. Perhaps this was the closest place to Mecca that he could find that was “on a mountain trail.”

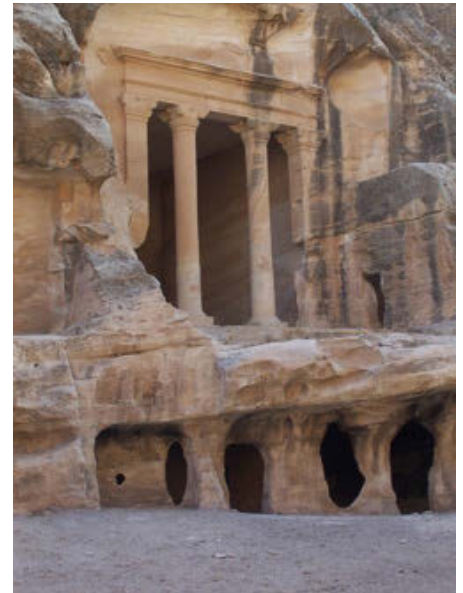
Now that Petra has been identified as the original Mecca, can we find al-Bayḍā? Just ask any local, look at a map, or check the road signs. Al-Bayḍā is a very well known ancient spot, that is locally called “Little Petra.” It is about 8 km from Petra, along a mountain path.

Little Petra is a Nabataean burial centre complete with tombs, accompanying dining halls and other locations. Right beside it is a pre-pottery Neolithic settlement, and several fields that were cultivated in ancient times.



Left A tomb near the entrance to Al-Bayḍā.

Right: A triclinium in Al-Bayḍā



42. Location of al-ʿAqaba

The location of ʿal-ʿAqaba in early Islamic literature is an important factor in this study as there are several places in the Middle East known by this name. Al-ʿAqaba appears several times in the story of Muḥammad while he was living in Mecca during the early part of his prophethood. We will go through these occurrences to try and determine what we can learn about the location of al-ʿAqaba and its relation to Mecca and Medina. (The ʿalʿ in front of al-Aqaba simply denotes the definite case and could be translated “the.”) Al-Ṭabarī³⁶³ tells us that during the days of the pagan pilgrimage, Muḥammad met some of the tribe of

³⁶¹ Ṭabarī Vol. 8, page 126

³⁶² Yāqūt, *Muʿjam al-Buldān*, Vol 2, page 335

³⁶³ Ṭabarī, Volume 6 page 124, see also Guillaume, 2006, page 198

Anṣār (Quraysh from Medina) as they traveled to Mecca and preached to them. This took place in al-'Aqaba, which must be between Medina and Mecca.

The following year, twelve of the Anṣār came on the pilgrimage to Mecca. During their trip, they met Muḥammad at al-'Aqaba and took an oath of allegiance to him.³⁶⁴ After the pilgrimage, they returned to Medina and spread the teachings of Islam.

The year following this, some of the Anṣār went on the pagan pilgrimage to Mecca and they again agreed to meet Muḥammad in al-'Aqaba in the middle of the days of al-tashriq. These are three days (11-13th) of the month of Dhū al-Ḥijja, following after the day of sacrifice on the tenth day,³⁶⁵ when the time of fasting has ended. During this time, the pagan Quraysh in 'Aqaba argued whether Muḥammad prayed towards Syria or towards the Ka'ba. It was unclear to them. So Muḥammad agreed to meet with these Anṣār at al-'Aqaba, and their meeting was held in secret, at night in a ravine. In the middle of the night³⁶⁶ as they were returning to the Holy City, there was a shout from the top of al-'Aqaba, in a most piercing voice, "People of the stations of Mīnā, do you want a blameworthy person and the apostates with him who have gathered together to wage war on you?"

Muḥammad replied to his followers "What does the enemy of God say? This is the Azabb (devil) of al-'Aqaba, the son of the devil Azyab. Listen, enemy of God, by Allāh, I shall deal with you!" They continued to hold back, but one of them wanted to fall on the people of Mīnā with their swords in the morning. Muḥammad told them to go back to their tents, as they had not been commanded to do this.

After the emigration to Medina, al-'Aqaba is not mentioned until year 9 AH.³⁶⁷ The prophet Muḥammad was passing through the ancient town of al-Ḥijr, near Mada'in Ṣāliḥ³⁶⁸ when the people complained of having very little rain. Muḥammad prayed, and there was some rain. Then they moved on³⁶⁹ and met 'Umarah ibn Hazm, who was one of those present at the pledge of al-'Aqaba.

Ismail K. Poonawala, the translator of al-Ṭabarī Volume nine,³⁷⁰ informs us that al-'Aqaba was a mountain pass between Mīnā and Mecca. Today Mīnā is a wide open plain around 5 kilometers from present day Mecca in Saudi Arabia (70 kilometers inland from the Red Sea) and is part of the pilgrimage tradition. The area around Mecca and Mīnā is very flat, with a few mountains rising from the desert floor. Along the way from Mecca to Mīnā, there is a side ravine between the mountain ranges that is known today as 'Aqaba. Muslim scholars tell us that this is the 'Aqaba where Muḥammad's first followers made the famous 'Aqaba pledge.

364 Ṭabarī, Vol. 6 page 126

365 Ṭabarī, Vol. 6, page 130, footnote 208

366 Ṭabarī, Vol. 6 page 135

367 Ṭabarī, Vol 9, page 54

368 Ṭabarī, Vol 9, page 52

369 Ṭabarī, Vol 9, page 54

370 See footnote 380

If we accept the proposed theory that the original holy city is Petra rather than Mecca in Saudi Arabia, then Muḥammad would not have met with his first followers over a thousand kilometers south of Petra, especially if they were of the Anṣār, which lived in Medina. In this case we should look for an 'Aqaba closer to Petra, and then look at arguments for and against each location.

Today most people identify 'Aqaba not with Mecca, but with the modern city of 'Aqaba at the north end of the Gulf of 'Aqaba on the Red Sea. This is a port city, and the beginning of the road that goes up into the highlands of ancient Edom. In ancient times, however, this city was known by other names such as Aila, the name the Romans gave the city. I believe that the Nabataeans used another name, Leuce Come, which we will examine a bit later on.

The Islamic literature of the Abbāsid period clearly calls the city of 'Aqaba by its Roman name: Aila. For example, 'Aqaba is called Aila in al-Ṭabarī Vol. 9, page 58. When Muḥammad travels north to Tabūk, the governor of Aylah (Aila) comes to him and makes a treaty with him. Here Aila is identified as the seaport at the northern end of the Gulf of 'Aqaba.³⁷¹

Aila is mentioned again by al-Ṭabarī³⁷² when Abū Bakr travels from Medina to Syria. He takes the road of al-mu'riqah or sweating. This refers to the very humid conditions on the road along the Red Sea coast.³⁷³ It is obvious from Islamic literature that the 'Aqaba referred to by Ibn Ishāq in his book *Sīrat Rasūl Allāh* is the one beside Mecca, and not the city of Aila.³⁷⁴ However, when considering our proposed change of locations, I would suggest that the Pledge of 'Aqaba was indeed taken near the modern city of 'Aqaba known to the Romans as Aila. It is my belief that the later Abbāsid writers used the older Roman name of Aila for 'Aqaba, and then found a new location for 'Aqaba near the city of Mecca in Saudi Arabia.

There are several problems with identifying 'Aqaba in its current location near Mecca. First, let's consider the meaning of the word 'Aqaba. Hugh's Dictionary of Islam³⁷⁵ tells us: "Aqabah is a sheltered glen near Minā, celebrated as the scene of the two pledges, the first and second pledge of al-'Aqabah. The first pledge was made by ten men of the tribe of Khazraj and ten of Aus when they pledged their faith to Muḥammad thus: -- "We will not worship, any but one God; we will not steal; nor commit adultery; nor kill our children; nor will we slander our neighbors; and we will obey the Prophet of God."

The date assigned to this pledge by Sir W. Muir is April 21, CE. 621. The second pledge was a few months afterwards when seventy three men and two women came forward, one by one, and took an oath of fealty to the Prophet. Muḥammad named twelve of the chief of these men, and said: "Moses chose from amongst his people twelve leaders. Ye shall be sureties for the rest, even as were the Apostles of Jesus; and I am surety for my people. And the people answered, Amīn, So be it."³⁷⁶

371 El2, V.S. Aila

372 Ṭabarī, Vol. 11, 2079, page 73

373 Y. Blankenship cross-references this with Caetani, *Annali*, II, 1121 n 3; and Donner, *Conquests*, 115

374 Cobb, 1995, *Scholars and Society at Early Islamic Ayla*

375 Haughes *A Dictionary of Islam*

376 Muir's *Life of Mahomet*, Vol. 2., pages 216, 232



Left: the commemorative mosque in the Aqaba ravine near Mecca, in a ravine above Mīnā. The ravine does not lead anywhere, but is simply a place where water runs off of Jebal Quways.

Hans Wehr's dictionary tells us that the Arabic meaning for 'Aqaba is somewhat vague, and can have several meanings. Most Arabs would understand the word 'aqab to mean a steep road or track, or a difficult pass up through the mountains.³⁷⁷ However, it also could mean a 'heel' or the way up from the foot to the body. In all cases the meaning contains the idea of moving upward.

Yāqūt tells us that there are several ways of using 'Aqaba. It can be used in construct state with other words... such as: 'Aqaba of the riders, or the mounting of the riders.³⁷⁸

Early travelers in Arabia also noted that the term 'Aqaba was used by Bedouin to refer to moving upward in different locations. For example, James T. Bent notes in his book *"Having left these villages behind us, we climbed rapidly higher and higher, until at an elevation of over 4,000 feet we found ourselves at last on a broad, level tableland, stretching as far as the eye could reach in every direction. This is no doubt the 'Maratha Mountains' of Ptolemy, the Mons Excelsus of Pliny, which shuts off the Hadhramout, where once flourished the frankincense and the myrrh. Words cannot express the desolate aspect of this vast table-land, Akaba or the 'going up' as the Arabs call it."*^{379,380}

So it is clear that the 'Aqaba leads upward to something. The problem with the present location of 'Aqaba near Mecca is that it is a crevice in the side of a mountain but it goes upward to nowhere. There is nothing

377 Wehr, page 733, entry "Aqaba

378 Yāqūt, *Mu'jam al-Buldān*, Vol. 4, page 134, 'Aqaba

379 Bent, *Southern Arabia* 1900, page 88

380 Pliny, 12:14, 52 : 'In medio Arabiae fere sunt Adramitae pagus Saboraeum in monte excelso.'

at the top of Jebal Quways, and there was no road or path to the top. In actuality, it is a place where rain water runs downward. The name 'Aqaba does not seem a very good fit for this location.

