

HAD ALEXANDER ZOL--QUARNAIN REACHED THE ARCTIC CIRCLE

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ABSTRACT

The holy Quran states that Zol-quarnain reached the sun's setting position and then the ascension place of the sun where the sun is always shining (It does not rise nor set). This phenomena known as midnight sun occurs on the border of the Arctic circle around summer solstice.

Several scholars and explanators of the holy Quran believe that Zol-quarnain (so called because of reaching between the two horns of the sun and because of wearing two horns) is Alexander Zol-quarnain.

From Astronomical calculations, the border of the Arctic Circle was at latitude $w_s = 66^{\circ}.261$ around 330 B.C. The latitude of the setting position then over hot water spring is approximately $w_s = 65^{\circ}.418$.

The existence of a hot water spring of black mud in the setting position of the sun indicates that this area must exist in a volcanic area, and indeed right at this latitude, the Siberian Basalt volcanic plateau exists. Basalt gives this place the black color.

Alexander then moved about 51.5 Km north to latitude $w_A = 65^{\circ}.91$ approximately to observe the ascension position of the sun. We invite excavations:

a) In and around the Siberian Basalt volcanic plateau at latitude $65^{\circ}.418$.

b) Around $w_A = 65^{\circ}.91$ in Siberia,

which should prove that Zol-quarnain had reached the Arctic Circle around summer solstice on 27 of June 330 ± 3 B.C.

It is proposed that the lapp people living in the arctic circle are the descendants of Alexander's soldiers and the original inhabitants of the arctic circle

IN THE NAME OF GOD, MOST BENEFICENT, THE MERCIFUL

They ask you concerning Zol-quarnain, say, "I will rehearse to you something of his story (83). Verily, we established his power on the earth, and we gave him the ways to all ends (84). One such way he followed (85). Until, when he reached the setting position of the sun, he found it setting in a (hot water spring of black mud) and he found people there. We said "O Zol-quarnain either punish them or treat them kindly (86). He said "whoever does the, wrong, we shall punish him; then he will be sent back to his Lord; and He will punish him severe punishment (87). But, whoever believes and works righteousness, he will have a goodly reward, and easy will be his task as we order it (88). Then he followed another way (89). Until he reached the ascension position of the sun, he found it ascending on people for whom We have provided no shielding against it (90).

THE QURAN, SURAT AL KAHF

TEXT

The prophet Mohamed, peace is upon him, was questioned by the unbelievers with the jews advice about a man who toured the earth. In response, aiat (83-98) of Surat Al-Kahf were revealed to the prophet Mohamed peace is upon him. Translations of these aiat are given above. The Holy Quran thus states that Zol-quarnain reached

- a) The setting position of the sun where he saw the sun setting in a hot water spring with black mud and that there were people living around the spring.
- b) Then Zol- quarnain moved to the ascending position of the sun where he found it ascending on some people for whom GOD made no covering from the sun.

ASTRONOMICAL EXPLANATIONS OF THE SETTING AND THE ASCENSION POSITIONS OF THE SUN

Fig (1) illustrates the positions at the earth at summer and winter solstices. During the summer solstice, the arctic circle is subjected wholly to the sun, however just below the arctic the sun sets completely only for few minutes, this would be the last place on earth where the apparent solar disk fully disappears behind the horizon as illustrated in Fig (2). This is thus the setting position of the sun.

If we move north of this position by a distance equivalent to the vertical diameter of the sun which is shortened by refraction to $29'$, we will find a place where the lower limb of the sun touches the horizon at 00.00 UT without setting, thus remaining above the horizon for 24 hours. This is the ascension position of the sun (fig.2b). Further north of this position ,the lower limb of the sun does not touch the horizon (as seen in a Lapp land post card reproduced in plate 1). On the other hand, the situation at the Antarctic would be the opposite, i.e. complete darkness, however there would be a place where the solar disk would come up fully at 12.00 UT above the horizon for moments with its lower limb touching the horizon. This is thus the rising position of the sun (fig.2c). It is seen from Fig (1) that the distance between the setting and the rising positions equals to the diameter of the earth. We refer here to aiat 28 of Surat Al Shuaraa (the poets)

"He is the Lord of the rising and the setting positions and what is in between, if you have reflect."

It is also seen from fig (1) that during both the summer and winter solstices there are two rising positions and two setting positions in harmony with Surat Al-Rahman- 17.

"He is the Lord of the two rising and the two setting positions."

THE SETTING AND THE ASCENSION POSITIONS OF THE SUN

At a place in north latitude w , taking account of the effect of refraction, the sun remains above the horizon (does not set) so long as

$$u \geq (89^{\circ} 10') - w$$

where u is the declination of the sun.

