

POSSIBLE ASTRONOMICAL MEANING OF THE POVLEN BALL

– preliminary statement –

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Abstract. The Povlen ball is a spherical rock in the Povlen mountain, near Valjevo, on which the indented signs are found. Archeological team of Petnica Research Center suggested the possible meaning of these signs. They claimed that these marks are signs of "Sepherd inscriptions". We noticed two groups of signs: ones like dimples and the others like figures. Working hypothesis is that five gathered dimples could represent constellation of Cepheus, partially fulfill our expectations. Besides, there is the possibility that one figure represents constellation of Cygnus (Cross). Both of these constellations are used for orientation on the sky, and similar archaeoastronomical objects were funded in Bulgaria.

1. INTRODUCTION

The Povlen ball is a spherical rock discovered accidentally in 1974 near the Mravinjci village in the Povlen mountain near the Valjevo town in Serbia, Yugoslavia. What makes this sphere interesting, besides its shape which is rare in nature, are the signs carved into it. There was some public interest in this ball, but few scientific papers about it. Our paper is intended to demonstrate to the scientific community the need to protect this unique cultural monument, because of the possible astronomical meaning of the signs on it.

2. CHARACTERISTICS OF INVESTIGATED OBJECT

At present, the Povlen ball lies in the vicinity of the Mravinjci village, in the Milinkov Potok creek which is a tributary to the Polička Reka river, in the basin of the Jablanica river; the ball is 1.5 km northwest of the forester's house, at an altitude of 890 m. The ball is not *in situ*; according to the oral assertion of Mr. Milinko Milivojević, who is the owner of the land, the ball rolled and fell into the creek (stream) after the roots of a cut-down beech tree nearby were pulled out of the ground. It is clearly visible that the ball was, for some time, buried by the alluvial deposits of the creek, which explains the preserved condition of the signs carved in it.

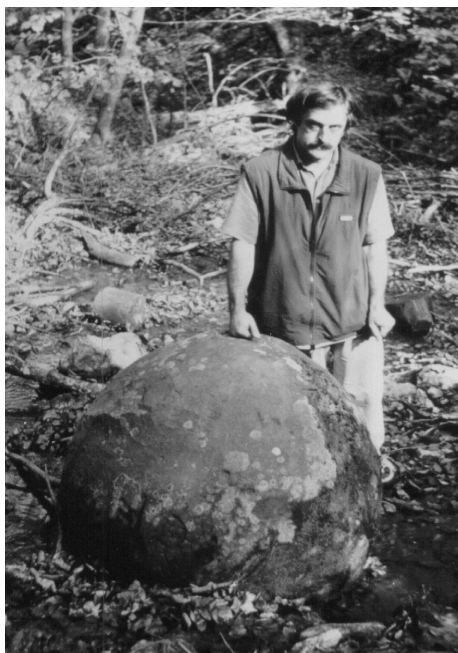


Figure 1: The Povlen ball.

by human intervention, and inside two of them, there are also signs. Five depressions are grouped together, and two are far apart, "scattered". Besides this, there are several visible traces of damage on the ball, and we can divide them into the older (darker) and the more recent (brighter in color).

The diameter of the ball is 102 cm, and the circumference approximately 320 cm, but the bottom side of the ball is somewhat flattened (Fig. 1). On the basis of a petrological sample, V. Majić concluded that it is the volcanic rock known as tuffite (Danilović et al., 1995). According to an oral statement of Z. Jež, an archeologist in Valjevo, it is porphyr. The ball is undoubtedly of natural origin, which is also indicated by the presence of 6 more spheres and 4 hemispheres in the land owned by Mr. Jakov Milovanovic in the village Bele Vode although on those 10 there are no markings.

Working on the terrain in 2001, we noticed that there are two kinds of carvings on the Povlen ball: figures, and, dimples. Five figures are completely visible, and at least one is partly visible above the surface. We can discern, with certainty, at least 7 hemispherical dimples (depressions) obviously carved

3. THE RESULTS OF INVESTIGATION AND DISCUSSION

Pešić (2001) connects three signs (markings) on this ball with the cave inscriptions on the territory of former Yugoslavia, and dates them back to the a period between 10,000 and 20,000 years BC Danilović et al. (1995) proposed three hypotheses: the hypothesis of the prehistoric tumults, the hypothesis of the great migration of nations, and the hypothesis of shepherds' inscriptions, and, trying to interpret the meaning of the signs on the bal, they opted for the third as most probable one.

The original idea that prompted our research, based on a drawing included in the paper (Fig. 2), (Danilović et al., 1995) was, that the five grouped depressions on the ball might, perhaps, represent the constellation of Cepheus. To verify this, we measured (while we were in the terrain) the distances between the depressions, and then we presented them as points on a sphere (Fig. 3).