Second, al-Ṭabarī and Ibn Ishāq both make it plain that 'Aqaba was the location of a major market³⁸¹ and people came from great distances to the market. This market was held at least annually, for Muḥammad met his followers at this market each year. It must have been a major market for members of the Anṣār tribe to travel there each year all the way from Medina. The present location of 'Aqaba in Saudi is only three miles from the Ka'ba in Mecca, and is not on a path from anywhere to anywhere. It would be very strange for a main market to be there, tucked away in a small crevice in a mountain, let alone a large market when it is so close to the main markets in Mecca. So how did this location become known as 'Aqaba?

The present city of 'Aqaba in Jordan has had several names during its long history. While it is currently called 'Aqaba, the Romans called it Ayla and I believe the Nabataeans called it Leuce Come. Before that it was known in the Bible as as Elath and Egeb Gezer.³⁸²

Gerd-R Puin in his article in *The Hidden Origins of Islam*³⁸³ suggests that Leuce Come can be found in the Qur'ān. He notes that Wetzstein was the first to connect Al'Aykah/Laykah with Leuke Come, and that Musil recalls the Greek 'Leuke' meaning white.

Puin points out that the phrase Laykah appears four times in the Cairo edition of the Qur'ān, and seems to be a place name.³⁸⁴ There are variant readings of this name in early copies of the Qur'ān. Puin comes to the conclusion³⁸⁵ that this phrase must refer to Leuke Come. He then presents several of the traditional arguments concerning placing Leuke Come on the eastern shores of the Red Sea, and suggests that Leuke Come = al-Hawra. But as we will show, the directions to Leuce Come in the *The Periplus Maris Erythraei* locate Leuke Come where 'Aqaba is today. This provides us with a strong possibility that 'Aqaba (Leuce Come) is mentioned four times in the early copies of the Qur'ān, once again pointing to a northern setting for the Qur'ān.

For many years historians and archaeologists have wondered about the location of the Nabataean port city of Leuce Come (meaning white village). This village is mentioned in several ancient writings, such as the *Periplus of the Erythraean Sea*³⁸⁶ and Strabo's *Geography*.³⁸⁷ The most serious guess at the location of Leuce

381 Ṭabarī, Vol 6, page 130-136, and Guillaume, 2006, *Sīrat Rasūl Allāh*, page 198-199

382 Genesis 14:1-6 Eben Gezer" is also mentioned in Numbers 33:35 and Deuteronomy 2:8. I Kings 9:26 mentions "ships in Ezion-Gebher, which is beside Eloth (Elath) on the shore of the Red Sea in the Land of Edom." 2 Chronicles 8:17 also mentions these two locations and I Kings 9:27-28 describes a navel expedition sent out from this location.

383 Puin, *The Hidden Origins of Islam*, 2010, pg 339, See Fedeli, Alba

384 Sūra 15:78, 50:14, 26:176, 38:13

385 Puin page 342

386 Casson, 1989, pages 61 - 62, *The Periplus Maris Erythraei*

387 Stabo, *Geography* 16.4.23

Come comes from the famous naval historian Lionel Casson who calculated the location of Leuce Come by using the port of Myos Hormos. He assumed that the Myos Harbor (Mussel Harbor) was located at Abū Sha'r on the western side of the Red Sea.

He defends this opinion on page 96 of his translation of the *Periplus Maris Erythraei*. From this location on the west shore of the Gulf of Suez, he follows the writer's description and comes to the conclusion that Leuce Come was located in the vicinity of 'Aynunah on the shores of Saudi Arabia.³⁸⁸ Casson goes on to mention some of the other educated guesses that have been made concerning the location of Leuce Come, such as Haura and Yanbu further south on the Saudi Arabian coast.

These educated guesses were all based on scholarly study and opinion. However, since their writings several important archaeological discoveries have been made. The location of Myos Hormos, the starting place of this description, has now been positively fixed at Quseir al-Qadīm far to the south of Casson's guess of Abū Sha'r. The ruins at Quseir al-Qadīm were the subject of exploratory excavations between 1978 and 1982³⁸⁹ when it was thought to be the relatively minor Roman port of Leucos Limen, a view (apparently confirmed by a somewhat obscure piece of pottery)³⁹⁰ that was held by Casson. Some scholars even voiced the opinion that Leucos Limen might have been Leuce Come.

Then in 1994, ostraca from the French excavations at Zerqa on the road between Quseir and Qift showed that, beyond doubt, the port at the end of the road was indeed called Myos Hormos.³⁹¹ Archaeological work done in 1999 demonstrated that the road ended at Quseir al-Qadīm (rather than Quseir) and amongst the few pieces of pottery the archaeologists recovered was one bearing the name "Myos Hormos".

Suddenly historians realized that Quseir al-Qadīm was not a minor trading station, but was rather Myos Hormos, the renowned ancient port that traded with India and beyond.³⁹²

The positive identification of Myos Hormos then changed all of the previous suggestions for the location of Leuce Come. Myos Hormos was not located in the Gulf of Suez, but on the Red Sea itself. This new location shed a very interesting light on how we now view the words in the Periplus of the Erythraean Sea. Using the new location of Myos Hormos, I endeavored to discover where Leuce Come was located.

I started my search for Leuce Come using the description of its location as found in the Periplus of the Erythraean Sea: (19):

"Now to the left of Berenice, sailing for two or three days from Mussel Harbor eastward across the adjacent gulf (is this across the Red Sea or is it a gulf on the Egypt side?), there is another harbor and fortified place, which is called White Village (Leuce Come), from which there is a road to Petra, which is subject to Malichas, King of the Nabataeans." ... "It holds the position of a market town for the small vessels sent there

388 Casson, 1989, page 143

389 Whitcomb and Johnson 1979; 1982

390 Bagnall, 1986, *Papyri and Ostraka from Quseir al-Qadim*

391 Cuvigny, 2003 and Sidebotham, 2005

392 Peacock, 2008, *Quseir al-Qadim Project*

from (South) Arabia; and so a centurion is stationed there as a collector of one-fourth of the merchandise imported, with an armed force, as a garrison.”

To locate this missing city we must determine if the “White Village” was south or north of Berenice, and if it was on the Egyptian or Arabian side of the Red Sea.

From the quote above, the presence of a road linking the White Village with Petra is undeniable. It would make little sense to describe a port south of Berenice on the Egypt side that had a road linking to Petra (which is far to the north of Berenice). So it would seem that the White Village must have been located across the Red Sea. The problem is that there are no ports that fit this description, nor or there any roads that fit the description.

The other important term is the use of the word “to the left.” This term can be understood from the opening sentence of the *Periplus*: “first comes Egypt’s port of Myos Hormos, and beyond it, after a sail of 1800 stades to the right, Berenice. The ports of both are bays on the Red Sea on the edge of Egypt.”

So the writer is imagining himself standing on the shores of Egypt (he was writing from Alexandria). He locates Myos Hormos and Berenice for us, and tells us that Berenice is to the right of Myos Hormos. This would indicate that right means “southeast.” A few paragraphs later he tells us that the “White Village” is to the “left” of Berenice. He does not give the distance in stades, but rather in runs.

At this point his directions seem a little confused, but I would like to point out that they are quite clear if you know what he is talking about. First of all, we are talking north of Berenice. Then he adds the sentence: “after a voyage of two or three runs eastward from Myos Hormos past the gulf lying alongside.”

Look at the map on page 248. He points us north of Berenice, the main port on the Red Sea. He then takes us to the smaller port of Myos Hormos. So our journey starts in the south and moves north. The writer then tells us to travel eastward from Myos Hormos for two or three runs, past the gulf that lies alongside of Myos Hormos. Given the now positive location of Myos Hormos and the northward course of the writer’s directions, there is only one conclusion that can be reached.

North of Myos Hormos, the Red Sea splits into two branches. The writer tells us to take the east branch and go north for two or three runs. He doesn’t tell us where to find the port, because we will run into it at the end of the “bay.” Today this place is known as ‘Aqaba, or in ancient times Aila.

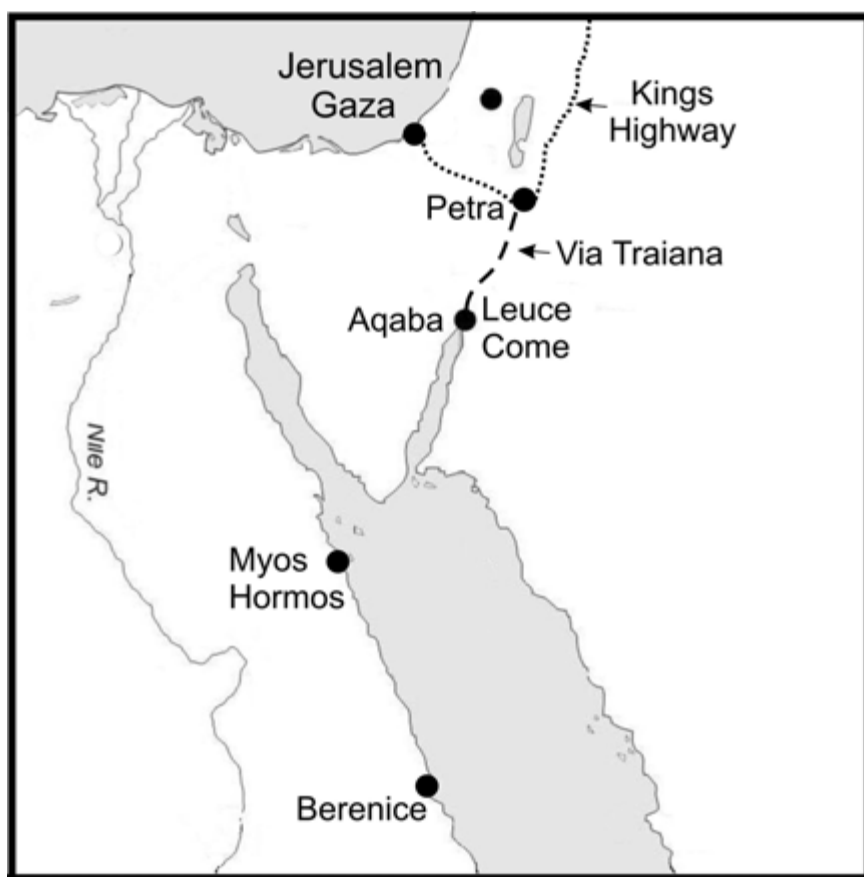
It would make no sense for the writer to start us in Berenice, take us north to Myos Hormos, and then south to some port on the Saudi side of the Red Sea. Rather the writer starts us in Berenice, takes us north to Myos Hormos, and then expects us to continue traveling north (in the eastern gulf or bay) until we reach Leuce Come (Aila).

