

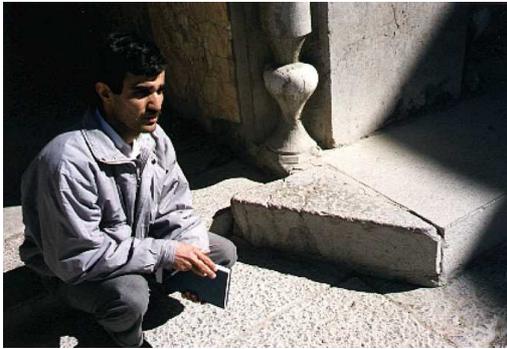


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شاخص ظهر



The **SHAKHES-E ZOHR** – noon markers on Persian mosques, to indicate the beginning of the obligatory **Zuhr- noon prayer**

Les **SHAKHES-E ZHOR** ou marqueurs de midi sur les mosquées de l'ancienne Perse, pour indiquer le début de **Zuhr**, la prière obligatoire de midi

Fig. 1 : Title-picture

Inspecte veteres libros de **persicis fanis** aut rete electre omnem complectens:
Videbis innumerabilis imagines mirificas ut hanc unam mihi a Persico amico
Mashallah Ali-Ahyaie novissimo anno missam: Venus osculatura lunam.



Jaame Abbasi mosque or also called Shah mosque or Emam mosque. Isfahan

Fig. 2: Photo: Mohamad Soltanolkottabi

[If you look into books of **Iranian mosques** or go to Internet you will find thousands of picturesque views like this photo of Mohamad Soltanolkottabi, which my Persian friend **Mashallah Ali-Ahyaie** has shared last year with me: Venus, just about to kiss the moon!] *After the Latin text only the **French text** will be provided:*
*[Last year, after I had told my friend Heidi in Bavaria that I had provided a talk about **Buenaventura Suarez**, she replied: “Did you talk in Latin with them?” Immediately I thought by myself: If I might have a second chance at CCS I ought to start my talk at this sophisticated society at least with my initial sentence in Latin language! – In French language only]*

Years ago I happened to see a fairly blurred little photo in Internet and its title was “**sundial**”. Aha! I thought by myself: Where is the sundial?

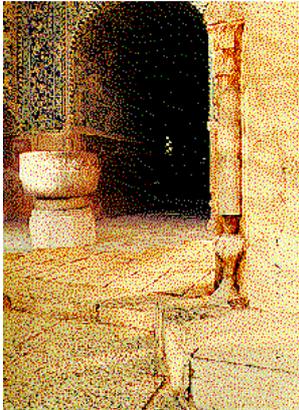


Fig. 3: “sundial” [bahai_16]

Well, I imagined, one day I will get to know more about it! I asked my friend **Mohammad Bagheri** from Teheran and also **Gianni Ferrari** from Modena, as I had found another, better image of this “sundial”.

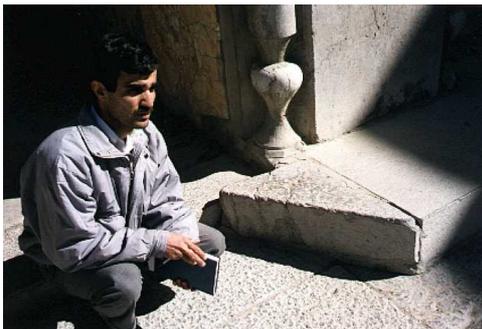


Fig. 4: SHAKHES-E ZOHR in Masjid Imam, Naghshe-e-Jahan Square, Isfahan.

And now it was obvious: This simple tool must have something to do with a **noon marker**. When the sunrays have passed the north-facing hypotenuse of this right-angled stone triangle real local noon must be indicated.