The analysis shows that there are discrepancies between our results and the presentation of ISP (Danilović et al., 1995) which affected the quality of our conclusions. However, the imprecisions might be attributed to those who carved the inscriptions. Николов, Харалампиев (1991) mention the example of an amulet found in the Kalinin region of Russia, with the constellation of Ursa Maior carved into it. They, too, noticed discrepancies, and said "the artist may have allowed himself, in his work,

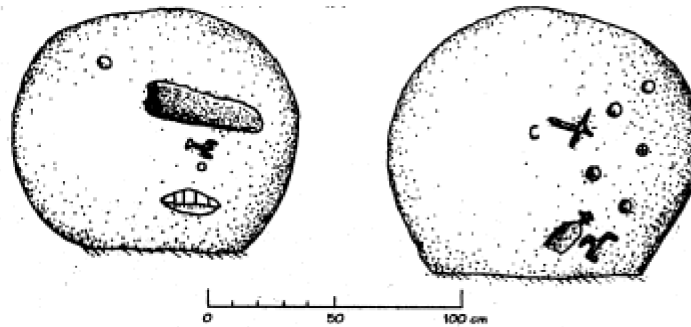


Figure 2: Drawing of west and east side of the Povlen ball.

some imprecisions" (p. 34). Besides, the stars move, over long periods of time, and so the constellations become deformed.

A further analysis shows that some of the figures, too, might represent constellations. Namely, the odd cross, looking rather like a short sword or a dagger, reminds us of the Cygnus constellation (the sign †). Cygnus is convenient for orientation in the sky because the star Deneb (Alpha Cygni) makes, with Vega (in Lyra constellation; Alpha Lyrae) and Altair (in the Aquilla, constellation; Alpha Aquillae) the well-known "summer triangle". Besides, Deneb is, in the winter, the brightest star on the north-western part of the sky. In Cepheus there are no stars of such brightness, but, as a circumpolar constellation, visible from Serbia all the year (continually), the Cepheus could be used for orientation also. Besides, Deneb and the Cepheus make it easy to locate the Polaris.

All of this suggests that the depressions and some of the figures on the Povlen ball might represent constellations, with the figures being those constellations for which the Serbs has the names, while the depressions were individual bright stars not connected into any constellations, but still of some auxiliary use in orientation.

Representing stars on a rock might be explained by a legend, once popular among the Serbs, that the sky is heavy and firm, made of stone. This might have somewhat deeper roots. In the Bible, there is a mention of stone sky. N. Janković (1951) writes: "How strong was the Church influence in forming the myth of stone sky, today is hard to say, but it seems likelier that the Serbs inherited this myth from the earlier Indo-European community of nations, because, as Nodilo also remarks, Aryans also thought the heaven was made of rock" (p. 29).

In Bulgaria, a country immediately to the east of Serbia, also was discovered a drawing on stone, probably representing stars. Николов, Харалампиев (1991) also mention that in the area of Kovačevica village, on one rock, many depressions of various diameter were discovered, corresponding (by their size) to the known statistical distribution of stars of various magnitudes (degrees of brightness). The authors think that "all this supports the view that the mosaic on the rock is a star map, showing many of the constellations of the sky as seen from Bulgaria in the autumn" (p. 35).

This finding in Bulgaria leads us to assume a possibly connected, mutually related origin of the two findings. Besides, some markings on the Povlen ball are similar to the first and the last letter of the Bulgarian Glagolytza (Glagolitic) alphabet, which

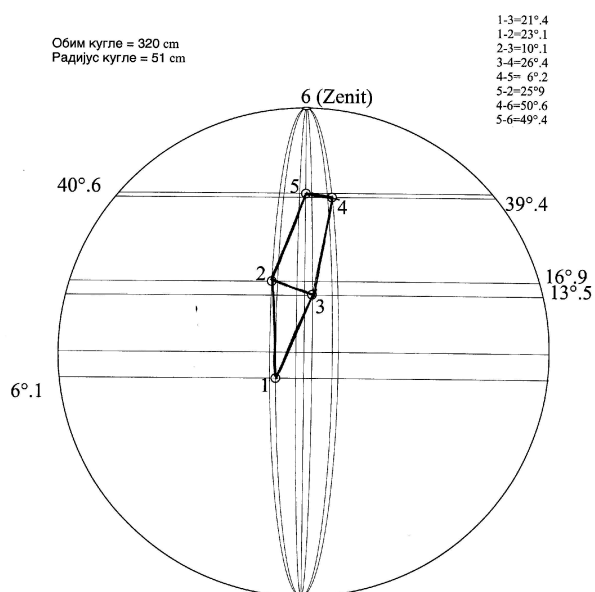


Figure 3: Possible constellation of the Cepheus based on our measurements.

would suggest a beginning and an end. In this sense, the Povlen ball may have been a border marker, signifying the beginning and the end of a country (a State), while the astronomical part would have an orientational, geodetic meaning. Limited space does not allow us to develop this idea in more detail, here.

4. CONCLUSION

In our work are presented several questions waiting to be answered by variously specialized researchers. Our modest contribution is that we have, hopefully, pointed to the possibility that some of the depressions on the Povlen ball may represent the Cepheus constellation and that one figure may represent the Cygnus constellation. If any scientific research is to be at all meaningful, this cultural monument must be protected immediately, and we are calling for this to be done, because we have noticed already fresh damage on the ball.

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