Alia was a place built of white sand structures. Excavations are currently taking place, but the Nabataean port has been mostly destroyed. It did, however, contain many mud buildings. The *Periplus* informs us that the “White Village” had a road attaching it to Petra. This fits very well. The Romans built the Via Traiana overtop of the then existing road that was known in ancient times as “The King’s Highway.” This road linked Aila with Petra, and north to Damascus. It fits the description of the *Periplus* perfectly. There was a fort in Aila, and the city was definitely under the control of Malichus, the king of the Nabataeans.

The Periplus tells us that this port was used by small craft (there is no deep harbour at Alia proper) and that it was loaded with freight from south Arabia. It is also interesting to note that the Periplus, which was written to describe “Trade on the Red Sea” does not mention Aila at all. This seeming oversight can now be understood by identifying the “White Village” with the known port of “Aila.”

The Periplus then tells us that after this harbour, (White Village) which extended “far” down the Red Sea, there are a variety tribes, with some huts along the coast, and they are pirates. It tells us that to set a course along the coast of Arabia is altogether risky, since the region with its lack of harbours offers poor anchorage, is foul with rocky stretches, and cannot be approached because of cliffs. This is why it is important for sailors to sail to the “Burnt Island” before approaching the coast. Several historians have suggested that the “burnt island” is Jabal al-Ta’ir, which has a nearly dead volcano.³⁹³ Then sailing down this coast, the port of Muza is on the left hand shore.³⁹⁴ This sounds like a perfect description of the Saudi coast, looking south from Aila. That is why we cannot find Leuce-Come along that barren coast. It was never there.

There are two other considerations that must be taken into our calculations. Strabo relates the account of the attempted Roman invasion of Arabia. The Romans built boats on the Egyptian side, and sailed them to Leuce-Come.



“After enduring great hardships and distress, he arrived on the fifteenth day at Leuce-Come, a large mart in the territory of the Nabataeans, with the loss of many of his vessels, some with all their crews, in consequence of the difficulty of the navigation, but by no opposition from an enemy. These misfortunes were occasioned by the perfidy of Syllaeus, who insisted that there was no road for an army by land to Leuce-Come, to which and from which place the camel traders travel with ease and in safety from Sela, and back to Sela, with so large a body of men and camels as to differ in no respect from an army.”³⁹⁵

Notice that they endured great hardships and distress in a “fifteen day journey” to Leuce Come. They lost

393 Casson, Muller, Schoff

394 paraphrased from *The Periplus Maris Eruthraei* 20 - 21

395 *The Periplus Maris Eruthraei* 20 - 21, 16.4.24

many vessels along the way because of the difficulty of navigation. This has always puzzled me. To sail across the Red Sea is quite easy. To sail north to Aila however, would have been a very tricky job for Roman boats with square “lug sails.” Most of the year, the north-eastern arm of the Red Sea (Gulf of ‘Aqaba) is plagued with winds from the northwest, making the journey up the sea almost impossible.

By locating Leuce Come as Aila, this passage of Strabo now becomes more understandable. The Romans would have had to sail through the rocky entrance to the Gulf of ‘Aqaba, and northward along the rocky coasts where the Roman boats could easily have fouled.

Is Aila the ‘Aqaba of Islam? The descriptions of ‘Aqaba in al-Ṭabarī and Ibn Ishāq could be applied to both locations, although the location in Saudi Arabia has several problems:

1. It is south of Mecca, and therefore not between Mecca and Medina.
2. It is out of the way and not on a road to anywhere, and therefore a very unlikely place for a large market.
3. Since it is not on a path to anywhere, the term ‘Aqaba or “going up” is an awkward fit.

In contrast, consider the support for Aila being the ‘Aqaba of Islam:

1. Strabo vol 16.24 tells us that in his time there was a large market at Aila.
2. The road going up into the mountains behind Aila was known as the *Aqaba of Aila*. Eventually the name “Aqaba of Aila” was reduced to only ‘Aqaba which is the name used today.
3. The ‘Aqaba of Aila is less than 50 kilometers from Petra, and located between Mecca and Medina.

Therefore, based on this research, I would propose that the location known as ‘Aqaba today (Aila, Leuce Come, Ezon Geber, and Elath) are all referring to the same location, and are synonymous with the ‘Aqaba in the Qur’ān. It is my suggestion that Yāqūt, writing six hundred years after the death of Muḥammad, was forced to find a location near Mecca in Saudi Arabia that fit the description of ‘Aqaba. His choice of the ravine near Mecca was a natural one, as it was a place of “going up.” Yāqūt never imagined that the real ‘Aqaba was hundreds of kilometers away.

43. Location of Ṭā’if and nearby locations

Several readers of my earlier book *Qur’ānic Geography* (2011) have written to enquire about the location of ancient city of Ṭā’if. They concluded that if the city of Petra in Jordan is really ancient Mecca, then the ancient city of Ṭā’if must be between Petra and Medina in Saudi Arabia. The currently location of Ṭā’if is south of Medina, on the road to the Najran and Yemen. After several requests, I decided to present my opinions on the ancient location of Ṭā’if, although it may take extensive archeological excavations to prove this one way or the other.

The name Ṭā'if comes from the ancient Arabic root Ṭ-W-F which means: encircled. The word Ṭ-W-F is used to describe the circling of the Ka'ba. So in this chapter, we will think of the location of Ṭā'if as the *encircled* location. As far as I have been able to determine, outside of Islamic sources, there are no early mention of a location known as Ṭā'if in other literature. So it was not a well known location.

If we are to search for ancient Ṭā'if in northern Arabia, we first need to discover how it was described in early Islamic literature. This will give us some guidelines in our search for the location of the original place. And I believe may provide some surprising results.

From the Book of Idols³⁹⁶ we learn that the goddess Allat was worshiped there”

They then adopted Allat as their goddess. Allat stood in al-Ṭā'if She was a cubic rock beside The Quraysh, as well as all the Arabs, were wont to venerate Allat. They also used to name their children after her, calling them Zayd-Allat and Taym-Allat. She stood in the place of the left-hand side minaret of the present-day mosque of al-Ṭā'if. She is the idol which God mentioned when He said, “Have you seen Allat and al-'Uzza?”

From this we learn that Ṭā'if had a temple to Allat, and was the home of the Thaqif tribe. From al-Ṭabarī³⁹⁷ we learn that it was one of the “Two Towns.” This is a reference to the original Mecca (Petra) and the city of Ṭā'if. Both of them had a temple sacred to the Arab gods.

“We wrote down in Zafar the ancient writings of glory, so that the chiefs of the two towns might read them. ...”³⁹⁸

Fiqh us Sunnah³⁹⁹ tells us: *Ibn Taimiyyah said, “There is no other sanctuary in the whole world besides these two, ... by consensus ḥarām Makkah is the only ḥarām (sanctuary). About Madinah there is no such consensus. A majority of scholars, however, hold that Madinah is also a sanctuary, as mentioned in ḥadīth on this subject. Muslim scholars disagree about a third sanctuary, namely, Wuja, the valley of Al-Ṭā'if.*

From this we hear again about the sanctuary in Ṭā'if, although we are told that it is in the valley of Wuja.

We learn more about Ṭā'if from the account of the prophet's armies when they attacked it.

He (the prophet) then followed a road called al-Ḍayḡah (the narrow way). As he was passing through it he inquired about its name. When he was told that it was al-Ḍayḡah, he said, “No, rather it is al-Yusār (the easy).” Then he went by Nakhb⁴⁰⁰ and halted under a lote tree called al-Ṣādirah near the property of a man of Thaqīf. The Messenger of God sent word to him either to come out or else his walled garden would be destroyed. He refused to come out, so the Messenger of God ordered the walled garden to be destroyed.

Then the Messenger of God went on until he halted near al-Ṭā'if and pitched his camp there. Some of his

396 Hisham Ibn al-Kalbi, *Book of Idols*, under Allat

397 Ṭabarī Vol. 5:161

398 Ṭabarī Vol. 5 Page 187

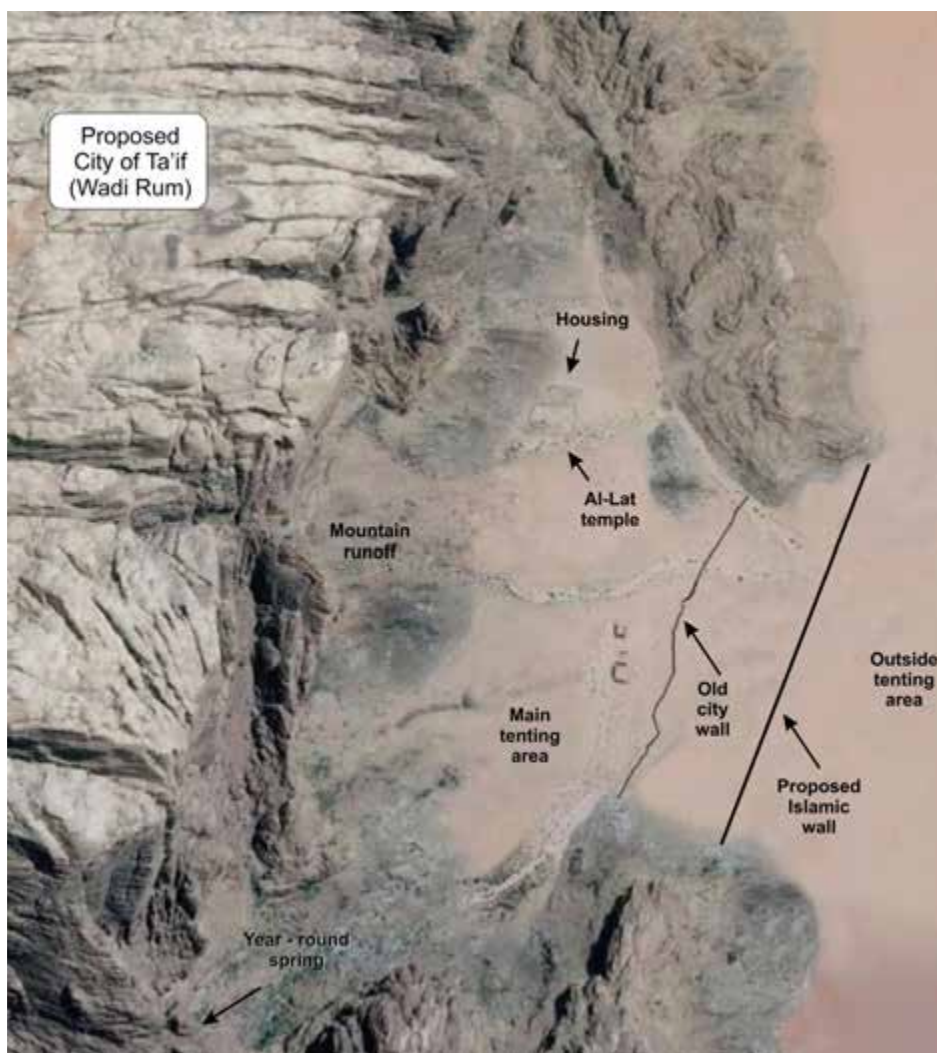
399 Sabiq, *As-Sayyid*, Fiqh us Sunnah 5:65

400 Known as Ras al Naqb today

companions were killed by arrows, because the camp had been placed very close to the walls of al-Ṭā'if and the arrows were reaching them." The Muslims were unable to get through its wall, for it had shut the gate against them. When his comrades were killed by arrows, the Prophet moved to higher ground and pitched his camp near where his mosque stands today. He besieged them for some twenty days.⁴⁰¹

In the previous descriptions of Ṭā'if, we are not told that it is a great city. Rather, it was a centre for the Thaqif Bedouin tribe. It contained a temple to Allat, had a water supply, room for Bedouin tents, a city "wall" and it is "enclosed" or "encircled."