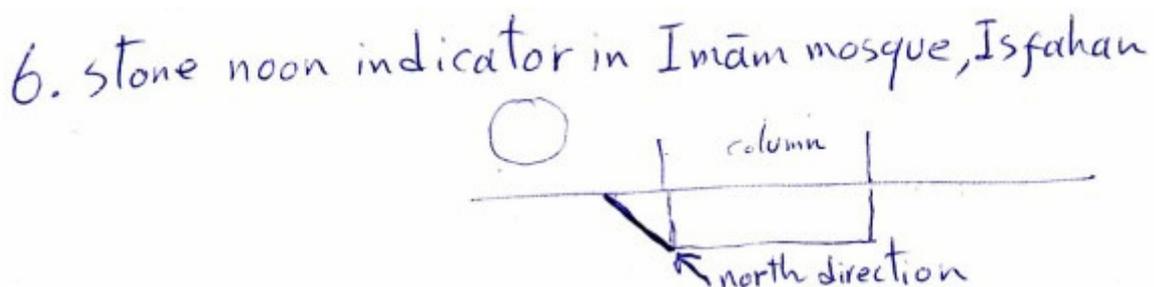


Fig. 5: A drawing by Mohammad Bagheri

Mohammad Bagheri answered immediately and sent several images of these simple and very special time-indicators to start the **Zuhr**- noon prayer to me. He promised to send more... and half a year later he remembered his promise and sent a good dozen of paper copies of photos to me.

Before I will show them to you I would like to point to the fact that there are complicated rules about when exactly to start the **Zuhr** prayer. I only want to show a drawing about the beginning of the five different prayer-times which I have taken from the manuscript of Gianni Ferrari's new book about Islamic sundials.

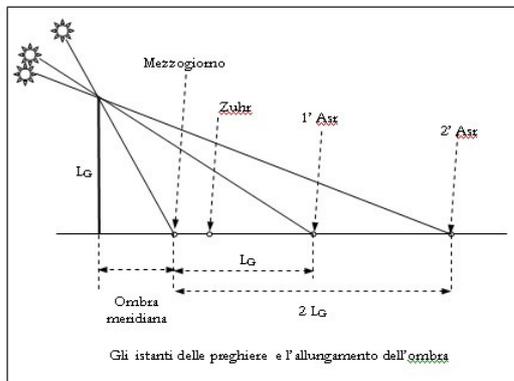


Fig. 6: Beginning of **Zuhr** past real noon. Picture by Gianni Ferrari

Gianni Ferrari has kindly sent 9 pages from the manuscript of his new book about Islamic sundials to me. I have made some copies of them if someone wants to have a look at it, just to get an impression. These rules for “when to start a prayer” are pretty complicated to calculate and they also differ between the different groups of the Islamic religion.

Salah is an Arabic word, which means a spiritual relationship and communication between the creature and his Creator. **Salah** is one of the five pillars of Islam. A special communication (Salah) is to take place five times a day for a Muslim: Fajr (Dawn), **Zuhr (Noon)**, 'Asr (Afternoon), Magrib (Sunset), and 'Ishha' (Late Night).



Fig. 7: Noon marker of **Friday Mosque of Isfahan**; Photo from M. Bagheri

Fig. 8: Noon marker of **Friday Mosque of Isfahan**; Photo from Narges Assar-zadegan



Fig. 9: Jame or Friday mosque of Isfahan. Photo from Hamzeh Karbasi

From this mosque here I am able to show a little treasure to you: A carefully calculated **double-noon marker**, reduced to its absolute simplicity!
This photo is of course unfair towards you if you have to find a noon marker from it! However from the next close-up picture, which Mohammad Bagheri sent to me, you can perhaps see it already.



Fig. 10: Double Noon marker of Jame mosque of Isfahan. Photo: Mohammad Bagheri

... And how about this detail?



Fig. 11 Detail with two blue noon marker lines of Jame mosque of Isfahan. Photo: Mohammad Bagheri

Mohammad Bagheri explained it like this:

“You see a wall of the **Friday mosque of Isfahan**. On the right part a balcony is seen. On the edge of the balcony (near the middle of the photo) you see two small blue vertical signs (small rectangles). On the left of the middle of the photo the vertical edge of a narrow brick wall is seen. When the shadow of this vertical edge reaches **the first blue sign** (the left sign), it is **true noon** and **prayer time**. Some time later when the sun has apparently moved an angle **whose tangent is one-seventh**, the shadow of the vertical edge reaches **the next blue sign** (on the right) and this indicates the time of noon prayer in another Islamic discipline.