The setting position of the sun occurs presently at $w_s = 65^{\circ} 43'$ on summer solstice (21 - 22 June), i.e. it is the last position on earth where the whole solar disk sets for few moments and then reappears.

Clearly, as we advance northwards, the duration of the sun remaining above the horizon increases, so if we move beyond the setting circle $w_s = 65^{\circ} 43'$ by about the sun's vertical diameter, i.e. $29'$, then the sun remains above the horizon for an interval of about 10 days; June 23rd to 2nd July for latitude $w_A = 66^{\circ} 12'$. The situation of the setting and the ascension positions are illustrated in fig 1 (a & b).

Several authors independently pointed out that what is meant by the ascension position of the sun is what is currently known as midnight sun (El shliekh Sharawy (1990), Yousef (1976) and Hasab El Naby (1990)).

WHO IS ZOL-QUARNAIN

As was mentioned earlier, the prophet Mohammed was questioned by the unbelievers with the Jews advise, about a man who toured the earth. In response, aiat 83 to 98 of Surat The Cave were revealed to him.

But why was he called Zol-quarnain (the two horned one)? The answer has double facts:

a) If we accept the popular identification of Zol-quarnain with Alexander the Macedonian (Tafseer Al Galalain 864 H) and the English translation of the Quran by Yusef Ali (1943)- who is also a scholar of Greek history- ,then Alexander was represented on coins wearing two horns on his head (Gazal 1978). Alexander is essentially known as "the two horned Alexander".

b) The second reason given by the holy Quran is of astronomical interest. Taking into account that the Arabs call the limb of the sun first and last seen as the sun rises or sets respectively, the horn of the sun. Zol-quarnain reached the setting position of the sun, where the upper horn (limb) of the sun just touches the horizon (fig.1a) then he moved to the ascension position of the sun where the lower horn of the sun just touches the horizon (fig 1 b).

Thus Zol-quarnain so called because of reaching between the two horns of the sun. This very explanation was also given independently by Ibn-katheer (774 H). It may be mentioned in this respect that Alexander's face was drawn on the disk of the sun (Cabnet des estampes Bib. nat Snark) as mentioned by the French encyclopedia.

THE SETTING POSITION OF THE SUN AT THE TIME OF ALEXANDER ZOL-QUARNIAN ABOUT 330 B.C.

The obliquity of the ecliptic at 330 B.C. was then $23^{\circ}.74$ hence the border of the Arctic Circle was at latitude $w_s = 66^{\circ}.26$, the latitude of the setting position was thus $65^{\circ} 25'.5 = 65^{\circ}.425$. Summer solstice occurred then on 27 June between 18.00 and 24.00 UT

Taking into account that Zol-quarnain observed the sun setting in a hot water spring, then the real Zenith distance was more by $0'.3$ than at $0^{\circ} C$, this is equivalent to 0.5 km. South i.e. at $w_s = 65^{\circ}.418$.

THE ASCENSION POSITION OF THE SUN ON 330 B.C.

To reach the position of the ascending sun, Zol-quarnain had to move northwards by the sun's vertical diameter. The ascension position of the sun then occurred at $w = 65^{\circ} 54'.5 = 65^{\circ}.91$. Thus Zol-quarnain moved 51.5 km north of the hot water spring to reach the ascension place.

GEOLOGICAL DETERMINATION OF THE POSITION OF THE HOT WATER SPRING

The existence of a hot water spring of black mud in the setting position of the sun indicates that this area must exist in a volcanic area. Fig (3) is the world volcanic map, right underneath the arctic circle a Siberian Basalt volcanic plateau exists (Wells 1971). Basalt gives this place the black color.

This geological evidence leaves no doubt that the setting place of the sun reached by Zol-quarnain is indeed in this Siberian-Mongolian Basalt volcanic plateau at latitude $65^{\circ}.418$.

ANTHROPOLOGY OF THE LAPP PEOPLE

The Lapp people or (the Saams) are the present inhabitants of the arctic circle in Norway, Sweden, Finland and the western part of Siberia. Their features, clothes and culture are quite different from the Scandinavians. We had the pleasure of being guests of the Lapp people in Lapp-land in northern Finland. They have mostly black or dark brown hair and eyes. Serological examinations have shown the Saam to differ racially from their European and Siberian neighbors (Siuruainen and Aikio 1977). Their origin is not known. Their features and costumes are quite similar to the Greeks (see photos of the Lapp people in plate 2).

We may thus propose that the Lapp people are the descendants of some Greek soldiers of Alexander's army that he left over in the setting place of the sun in order to control the natives there. They probably have intermarried with the natives.