So where can we find the "encircled location" two or three days travel from Petra on the way to Medina? There is only one place that comes to mind, and believe it or not it also had a temple to Allat!

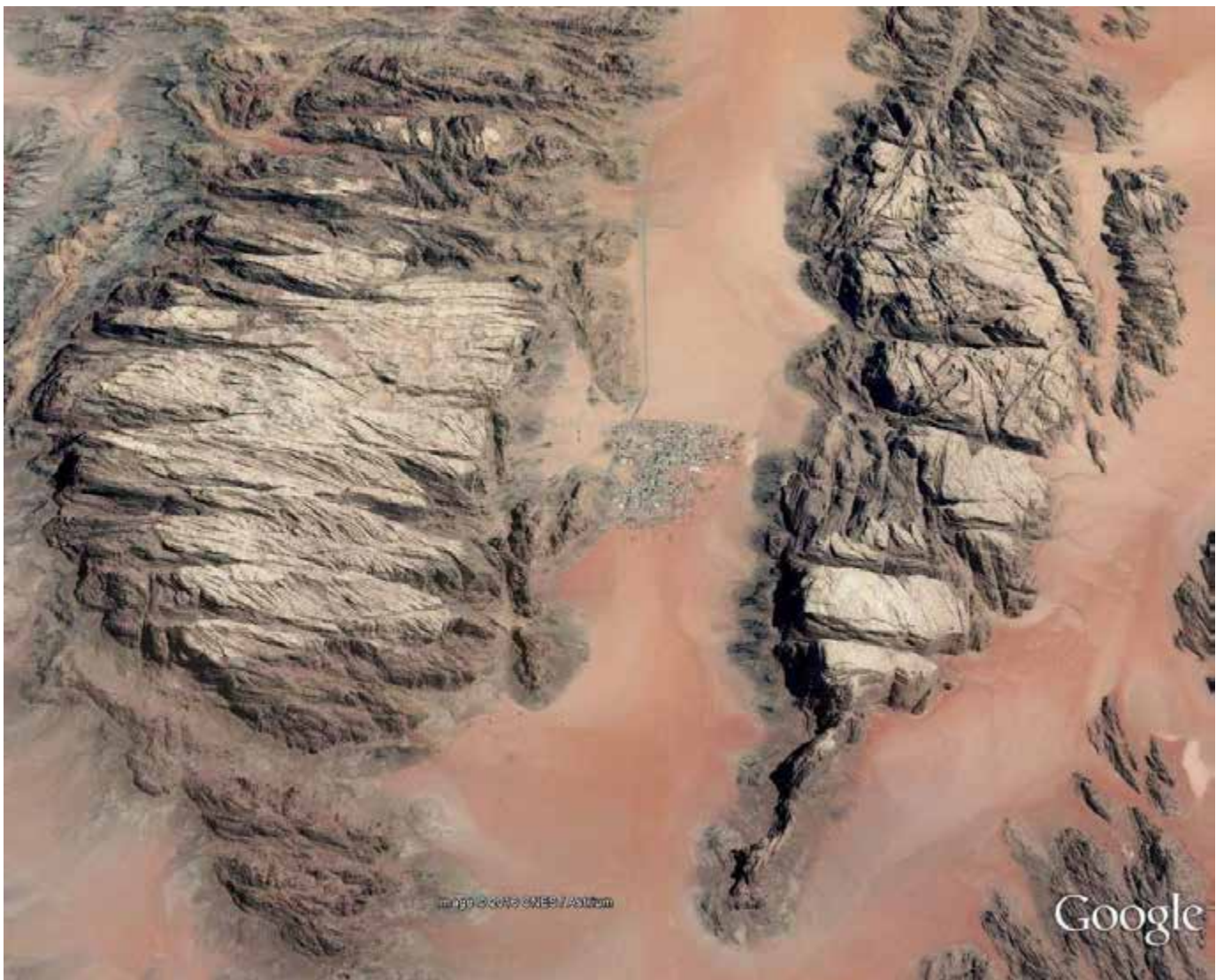


As you can see from the satellite photo of this location, it is indeed encircled by a huge mountain with vast sheer cliffs. The only area where it needed defenses was across the mouth that opens to the desert. In the satellite photo on the next page, you can see that the town of Wadi Rum has been built in front of this entrance. The city wall is most likely now under the roadway, as the engineers used the local rocks to create a roadbed.

Left: Satellite photo with modern buildings removed.

While this area is all desert today, long ago it was an agricultural area. Petroglyphs, inscriptions and archaeological remains around this site testify to 12,000 years of human occupation and interaction with the natural environment. The combination of 25,000 rock carvings with 20,000 inscriptions trace the evolution of human thought and the early development of the alphabet. The site illustrates the evolution of pastoral, agricultural and urban activity in the region.

⁴⁰¹ Ṭabarī Vol 8 page 22



Above: Satellite photo of Rum mountain on the left. The modern town and paved road lie over the original stacked-stone walls of the city.

A small urban area to the northwest of the temple was founded by the Nabataeans, including a bath complex. Thamudic and Lihyanite inscriptions at the foot of the cliffs on both sides of the main Wadi can be found in ancient stone constructions as well as in the surrounding mountains. The inscriptions on the temple confirm the pre-Islamic involvement of the Arabian tribes in the construction of the sanctuary. The temple was taken over by Thamudic tribes and Thamudic graffiti covers earlier Nabataean inscriptions, walls and columns.

The temple was discovered in Wadi Rum by Savignac in 1932. Savignac and Horsfield undertook the first excavations in 1933 and recorded Nabataean, Greek and Thamudic inscriptions and graffiti at the temple.⁴⁰² Dr. Saba Fares continues to study the area today.

402 The Wadi Ramm Recovery Project: Preliminary Report of the 1996 Season Dennine Dudley and Barbara Reeves *MOUSEION : ECHOS DU MONDE CLASSIQUE* Volume XLI - N.S. 16 - 1991 (Pages 81-106)

Just past the Nabataean temple on the right is a small path leading up into a little valley that is cut into Jebel Rum. The path leads into a cool, shady area with a hidden spring that wells up from natural reservoirs in the rock called *Ain Shallaal* in Arabic and is known more popularly as “Lawrence’s Spring,” largely because of the way Lawrence of Arabia described it during the Great Arab Revolt of 1917-1918, when he reached it exhausted from his battles with the Ottoman Turks and his desert journeys.

44. Nakhlah and other locations

Now, if Wadi Rum fits the descriptions of ancient Ṭā’if, then what about the other locations mentioned in the Islamic records? Let’s examine some of them briefly, although they should be written up as separate papers, perhaps by future researchers.

So far I have suggested that Petra in Jordan was the original Mecca now in Saudi Arabia. I have also suggested that ‘Aqaba in Saudi was ‘Aqaba in Jordan, al-Bayḍhā in Saudi was al-Bayḍhā in Jordan, al-Aqṣa in Jerusalem was Ain al Musa in Jordna, and finally Ṭā’if in Saudi Arabia was originally in Wadi Rum in Jordan. I would like to suggest that the Islamic Naqab⁴⁰³ is the area around Ras al Naqab today. Ukāz,⁴⁰⁴ the location of the annual fair held between Nakhlah and Ṭā’if, would probably be at the ancient town of Humaima.

Nakhlah⁴⁰⁵ was the farthest border for the Meccan herds. It was located halfway between Ṭā’if and Mecca⁴⁰⁶ and was a stopping place on the main route for travelers to spend the night. Since it was a stopping place, and since Nakhlah refers to palm trees, it would seem it was a green environment. There were also several idols located there. These were al-Uzza,⁴⁰⁷ ‘Amm-Anas,⁴⁰⁸ and a sacred tree known as the great tree at Hunayn called *dhat anwdt*.⁴⁰⁹

From Medina, the army traveled “through the Ḥijāz” until they were at a mine above al-Fur’ called Buḥrān. When they arrived at Nakhlah, a caravan of Quraysh went past him carrying raisins, leather, and other goods in which Quraysh traded.⁴¹⁰ From there, it was one day’s travel to the Harām area of the Holy city. Other references to Nakhlah can be found in: al-Ṭabarī 8:188 and 9:16.

403 Ṭabarī Vol 9 page 22

404 Ṭabarī Vol 6 page 85

405 Ṭabarī Vol 6 page 29

406 Ṭabarī Vol 7 page 18, and Ṭabarī Vol 6 page 117

407 Ṭabarī Vol. 8:187, and Hisham Ibn al-Kalbi, *Book of Idols* under Uzza as a she-devil which used to frequent three trees in Nakhlah.

408 al-Kalbi, *Book of Idols*, under the topic of ‘Amm-Anas

409 A tree on which date baskets, etc., are hung,” Robertson Smith, *Lectures on the Religion of the Semites. First Series. The Fundamental Institutions*, J. Wellhausen, *Reste arabischen Heidentums* 2, 36, 104-105

410 Ṭabarī Vol. 7:18-19

To travel from Ṭā'if (Rum) to Mecca (Petra), one would have to climb an escarpment to the top. This escarpment has long been a border between civilizations. There are a variety of unexcavated ruins above this escarpment which could have been Nakhlah.

Mushallal⁴¹¹ is a mountain or cliff top overlooking the Qudayd towards the coast. The word comes from the Arabic root of Sh-L-L and means a seeping of water. *The Book of Idols* tells us that the Arab idol Manah⁴¹² was there, erected facing towards the sea (south). Mushallal was above Qudayd between Medina and Mecca.

This fits a location beside the modern highway that drops from the highlands down to the low desert near Naqb (Ras al-Naqb).