This photo has never been published and I am glad to provide to you this original material. Some years ago, a local person showed and explained it to me and Mr. Claudio Cecotti from Udine in Italy. I have checked it and found it correct.”

In the next picture you can see another noon marker of Friday mosque of Isfahan:



Fig. 12: Noon marker of Jame mosque in Isfahan

In the following picture you see a noon marker situated on a column near a water basin in front of **Holy shrine of Imam Reza Mashad**:



Fig. 13: Noon marker of Holy shrine of Imam Reza Mashad.

Photo: Mohammad Bagheri



Fig. 14: Holy shrine of Imam Reza Mashad. Photo: Orient Explorer

And the next picture shows the rediscovery of the noon marker of **Mirzā Davūd mosque in Hamadān:**



Fig. 15: Noon marker of Mirzā Davūd mosque in Hamadān.
Photo: Mohammad Bagheri

Here there is a very simple small iron noon indicator at **Hakim mosque in Isfahan:**



Fig.16: Noon indicator of Hakim mosque in Isfahan.

Photo: Mohammad Bagheri.

Fig.17: Hakim mosque in Isfahan. Photo: Hamzeh Karbasi

A noon indicator gnomon on a wall in mosque **Dār al-Salām in Tehran**

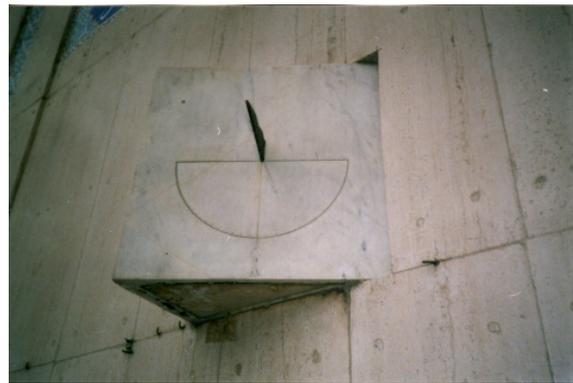


Fig. 18 and Fig. 19: noon indicator gnomon on a wall in mosque **Dār al-Salām in Tehran**. Photos: Mohammad Bagheri

The next noon marker fascinated me a lot because of its different shape compared to all the other noon indicators, because of its beautiful positively cut text and because of its creator. It is situated in **Chahār Bāgh** (Four Gardens) and belongs to a religious school. The building behind the noon marker is no mosque. The wall is oriented in East-West-direction.



Fig. 20: Noon indicator of **Chahār Bāgh**. Photo: Mohammad Bagheri

The text, written on the cube is in Persian language and it contains an account of the trip to Isfahan by **Seyyed Jalal Tehrani** who built the stone in 1932. He was ambassador of Iran in Belgium and also worked in Brussels observatory. Let me show a photo of Mr. Tehrani to you before we focus to the stone texts!



Fig. 21: Seyyed Jalal Tehrani: Preparations for the observation of a sun eclipse in Mashad. Photo from Mohammad Bagheri

The south face of the cube:



Fig. 22: Noon indicator of **Chahār Bāgh**. Photo: Narges Assar zadegan

Fig. 23: Noon indicator of **Chahār Bāgh**. Photo: Mohammad Bagheri

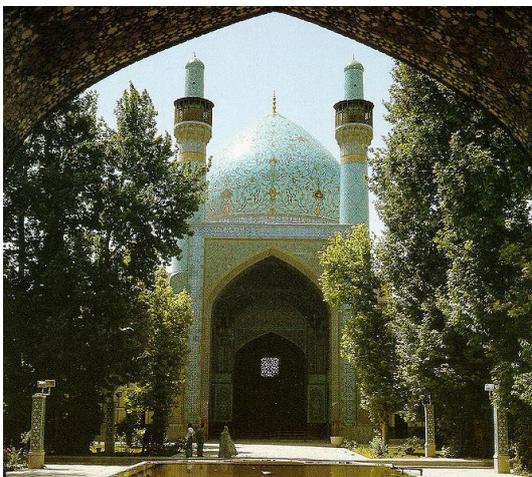


Fig. 24: An entry to **Chahār Bāgh** (Four Gardens). Photo from internet

Well, the text on the Southern side of the noon indicator cube is:

در روز یکشنبه ۲۹ جمادی الآخره ۱۳۵۱ قمری و ۷ عقرب و ۸ آبانماه ۱۳۱۱ شمسی این سنگ برای تعیین ظهر حقیقی بیادگار سفر اصفهان اینجانب سید جلال الدین الحسینی الطهرانی در مدرسه چهارباغ نصب شد که چون جدار غربی این سنگ سایه اش معدوم شد ظهر حقیقی واقع می گردد در زمان تولیت آقای آقا مصطفی مدرس نجل مرحوم سید عبد الحسین سید العراقین طول اصفهان ۵۱ درجه و ۳۵ دقیقه

Fig. 25: Cube-text of the southern side (Provided and translated by Mohammad Bagheri)

... and the text on the Eastern side is:

شرقی گرینویچ و عرض آن ۳۲ درجه و ۴۵ دقیقه شمالی استوا و انحراف قبله از جنوب بمغرب ۴۵ درجه و ۱۱ دقیقه و جنوب جغرافیایی ۴ درجه و ۵۴ دقیقه در شرق جنوب مغناطیسی قطب نما است ارتفاع اصفهان از سطح اقیانوس مابین ۱۴۷۵ و ۱۵۲۰ متر است و بواسطه انکسار شعاع روزهای سال از ۳ دقیقه تا ۷ دقیقه بلندتر از روزهای حقیقی میشود

Fig. 26: Cube-text of the eastern side (Provided and translated by Mohammad Bagheri)

The picture of the east side of the cube is from my friend **Narges Assarzadegan**.



Fig. 27: Noon marker **Chahār Bāgh**. Photo by Narges Assarzadegan. East side

The next picture gives a nice overview of the ensemble behind the noon marker.

Fig. 28: Noon marker **Chahār Bāgh** and the surrounding. South side of the cube.

As the texts of these two cube sides are a bit difficult to read and a bit long I have prepared a paper for those of you who might be interested in it.

[On the southern face:]

"On Sunday 29th Jamadi al-Akhera of 1351 A.H. Lunar and 7 Scorpion and 8 Aban 1311 A.H. Solar, this stone was fixed in Chahar-Bagh school for determining the true noon, as a record from the Isfahan trip by me - Seyyed Jalal al-Din al-Hussayni al-Tehrani. When the shadow on the western face vanishes, it is the true noon. [This was done] in the time of custodianship of Mr. Aqa Mustafa Modarres, son of the late Seyyed Abd al-Husayn Seyyed al-Araqayn. The [geographical] longitude of Isfahan [is] 51 degrees and 35 minutes ..."

[On the eastern face:]

... east of Greenwich and its [geographical] latitude is 32 degrees and 45 minutes north of the equator. The deviation of Qibla from south towards west is 45 degrees and 11 minutes. The geographical south is 4 degrees and 54 minutes in south-east of the magnetic south [shown by] the compass. The altitude of Isfahan from the level of ocean is between 1475 and 1520 meters. Due to refraction of light, the days of the year are 3 to 7 minutes longer than true days."



Nowadays there are of course various lists of the prayer-times easily available from internet and the mental connection with the sun, being our main time-indicator more or less gets lost. Therefore such simple time-indicators as these **SHAKHES-E ZOHR** are real cultural treasures and I hope to find more of them with the help of my friends in Iran and possibly also in Pakistan.

If one is interested in sundials one also has the chance to get to know a lot about the surrounding culture. This is what always interested me. **Love and culture** are very essential for our life and the culture-skin is very thin – as we all know. Nobody ought to be allowed to declare whole culture nations as the centre of evil! This means: We have to treat the cultural heritage with great sensitivity.

If you want to see and read more about these Persian noon markers,

don't miss to have a look at www.ta-dip.de

Thank you very much for your interest!

