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ASTRONOMICAL OBJECTS IN ROCK ART

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In this paper I attempt to demonstrate that some images of ancient rock art may be connected with astronomical observations.

KEY WORDS Rock art, calendar

Numerous and mysterious geometrical signs of rock art demonstrate an external formal similarity and have a wide territorial and chronological spread. Circles and concentric circles, disks with rays, spirals, different variants of swastikas, spectacle-shaped images (dumbbells) and some other symbols are among them. They constitute a universal set of signs reflecting peculiarities of prehistoric consciousness. Usually such signs have different semantics and their meaning depends on their place in the composition. In some cases such figures may be interpreted as images of astronomical objects.

Mugur-Sargol, the Bronze Age sanctuary (middle of the II millennium BC) is situated in Sayan canyon on the territory of the Tuva Republic. On vanished rock outcrops and boulders on the riverside were found numerous pecked and carved petroglyphs. Standing for heavenly bodies, concentric circles with radiated rays are surrounded by numerous stars depicted as points (Figure 1(1–3)). Connected by thin engraved lines, groups of pit-marks are also pecked there; they are believed to be depictions of constellations. A huge rock outcrop in the centre of the sanctuary has a pillar shaped projection in its north-western part. The gully is in the centre of this projection and different depictions are grouped around it. Pits are among them connected with thin engraved lines; they probably reproduce constellations (Figure 1(5–6)) (Devlet, 1980).

Astronomical objects are also depicted on other rock art sites in Sayan canyon of the Yenisei river. For example, on the Bigictig-Haia rock art site (middle of the II millennium BC) a group of depictions on stone No. 76 may be presumably interpreted as a map of the starry sky. We should especially mention spectacle-like forms among these engravings (Figure 2).

In this paper I will analyse so-named “spectacle” images or dumbbells. Such signs consist of two circles connected by one or several lines; sometimes they simply adjoin without any connecting lines. Along with there comprising equal circles,

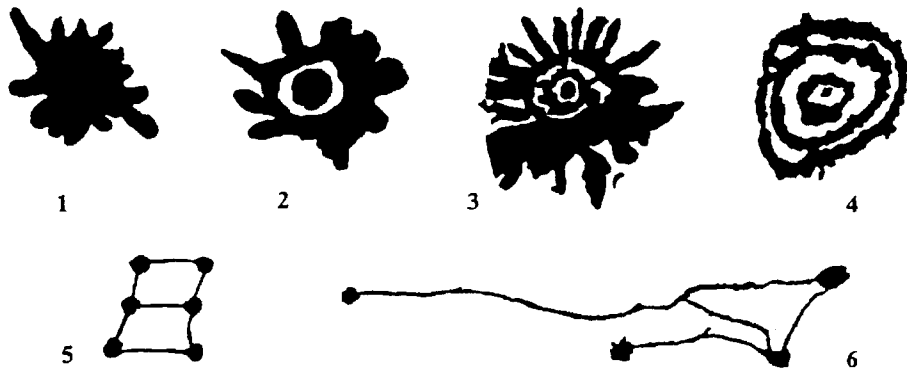


Figure 1 Heavenly bodies and constellations, Yenisei River, Sayan canyon (from Devlet M., 1980). (1-3), (5-6) Mugur-Sargol rock art site; (4) right bank of Chinge River.



Figure 2 A map of starry sky. Bigictig-Haia, No. 76.