Today there is a farm occupying this spot, as it has a permanent seep of water. This water was collected during earlier Nabataean times and sent by a small aqueduct to the city of Humeima. Some years ago, I attempted to visit this spot, but the local Bedouin told me not to visit there.

The owner of the property and others had been negatively affected by jinn or they had suffered from bad dreams when they attempted to dig in the ruins. During the three years I spent surveying that area, I never managed to visit this farm where the water seeps from the ground.⁴¹³

I trust I have demonstrated that there are many locations in southern Jordan that fit the ancient descriptions of places in early Islamic history. Hopefully, further archeological digs and discoveries can uncover more evidence.

45. Public Baths

There are a number of hadiths that deal with Roman bathhouses. While most hadiths are against Muslims using these bathhouses, there is one report that Muḥammad was in a bathhouse.

*Anas b. Mālik has stated that "I entered the public bath and saw the Messenger of God wearing a wrapper and said: O Anas, I have forbidden entry to a public bath without a wrapper."*⁴¹⁴

411 Ṭabarī Vol. 8:141

412 al-Kalbi, *Book of Idols* under Manah

413 GPS coordinates: 30° 1'13.74"N 35°27'48.27"E

414 Kamali, Mohammad Hashim, *A Textbook of Hadith Studies*, The Islamic Foundation, Page 196

Most Muslim scholars object to this hadith, and claim it is not authentic since neither Mecca or Medina had a Roman bathhouse. One might puzzle why there would even be hadiths about bathhouses, and why a hadith would even place Muḥammad in one?

It is quite evident that there never was a Roman bathhouse in Mecca. No Roman ruins have ever been found in Mecca. So was there a Roman bathhouse in Petra? The answer is yes, there were probably several Roman bathhouses. But there is one in particular that is of interest. It is a Roman bathhouse located right between the original Ka'ba area and the fortified Great Temple area where Ibn al-Zubayr most likely fortified himself during the attack by the Syrian army. Trebuchet stones are found around this area.

When one considers the close proximity that the bathhouse had to the Ka'ba, it is no wonder that it was the subject of theological consideration by Muḥammad as he sets out the rules and regulations of his new religion.



Above: Gibson walks through the ruins of the Roman Bathhouse in Petra. Taken from the film: The Sacred City. (Used with permission)

46 Arafah and Mīnā

There are a number of important locations around the Holy City that we have not yet located. Among them are Mount Arafah, the plains of Arafah, Mīnā, the 'Ukāz Market and the camping area known as Dhu al-Hulaifa. Muslims performed special rites at several places on their pilgrimage in order to gain merit from Allah. During these rites, they were to visit these sacred spots, such as the Ka'ba, the two mountains

known as Şafa and Marwa as well as a place called Mīnā and a trek up ‘Arafah mountain.⁴¹⁵ They were then to return to Mīnā, where they would throw stones at several pillars representing temptation and then be dismissed from there.⁴¹⁶

These special rites came from pre-Islamic times. The prophet Muḥammad performed these rites while still a pagan, before he received his first visit from the angel Gabriel.⁴¹⁷ The pilgrimage journeys and rites were physically stressful, so people wanted to eat and drink along the way. Abu Dawood⁴¹⁸ tells us:

Narrated Abdullah ibn Abbas, Ibn Abbas recited this verse: ‘It is no sin for you that you seek the bounty of your Lord’, and said: The people would not trade in Mīnā (during the hajj), so they were commanded to trade when they poured off of Mount Arafat. And so a market was begun at the foot of Mount Arafat. It became known as Dhu Al-Majāz.⁴¹⁹ Ḥunayn is a valley next to Dhū al-Majāz.

This market place was obviously inside of the harām area:

Narrated Abdullah ibn Abbas, The people used to trade, in the beginning, at Mīnā, Arafat, the market place of Dhul-Majaz, and during the season of hajj. But (later on) they became afraid of trading while they were putting on ihram. So Allah, glory be to Him, sent down this verse: “It is no sin for you that you seek the bounty of your Lord during the seasons of hajj.”⁴²⁰

Today, Mount Arafah (see right) is a low mountain in Mecca, but I would like to suggest that in Petra it was originally a very high mountain, and the main object of the Hajj pilgrimage. Afterwards they would rush from the mountain down to Mīnā.⁴²¹



415 Bukhārī 2:271: Narrated Muḥammad bin Abu Bakr Al Thaqaḥī, *I asked Anas bin Malik while we were proceeding from Mīnā to ‘Arafat, “What did you use to do on this day when you were with Allah’s Apostle?” Anas said, “Some of us used to recite Talbiya and nobody objected to that, and others used to recite Takbir and nobody objected to that.”*

416 Stoning the jimār took place at Mīnā. Food was also given out at Mīnā, Ṭabarī Vol. 6:23

417 The rites at Mīnā in pre-Islamic times: Ṭabarī Vol. 6 pages: 12, 20, especially 22; 26, 119-120

418 Abu Dawood 700:

419 Ṭabarī Vol. 9:2

420 Sunan Abu Dawood, 703

421 The pilgrims gathered in Mecca, went out to the mawqif (standing on Arafat) completed the pilgrimage and went to Mīnā. Ṭabarī Vol. 6:22

Going to Arafah is referred to as *mawqif*, or a place of standing. Pilgrims would use the morning to climb up ‘Arafah and then stand between midday and sunset contemplating on the Day of Resurrection, and then rush⁴²² to make their way back to Mīnā before it became totally dark and they were left on the mountain.⁴²³

During the descent from the mountain, many people lit torches to help light their way as they moved slowly down the mountain.⁴²⁴ Fires were also lit along the Muzdalifah so that pilgrims could see where they were to end up for the night.⁴²⁵ The word Muzdalifah means a slippery ramp, chute, or place of sliding. This is an apt description of the ascent going up and down Arafah mountain.

Today the principle focus is on the so called “plains of Arafah” but this term was not common in ancient literature, where the name ‘Arafah is usually used without any descriptors. Instead, the Qur’ān refers to the pilgrims “pouring down” from Arafah through a narrow chute.⁴²⁶



Above: The Sacred Mountain in Petra, known today as Mount Haroun was most likely the location of the original Mount Arafah and the focus of the first pilgrimage

The early records also mention that

422 Fiqh us Sunnah - 5.100A Allah says in the Qur’ān (2.198): “Then when you pour down from mount Arafah, celebrate the praises of Allah at the Sacred Monument and celebrate His praises as He has directed you, even though, before this, you went astray. Then pass on at a quick pace from the place whence it is usual for the multitude to do so, and ask for Allah’s forgiveness. And Allah is Oft-Forgiving, Most Merciful.

423 This was followed by the ifadah or “dispersal” (with a suggestion of haste) to Mīnā. Ṭabarī uses *nafr* for “dispersal” instead of the more usual *ifadah*, and also has the singular ‘Arafah instead of the plural.

424 Bukhārī 5:577 Narrated Hishams father. When Allah’s Apostle set out (towards Mecca) during the year of the Conquest (of Mecca) and this news reached (the infidels of Quraish), Abu Sufyan, Hakim bin Hizam and Budail bin Warqa came out to gather information about Allah’s Apostle. They proceeded on their way till they reached a place called Marr-az-Zahrān (which is near Mecca). Behold! There they saw many fires as if they were the “fires of Arafat.” Abu Sufyan said, “What is this? It looked like the “fires of Arafat.” Budail bin Warqa’ said, “Banu ‘Amr are less in number than that.”

425 Ṭabarī Vol. 6:31 Al-Harith-Muḥammad b. Sa’d-Muḥammad b. ‘Umar: Qusayy instituted the lighting of the fire at al-Muzdalifah when the *wuquf* (standing) took place there,` so that those being driven away from ‘Arafah could see it. This fire continued to be lit in this place throughout the jahiliyyah. Al-Harith-Muḥammad b. Sa’d-Muḥammad b. ‘Umar and Kathir b. ‘Abdallah al-Muzanī-Nafi’ (‘Abdallah) Ibn ‘Umar: This fire was lit in the time of the Messenger of God, and of Abu Bakr, Umar and Uthman. Muḥammad b. Umar (al-Wagidi): It is lit to this day.

426 Qur’ān (2.198) Afadtum is 4th form faḍ or fid.

Muḥammad preached on Arafat.⁴²⁷ The assumption is that he was on a plain below the mountain when he preached, but this is not inferred in the original texts. Jebal Haroun in Petra has a unique feature. Just below the mountain peak there is a large area about 250 meters square, (800 X 800 feet) with outlying areas around it. This would be an area sufficient for thousands of people who are standing all afternoon, watching



the sun descend over the horizon. Remember that when Muḥammad described the pilgrimage, Muslims were still a minority in Mecca. Those on the yearly pilgrimage would easily have fit into this spot. There is also a Byzantine church complex situated on this spot, (see the ruins on the left of the photo above) presumably built in the 5th century.⁴¹⁷ This competition for religious space might be one of the reasons why there was conflict between Muḥammad and Christians.

It is also interesting to note that boundary stones are associated with Arafah mountain.⁴²⁸ On the following maps, you will see that Jebal Haroun is near the outer boundary of the sacred area in Petra.

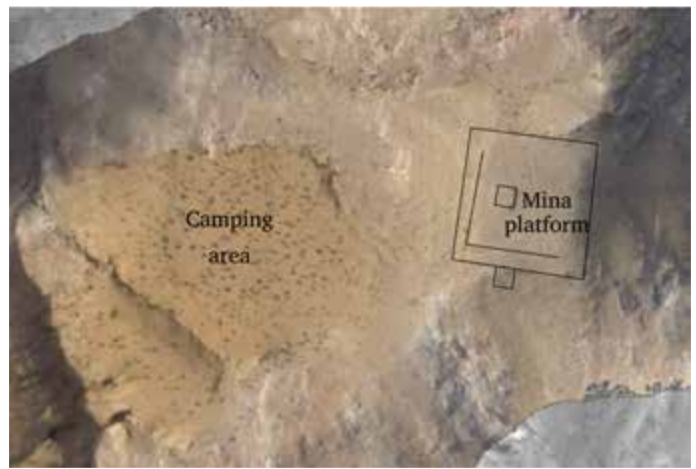
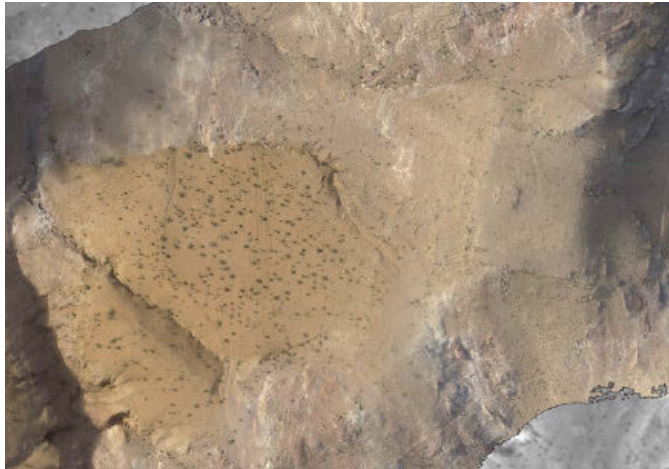
At the top of Jebal Haroun is a Muslim shrine. This is what one would expect if this location is indeed Arafah. Below the mountain is a location I believe is Mīnā. This was a place associated with camping, slaughtering sacrifice, and throwing stones a pillars. I believe that this place was also located in Petra, near the center of the valley close to Jebal Haroun (Arafah), which is south of the city.