The holy Quran mentioned the existence of two populations at the two sites the setting and the ascension positions of the sun.

CONCLUSION

The holy Quran states that Zol-quarnain reached the setting and the ascension positions of the sun. Considering Alexander to be the one meant, then we have reckoned that he reached the setting position of the sun $w_s = 65^{\circ}.425$ on 27 June 330 \pm 3 between 18.00 and 24.00 UT where he found the sun setting in a hot water spring of black mud and there he found some people living around the spring. He punished those who were unjust and rewarded those who believed in God and did good deeds. Presumably he left some of his companions to keep order.

I propose that, the descendants of those companions are the Lapp people. Then he moved about 51.5 km. north till he reached the ascension position of the sun where he found it ascending on other people for whom God made no night at that time.

We thus invite excavation around latitude $w_s = 65^{\circ}.4$ in the Lapp-land in western Siberia in and around the Siberian-Mongolian Basalt volcanic plateau.

This excavation should prove the existence of dwellings of the ancient inhabitants of this part of the world three centuries BC. Geological studies should prove the present or past existence of hot water spring in this location e.g. remnants of hot water algae. On the assumption that Alexander the Macedonian is the two horned one, then we should find proofs of him left over in this location. The real character of the two-horned man is to be determined from excavations.

We also invite excavations around latitude $w_A = 65^{\circ} 54'.5 = 65^{\circ}.91$ where some group of people lived there.

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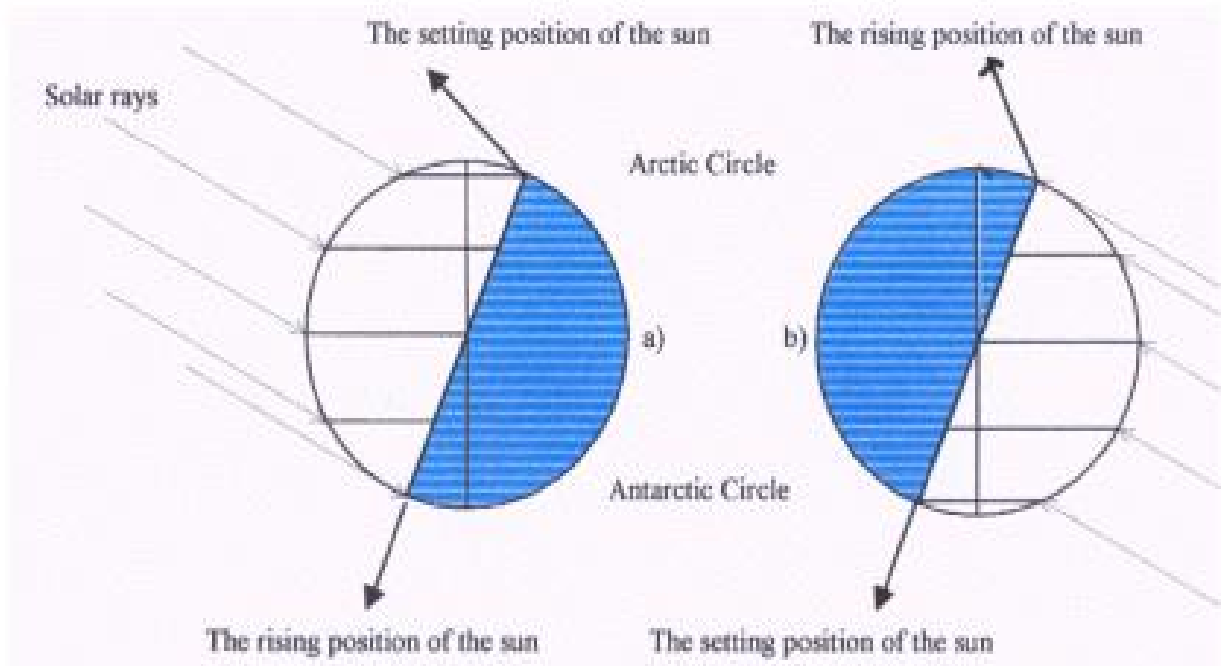


Fig.(1): Inclination of the sun rays on a) 21 June b) 22 December
 Showing the two setting positions and two rising positions of the sun. The distance, between the setting position and rising position, equals the radius of the sun.