427 Fiqh us Sunnah 5.94A Ibn Al-Mubarak reported from Sufyan Al-Thauri, he from Az-Zubair bin Ali, and he from Anas bin Malik that he said: "The Prophet (peace be upon him) spent the day at Arafah until almost sunset. Then he said, 'O Bilal! Ask the people to be quiet and listen to me.' Bilal stood up and asked the people to be quiet and listen to the Prophet (peace be upon him). When the people were quiet, the Prophet (peace be upon him) said: O People! A little while ago Gabriel (peace be upon him) came to me. Gave me salutations from Allah, and informed me that Allah has forgiven those who spend the Day at Arafah, and those who stop at Mash'ar al-Haram, and that He has guaranteed their debts.'

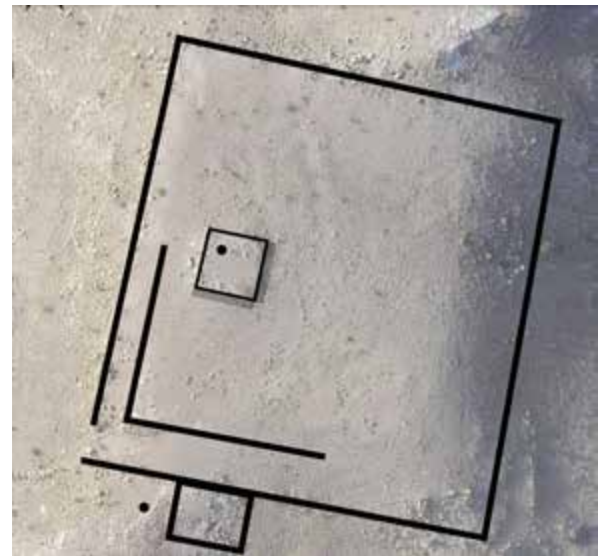
428 Just before Islam, the Khuza'ah in turn assaulted Salmi, Kulthdm, and Dhu'ayb, the sons of al-Aswad b. Razn al-Dill-they were the leading men and dignitaries of the Band Bakr-and killed them at 'Arafah, by the border markers of the sacred territory. Ṭabarī Vol. 8 page 160-161

The complex that I believe is Minā is an ancient large open place with several small buildings and a small pillar(s) in the centre on a raised platform. It was known to Glueck, Horsfield, Conway, and others, but little work has been done on this area. This complex was more recently surveyed by Kouki and Lavento.⁴²⁹ In 2015, it was surveyed by Sarah Parcak and Christopher A. Tuttle.⁴³⁰

Tuttle made four trips to this area after studying satellite photos to get an idea of the size and shape of the monument. During these trips, they found an area that had been cleared and leveled, (similar to a football field). It was 56 meters by 49 meters. (184 feet x 160 feet). Considerable effort went into making this area level, and paving it with large flagstones. The area seems to have had several uses down through history, as it was constructed in pre-Islamic times, and seemed to have been used for religious purposes, camping,



and even more recently as a threshing floor. These are all characteristics of ancient Minā, which was a stopping place for the pilgrims to throw stones at the *Jamrat*. It was also a place where pilgrims erected tents and stayed the night. There was also a market associated with this area. The small raised platform in the centre included at least one column, as a remnant of a single drum was visible buried on the west side. This drum is smaller than those found in situ on the east side of the smaller platform.” (see right)



429 Kouki, P., and Lavento, M. 2013 *Petra, the Mountain of Aaron: The Finnish Archaeological Project in Jordan*, Vol. 3: *The Archaeological Survey*. Helsinki: Societas Scientiarum Fennica

430 *Hiding in Plain Sight: The Discovery of a New Monumental Structure at Petra, Jordan, Using WorldView-1 and WorldView-2 Satellite Imagery* Author(s): Sarah Parcak and Christopher A. Tuttle Source: Bulletin of the American Schools of Oriental Research, No. 375 (May 2016), pp. 35-51 Published by: The American Schools of Oriental Research

47. The Markets

Early Islamic records such as Ibn Hisham, al-Ṭabarī and others mention a number of markets that took place in the wider regions of Mecca. I have counted eight of these markets, but there might have been more. Some of these were annual markets, some weekly, and some were well established. Below I list the markets and venture a guess as to where these might have been in the wider regions of Petra.

‘Ukāẓ

The ‘Ukāẓ market was the most famous and important of all the annual fairs of the Arabs in pre-Islamic times. (See EI, Vol 10 Page 789) It was situated between Nakhla and al-Ṭā’if in the territory of the Hawāzin tribe. References to ‘Ukāẓ are scattered in the various sources.⁴³¹

Along with two other fairs, Maḍjanna and Dhu al-Majāz, they were in the proximity of Mecca and were held during the Sacred Months, presumably where there were pilgrims traveling to and from Mecca. ‘Ukāẓ market was the most important of the three, and was held in the month of Dhu al-Qa’da, just before the start of the pilgrimage to ‘Arafāh and Mecca. The tribe of Tamīm controlled some of ‘Ukāẓ’s important functions.

The word ‘Ukāẓ means “a shepherd’s staff,” so this may have begun as a large sheep and goat market, serving the needs of pilgrims and worshippers. Although it was principally a fair for buying, selling and the exchange of various commodities, ‘Ukāẓ became a place where poets gathered and where Arabic literature received some development, where literary and other contests were held, and where covenants and contracts were struck.

The sūq (market) with its environs was the scene of some important historical events, such as the Fidjār Dispute involving Quraysh and Hawāzin. It also witnessed some historic visits such as the preaching of the Prophet Muḥammad and the Christian Quss b. Sā’ida said to have been the bishop of Nadjrān.

Badr

Badr was the location of one of the pre-Islamic Arab festivals. Every year an eight-day market was held.⁴³² Camels were slaughtered and food and wine were plentiful. Singing girls performed there.⁴³³

Badr is described as a night’s journey from the coast and at the junction of the main road from Medina and the caravan route from Mecca to Syria. This was where the first great battle of Islam was fought during the month of Ramadan (2 March 624).

According to this description, the Badr Market would have been at the junction of the road up from ‘Aqaba

431 Such as: Ibn Ḥabīb, K. al-Muḥabbar, ed. Ilse Lichtenstadter, Ḥaydarābād 1942, 263-8, and al-Marzūki, K. al-Azaymina wa ‘l-amkina, Ḥaydarābād, 1332/1914, i, 165-70; the best modern work is Sa’id al-Afghani, Aswak al-‘Arab, Damascus 1960, 277-343

432 Ṭabarī Vol 7. page 167

433 Ṭabarī Vol 7. page 45



where it joins the road through Wadi Rum, and makes its way up north: Approximately 29°47'57.14"N 35°18'31.00"E.

Dhu Al-Majāz

We have already mentioned this market. It was inside of the harām area, as Sunan Abu Dawood⁴³⁴ tells us that it was developed for people who were in the ihram state, and was held only during the season of hajj. Because of its closeness to Mount Arafat, I have suggested that it took place near the farm at the foot of Jebal Arafah (Jebal Haroun) near Petra. 30°19'0.09"N 35°25'47.55"E

Majannah

Little is known of Majannah. Al-Ṭabarī⁴³⁵ tells us that Majannah is near Marr al-Zahran. Yaqut says: It was one of the marketplaces in pre-Islamic Arabia near a mountain, called al-Asghar.⁴³⁶

Ḥubāshah Souk

Khadijah hired only the Messenger of God and another man from Quraysh to go to the market of Hubāshah in Tihāmah (sea coast).⁴³⁷

434 Sunan Abu Dawood 703

435 Ṭabarī Vol. 9: 38

436 Yaqut 283

437 Ṭabarī Vol. 6:49

Nabataean Market

Al-Ṭabarī makes only one mention of this market. Presumably it was close to the Holy City. The connection between the Holy City and a Nabataean market is striking, as Petra was the original capital city of the Nabataeans.

*Al-Hirith-Ibn Sad-Muḥammad b. 'Umar-'Abd al-Salim b. Jubayr-his father: The Messenger of God had 7 milch camels which were kept at Dhu al-jadr and al-Jammi' and their milk was brought to him. [One of the] milch camels was called Muhrah. It was given by Sa'd b. 'Ubidah from the herd of the Banu 'Ugayl' and was abundant in milk. Al-Rayyd and al-Shagra' were bought from the Banu 'Amir in the Nabatean (al-Nabl) market. Al-Burdah, al-Samra', al-'Axis, al-Yasirah, and al-Hanna' were milked every night and their milk was brought to him. The Prophet's slave named Yasir [who looked after those camels] was killed [during the Bedouins' raid].*⁴³⁸

48 Camping Spots

These are known as the five *miqat* or the *Stations of Ihrām*. The prophet Muḥammad assigned these locations, so that visiting pilgrims would know where to put up their tents. Once the pilgrims did their ritual washing they would enter the state of Ihrām, wearing a pilgrim's robe consisting of two seamless sheets of cloth. This signified that they had entered into the *sacred state* or *Ihrām* (from the word *harām* or *forbidden*). The five stations or camping places were known as:

1. Dhu al-Hulaifa: This is the miqat for the residents of Medina and for those who approach the holy city via the south.
2. Juhfah: This is the miqat for the people who come from Syria or from the north.
3. Qarn al-Manazil: This was a hilly place the east of the Holy City and is the miqat for the people coming from that side.
4. Zat Irq: This is the miqat for the people of Iran, Iraq and for those coming from that direction.
5. Yalamlam: This is the miqat for the people of Yaman and others coming from that direction including India, and the far east.

Since these assigned locations we designated for people living in tents, no archeological record remains. The major concern of these areas would be that of access to water. Insufficient archeological survey and excavation have taken place at Petra to accurately determine where these locations might have been, but there are ample places that may have been used. For instance, Qarn al-Manazil would have been in the hills above Wadi Musa. As we have seen, Dhu al-Hulaifa would have been at the base of Arafah Mountain, for those coming up from Wasi Arab via that route. Juhfah was probably where the Bedul settlement is, north of Petra. Hopefully further excavations will uncover where these locations may have been.

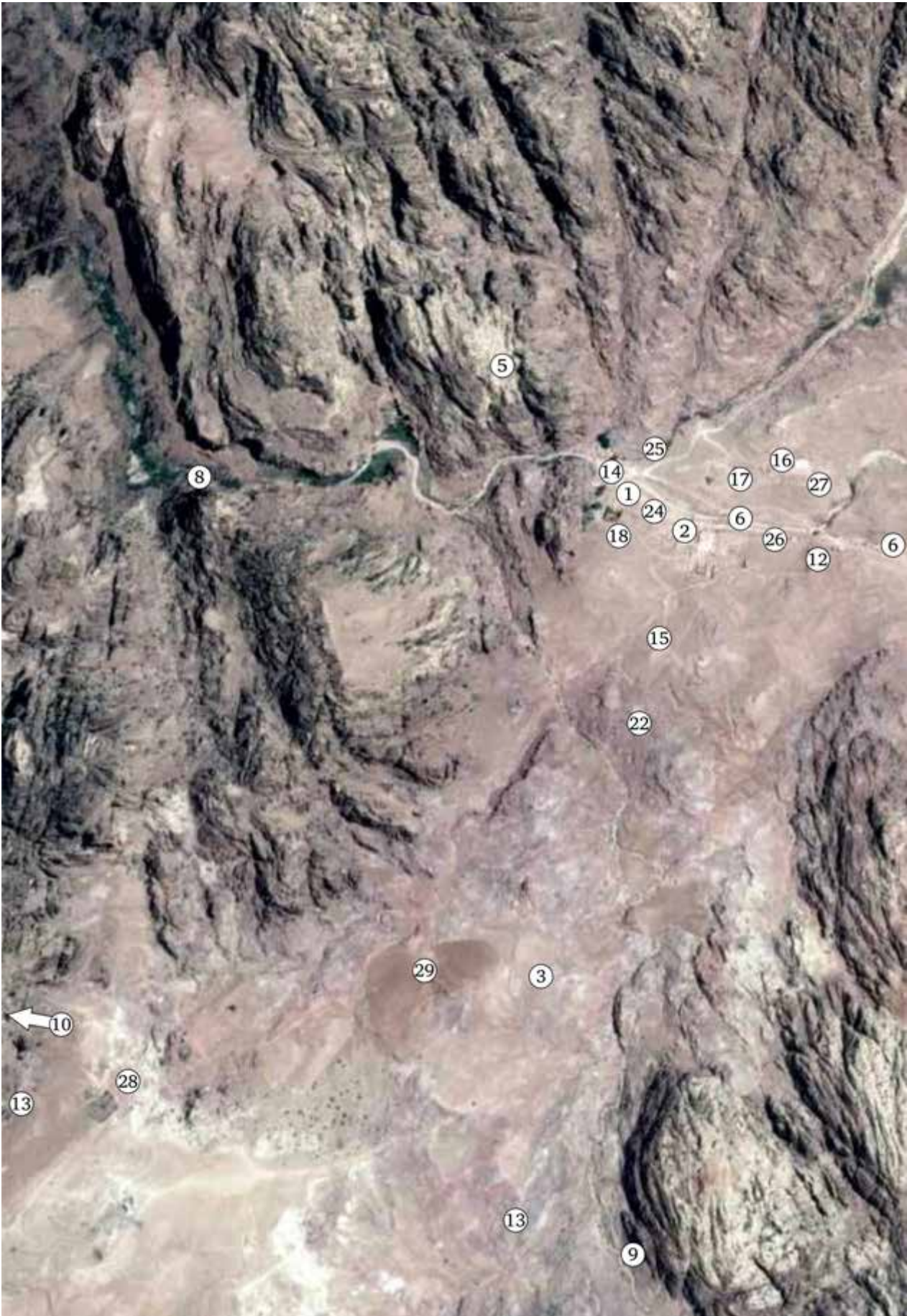
438 Ṭabarī Vol. 9 page 152

49. Islamic Petra

In this section I would like to point out locations around the city of Petra that I feel fit the Islamic descriptions of ancient Mecca. While much of this is guesswork, I believe that this will demonstrate that many of the geographical locations mentioned in early Islamic writings could be found in and around Petra. In the list I provide the name of the location, GPS coordinates, and a number which is placed on a map of Petra following this list. Then, following this, I provide a map of where the possible original pilgrimage route might have been.

1. Ka'ba (30°19'47.42"N 35°26'24.90"E) A rectangular structure with the cube containing the Black Stone. This was surrounded by a large courtyard which contained 360 idols around the outside. It was most likely constructed after the earthquake of 519 which destroyed many of the churches and pagan temples in Petra. The holy relics were brought into the centre of the city, to a place where nothing could fall on them.
2. Roman Bathhouse (30°19'45.71"N 35°26'26.10"E) which caused Muḥammad problems, resulting in his banning Muslims from using bathhouses.
3. Minā (30°19'13.63"N 35°26'20.77"E) The place of stoning. This is an open paved area with a single pillar in the centre.
4. Marwa Mountian (30°19'43.12"N 35°27'20.79"E) This mountain has a processional path going up the side, and a place where idols stood at the top.
5. Şafa Mountain (30°20'5.97"N 35°26'7.44"E) This mountain has a processional path going up the side, and a place where idols stood at the top.
6. Road between Marwa and Şafa, used in the pilgrimage rites. (30°19'44.83"N 35°26'35.56"E) Today, much of this is known as the Colonnaded Street.
7. Thaniya (1) (30°19'21.93"N 35°27'20.58"E) This crack in the rock is where pilgrims entered the city. The processional way would have begun at the Al-Aqşa gathering area in Jiranah (or Ain al Musa today) and then followed the main road down into the valley passed Al-Adna and into the modern siq, much as tourists walk today.
8. Thaniya (2) (30°19'51.86"N 35°26'4.05"E) This narrow canyon goes from Jebal Ḥabīs down to the Araba.
9. Thaniya (3) (30°17'29.58"N 35°26'2.93"E) al-Murar (Bitter Bush Pass) entering Petra from the south.
10. Mount Arafah the focal point of the early pilgrimage. (Mount Haroun today).
11. Mount Ḥira (30°20'4.72"N 35°27'40.96"E) the area where the cave was located.
12. The cave (30°20'11.37"N 35°27'32.87"E) where Muḥammad received his vision.
13. Sacred Marker Stones - over 20 large stones located all around the holy precinct.

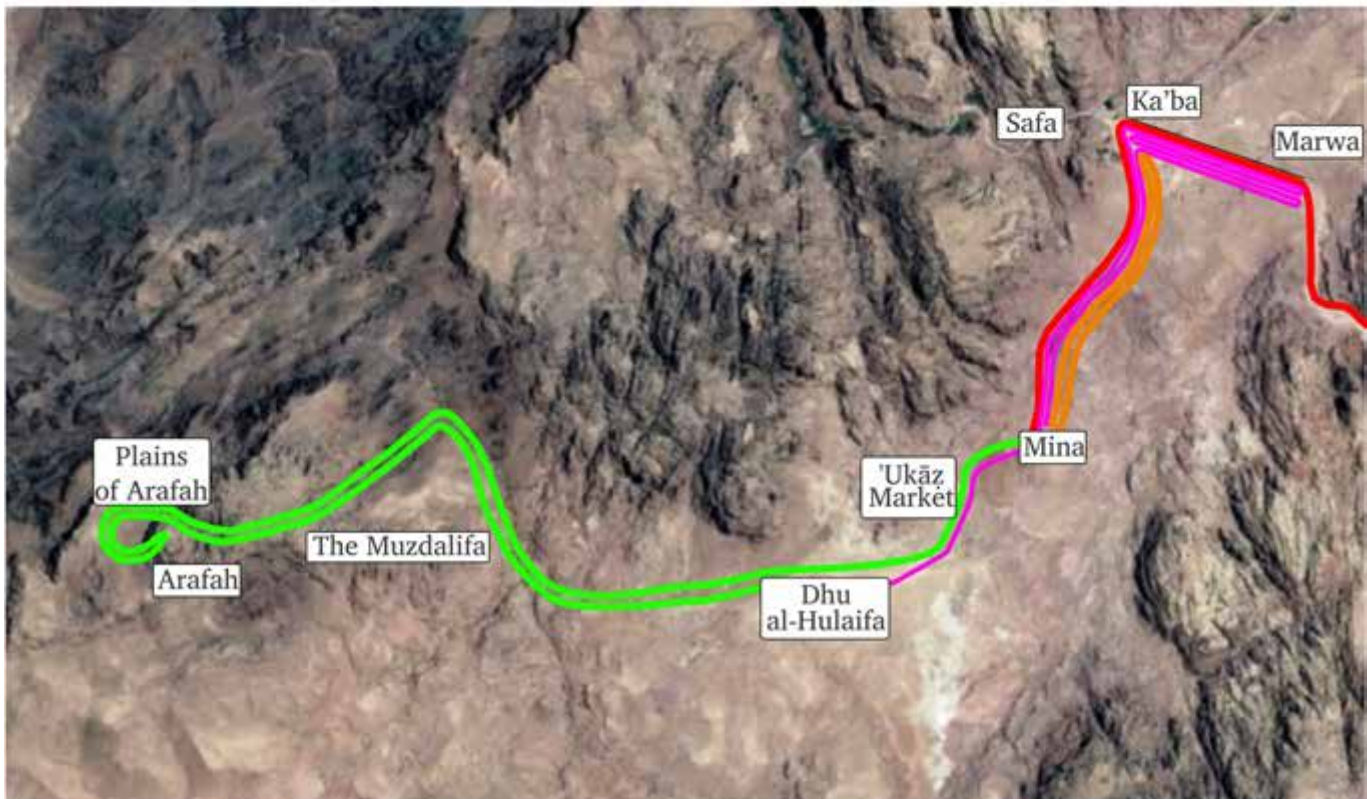
14. Well of Zamzam - located near the Ka'ba, now lost. This is a possible location, but the real location may be covered up with rubble.
15. Lower Mecca (30°19'35.48"N 35°26'27.71"E) physically the lowest side of the city.
16. Upper Mecca (30°19'51.27"N 35°26'36.92"E) physically the highest side of the city.
17. Temple of al Uzza (30°19'49.34"N 35°26'32.97"E) known today as the "Temple of the Winged Lions."
18. Temple of Dushara (30°19'45.98"N 35°26'24.43"E) known as Qasr al-Bint by locals.
19. Al-Hajun (30°20'7.81"N 35°27'12.96"E) the highest point in Mecca.
20. Slope of Kada (30°20'44.62"N 35°27'35.60"E) a mountain north of Mecca. (Ṭabarī 8:163, 176)
21. Fields where Abdulla the father of Muḥammad, possibly tilled. (30°21'25.43"N 35°26'36.31"E)
22. Southern city walls. (30°19'32.01"N 35°26'23.95"E)
23. Northern city walls. (30°20'3.44"N 35°26'55.22"E)
24. Trebuchet stones found. (between 30°19'46.42"N 35°26'26.26"E and 30°19'44.56"N 35°26'31.08"E)
25. Where trebuchet could have attacked from. (30°19'50.41"N 35°26'25.89"E)
26. Rainwater passage where Muḥammad ran between Marwa and Ṣafa. (30°19'45.62"N 35°26'35.11"E)
27. Churches (30°19'50.91"N 35°26'39.53"E) where Muḥammad would have met Christians.
28. Dhu al-Majāz Market.
29. Dhu al-Hulaifa camping spot.