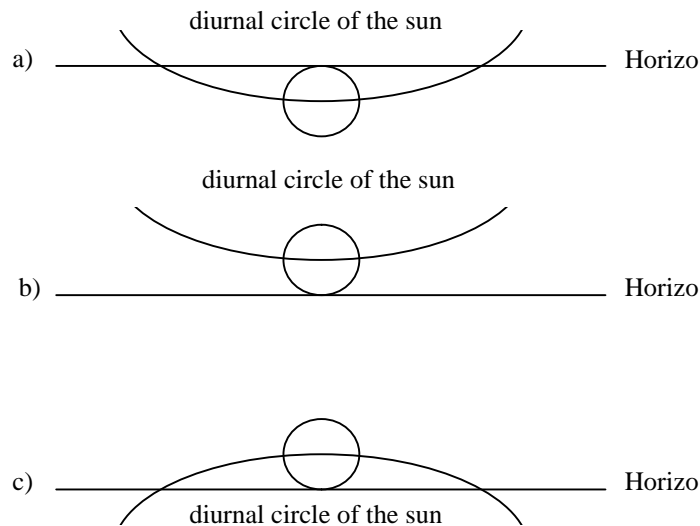


Fig.(2): a) The setting position of the sun with the upper solar horn just touching the horizon.
 b) The ascension position of the sun with the lower solar horn just touching the horizon.
 c) The rising position of the sun with the lower solar horn just touching the horizon.

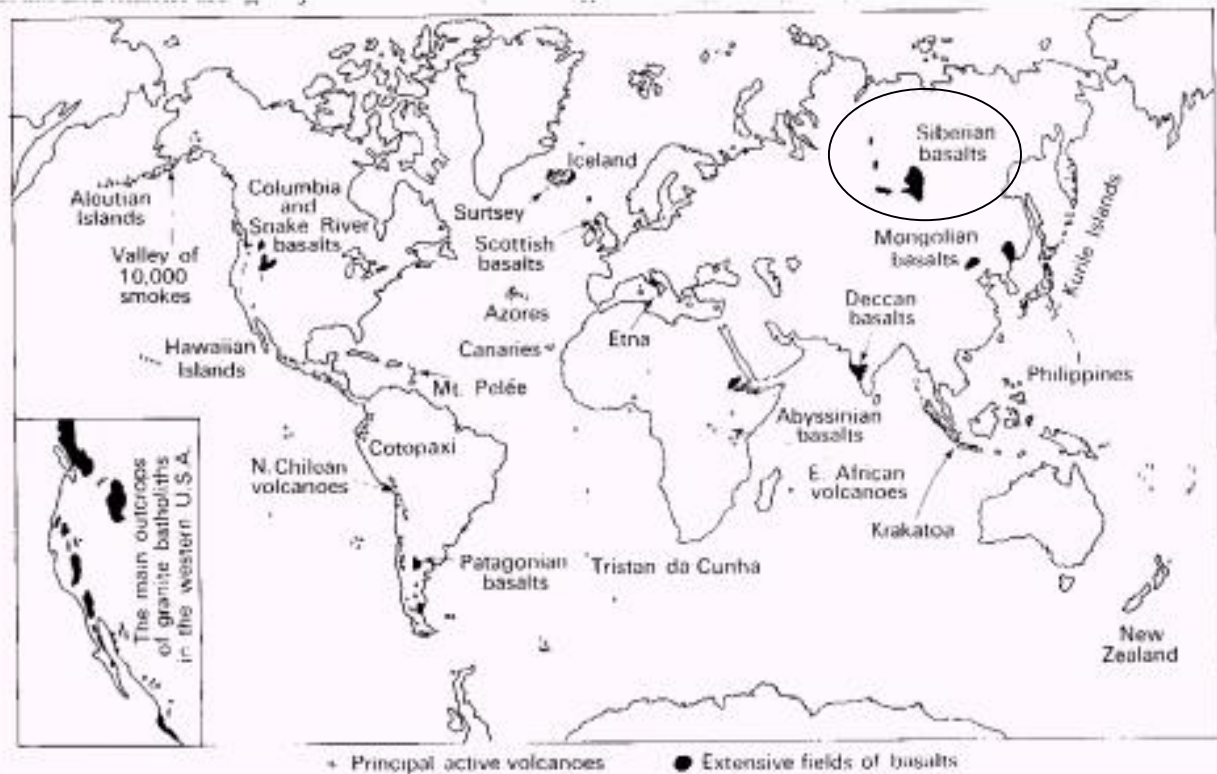


Fig 3: World map showing distribution of active volcanoes. Large fields of Basalts are shown in black (after Wells 1971). Note the Siberian Basalts in Siberia where excavations are recommended at latitude $65^{\circ}41'8''$. Zol-Quarnain is believed to have reached there at summer solstice and saw the sun set in a hot water spring of black mud. Natives were living around this hot water spring.



Plate 2: A Lapland couple in north of Finland dressed in their costumes (photographed by S. M. Yousef).



Plate 1: A series of mid-night sun photographed in Lapland (reproduced from a local postcard)