Possible Original Petra Pilgrimage

From right to left as set out by Muḥammad in Ṭabarī vol. 9 page 14



Day 2 (9th Dhu al-Hijja)

Leave Mina and go to Jebal 'Arafah

Climb to the high shelf then keep the vigil (*wuquf*)

Descend 'Arafat through the Muzdalifa to the Dhu al-Hulaifa camping spot

Collect stones and stay over night (Total 7-8 kms)

Day 3 (10th Dhu al-Hijja)

Go to Mina - Stone the largest pillar (*Jamrat al-'Aqaba*)

Travel from Mina to Ka'ba and circle it.

Pass seven times between the hills of Safa and Marwa

Return from Ka'ba to Mina - Stay for two or three nights (Total 7 - 8 kms)



Day 1 (8th Dhu al-Hijja)

Ritual cleansing in the spring, (*miqat*) and change into *ihram* clothing
Follow the processional route through the siq into the heart of Petra.
Circle the Ka'ba (*tawaf*). Pass between the hills of Safa and Marwa (*saf*)
Go to Mina and stay over night (Total 7-8 kms)

Days 4-6 (11th-12th/13th Dhu al-Hijja)

Mina - Stone all three pillars (*jamrat*) in set order
Return to Ka'ba for final *tawaf*
Can return to Mina for dismissal or leave from Ka'ba
(Total 3 -5 kms)

50. Qarmatian rebellion

Sometimes Muslims have argued with me that there would have been a massive backlash against moving the Qibla. However, as the most zealous men would have been in armies, slowly being reduced in numbers and replaced by younger converts from new lands, there was not a strong cohesive group in the first century of Islam. As time passed, many revolts arose against Abbāsid rule, especially the eighth and ninth centuries. By 890 CE (277 AH) dissatisfaction with the Abbāsid changes to Islam grew in central Arabia, giving room for Shī'a Ismā'īli groups to propagate their teachings. They taught that the pilgrimage to Mecca in Saudi Arabia was simply a superstition, and so they desired to build a Muslim society based on reason and equality.

The Muslim world at this time was economically successful and wealthy, based largely on a huge slave-based economy.⁴³⁹ In 899 CE, the Qarmatians took control of Baḥrain's capital Hajar, and also the city of al-Hasa which became the capital of their state. The Qarmatians tried to convince fellow Muslims from going to Mecca. Sometimes they physically tried to stop them from going to Mecca for the pilgrimage. They so vehemently opposed pilgrimages to Mecca that in 906 CE they began ambushing caravans and massacring pilgrims. Then in 927 CE they sacked Mecca, desecrated the Well of Zamzam with corpses of ḥajj pilgrims, and then removed the Black Stone and took it to Al-Hasa. That finally put an end to the pilgrimage to Saudi Arabia. In 931 CE, the Qarmatian chose a new Mahdī-Caliph who set about abolishing Shari'a law, and changing the qibla direction yet again.

Since the original ancient qibla was lost, the Qarmatians instituted a new qibla that required the faithful to always pray towards fire. When the new Mahdī-Caliph began to curse Muḥammad and the other prophets, instituting a number of strange new ceremonies as well as executing some of the nobles, the Qarmatians decided their new Mahdī-Caliph was an imposter and they killed him.

With the Black Stone in captivity the pilgrimages halted. Islam was in crisis. In 952 CE the Abbāsids agreed to pay a huge sum for the return of the stone. When they received it back, it had been broken into several pieces.⁴⁴⁰ When it was returned, it was wrapped in a sack and thrown into the Friday Mosque of Kūfa accompanied by a note saying "By command we took it, and by command we have brought it back."⁴⁴¹

After a defeat at the hands of the Abbāsids in 976 CE the Qarmatians focused on internal issues and slowly their status was reduced to that of a local power.

According to the Arabist & historian Curtis Larsen, this had important repercussions for the Qarmāṭians ability to extract tribute from the region and slowly their finances failed.⁴⁴²

Eventually the Qarmatians were expelled from Iraq by the Buyids (985 CE) and they faded from history.⁴⁴³

439 Nakash, 2006, *Reaching for Power: The Shi'a in the Modern Arab World*

440 Encyclopedia Britannica, 2007, *Mecca's History*

441 Glasse, 2001, page 245,

442 Larsen, 1984, page 65, *Life and Land Use on the Bahrain Islands*

443 Busse, 1975, *Iran under the Buyids* and Muir, 1915, pages 558-562

Conclusion

When I first arrived in the Middle East in January 1979, I had no idea that I would become consumed with a study of the geography of early Islam. I originally focused on Arabic language studies and immersed myself in the various cultures and peoples of the Arabian Peninsula. But early on in my first year in Arabia, Dr. George E. Kelsey, an archeologist and mentor asked me to take some visiting historians to the ancient city of Petra. That trip opened my eyes to the richness of the history around me and the mystery and intrigue that surrounded the ancient city of Petra. In the following years, I made over 60 visits to Petra taking people of all types including medical doctors, all sorts of engineers, and even a plumber. He was very interesting as he pointed out things I had not noticed about the waterworks around Petra. In the following years, I traveled extensively through Syria, Yemen, Oman, the Gulf countries, Saudi, and even into the Empty Quarter, eventually returning to Jordan with a contract to work with the Ministries of Tourism and Antiquity, producing materials that would bridge the gap between academics and tourists.



Above: Author in 1979

But it wasn't until Muslim friends began to challenge me to read the Qur'ān in Arabic that I began to have questions about geography. As I read, I could see the scenes unfolding, but so much of the story seemed to be centered on northern Arabia. After years of considering this, and taking down notes and comments, I wrote my initial thoughts in the book: *Qur'ānic Geography*, published in 2010.

In 2013, I began writing a script for a documentary film that would address the question: *Where was the original Masjid al-Ḥarām?* When that film came out (*The Sacred City*), people started to ask additional questions, so in 2016, I began to write a series of papers to address these issues. As I wrote, many fellow academics provided information and advice. I am deeply indebted to each of them, and have tried to list them in the Dedication and Acknowledgements at the beginning of this book.

I sincerely trust that this book have answered many of your questions. At the same time, I am sure that more questions are being raised. This is what academia thrives on. Many people looking at the same thing from different angles.

In closing, I would like to draw your attention to an old Muslim man, centuries ago, sitting in Damascus wailing about the changes that were being introduced into Islam. While most of the men who started out with Muḥammad had long since died in battle, he remembered back to the days when a different Islam was practiced in Arabia. Two Bukhāri hadiths are below from Al-Bukhāri : Volume 1:507

Narrated by Ghailan: Anas said, "I do not find things as they were at the time of the Prophet." Somebody said "The prayer is as it was." Anas said, "Have you not also done to the prayer what you have done?"

Narrated by Az-Zuhri when he visited Anas bin Malik at Damascus and found him weeping and asked him why he was weeping. He replied, "I do not know anything which I used to know during the lifetime of Allah's Apostle except this prayer which is being lost (ie. not offered as it should be)."

I feel sorrow for those Muslims who want to go back to the Islam that the prophet brought to them. As Anas bin Malik reveals to us, everything had changed. Up until now, most Muslims never imagined what fantastic things might have changed. Today we realize that this even included the location of Masjid al-Ḥarām! How does this change impact the validity of Muslim prayers, their pilgrimage, or even if their food is Halāl? As one Muslim man asked me, "The Qur'ān commands us to face Masjid al-Ḥarām. Who had the authority to change it to Saudi Arabia?" This indeed is a troubling question. If the rebel Ibn al-Zubayr changed it without the permission of the ruling caliphs, then how can it be valid today? Does this not invalidate everything in Islam that deals with the Qibla? This is a difficult time for Islam.

What does all of this mean? I have no idea; I was simply asked by friends to read the Qur'ān and give my thoughts. Now I realize that Muslims will have to choose. Do they still follow the current teachings of Islam and face the Black Stone in Mecca? Or should they choose a different path? The question now is: How will individual Muslims respond? I trust that Muslims everywhere will be free to search for their own understanding of Islamic history, and be free to follow their convictions.

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Film
The Sacred City
<http://thesacredcity.ca>

In 2016 Glasshouse Media (UK) produced an 85 minute documentary film on Dan Gibson's theory. Beautifully filmed in the Middle East, *The Sacred City* is a detective story that investigates the dawn of Islam, uncovering evidence that is shaking the Muslim world. Using satellite imaging and the latest technologies Canadian historian Dan Gibson has uncovered compelling evidence that challenges traditional accounts of how Islam began.

Gibson suggests the Islamic holy city of Mecca came later in history, and that the world's 1.6 billion Muslims are praying in the wrong direction. The Qur'ān commands them to pray towards the 'forbidden gathering place.' Gibson provides archeological and historic evidence that this place is not in Mecca in Saudi Arabia.

In this startling and original documentary, writer and historian Dan Gibson demonstrates that descriptions of Mohammed's original holy city – as detailed in the Qur'ān and Islamic histories, do not match that of the Mecca we know today. Then using the Qibla direction of the first ancient mosques, Gibson discovers the location of the original 'forbidden gathering place.'

This film sets out evidence from within Islamic sources – while also using modern technologies - to track down the biggest secret of the last fifteen hundred years. Gibson not only finds the location of the original Mecca but also provides a convincing argument as to how such a great misunderstanding in Islamic history came about.

While clearly controversial, *The Sacred City* is respectful of Islam but shows how a deliberate attempt was made to hide secrets that impact every Muslim today. The evidence is compelling and fascinating. In a time when the world's agenda is being set by Islam, it is important for the origins and history of this world religion to be examined afresh. This is a ground breaking documentary film with world-wide appeal for both religious and secular audiences.

The Sacred City is available for sale on the Internet and through a number of internet film providers. It has been translated into numerous languages. These can be found on YouTube, and listed on the Sacred City website.

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