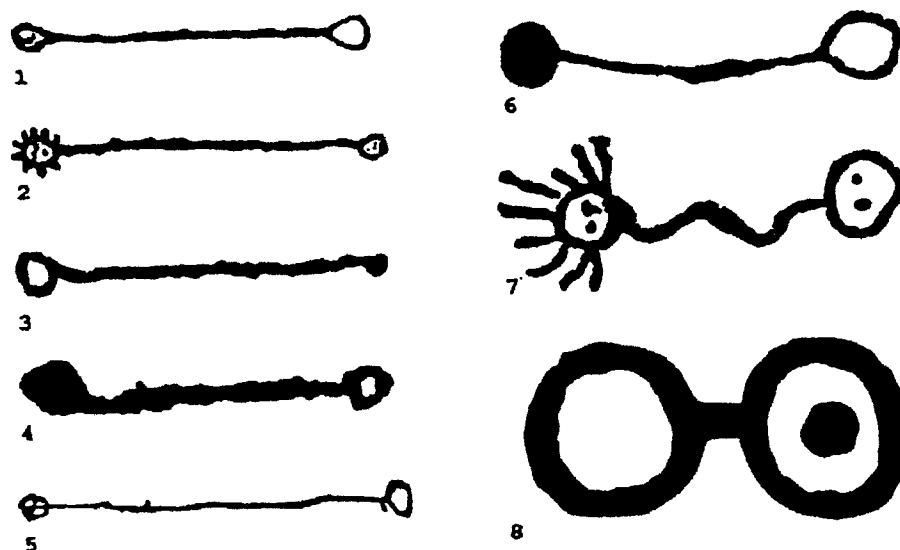


Figure 3 Asymmetrical spectacle-shaped signs (1-4) Saymali-Tash (from Martinov, Mariashev, Abetecov, 1992); (5-6) Caratau (from Cadyrbaev, Mariashev, 1977); (7) Inner Mongolia (from Gai Shanlin, 1989); (8) De Ambrosio cave, Matanzas, Cuba (from Nuñez Jimenez, 1975).

asymmetric signs are met. In such images one of the circles may have additional details, for example, crosses inside the circles or radiated rays (Figure 3). Being one of the universal symbols, spectacle-shaped images are known not only in Asia, but also in Australia and America.

The opposition of two circles becomes more obvious in the case with a rare variant of spectacle-shaped petroglyphs with anthropomorphic mask-faces depicted inside the circles (Figure 4). One such image comes from Inner Mongolia (Figure 4(1)) and two were found on Cuba (Figure 4(2-3)) (Larichev, 1985; Nuñez Jimenez, 1975; Guarch, 1987).

Analysing engravings from Inner Mongolia (probably dated to the II millennium BC) allows us to pay attention to the shape as a whole, as well as to the distinction between the right and left faces in detail (Figure 4). All the details of this image were obviously executed skilfully. The smaller left "face" by its external contour has a frame of triangular prominences, symbolizing solar flares. The eyes are executed as two concentric circles with radiating rays; the mouth is shown as if smiling.

Located from the right, the "face" was executed by the ancient artist as a dark, even sinister appearance, with inverted triangular prominences on the outline of the "face". Eyes are depicted by an asymmetric spectacle-like form, consisting of two concentric circles connected by a line. The right eye has a setting of radiated rays-eyelashes. The triangular nose and bared teeth bear a strong resemblance to the skull-shaped masks of Inner Mongolian rock art which most probably depict faces of dead people, more precisely their skulls. Skull-like features in combination

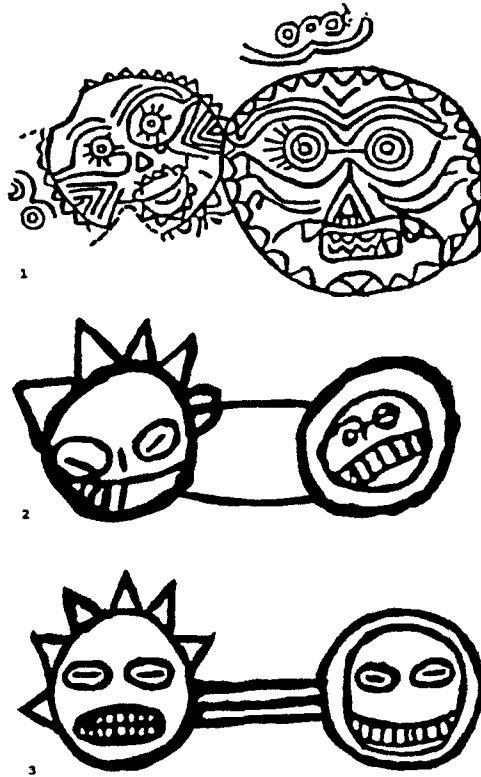


Figure 4 Spectacle-shaped images with “faces” (1) Inner Mongolia (from Larichev, 1985); (2) Las Mercedes cave, Sierra de Cubitas, Cuba (from Nuñez Jimenez, 1975); (3) Cuba (from Guarch, 1987).

with inverted triangular prominences-rays which shine by a deathly pale light only, cause this “face” to be associated with a lifeless face.

A pair of anthropomorphic faces from Cuba are asymmetrical as well (Figure 4(2-3)). The left faces in contrast to those which are located from the right, have 5 and 6 triangular prominences above their external contours. In both cases faces located from the right have double lines of their contours. This gives a basis to assume that faces located from the left are images of the sun, and those from the right depict the moon.

Localization of the sun sign on the left side, and the moon sign on the right side of a depiction is characteristic not only of these rock engravings, but also for simpler spectacle-shaped signs, and other pairs of images of heavenly bodies as well (Figure 3). The same is true for attributes of Siberian shamans and for sacrificial items from Tibet, though some exceptions exist (Figure 5).

It is known that images of heavenly bodies played a great role in decoration of shamans attributes. In the description of a breastplate of a Ket shaman one can

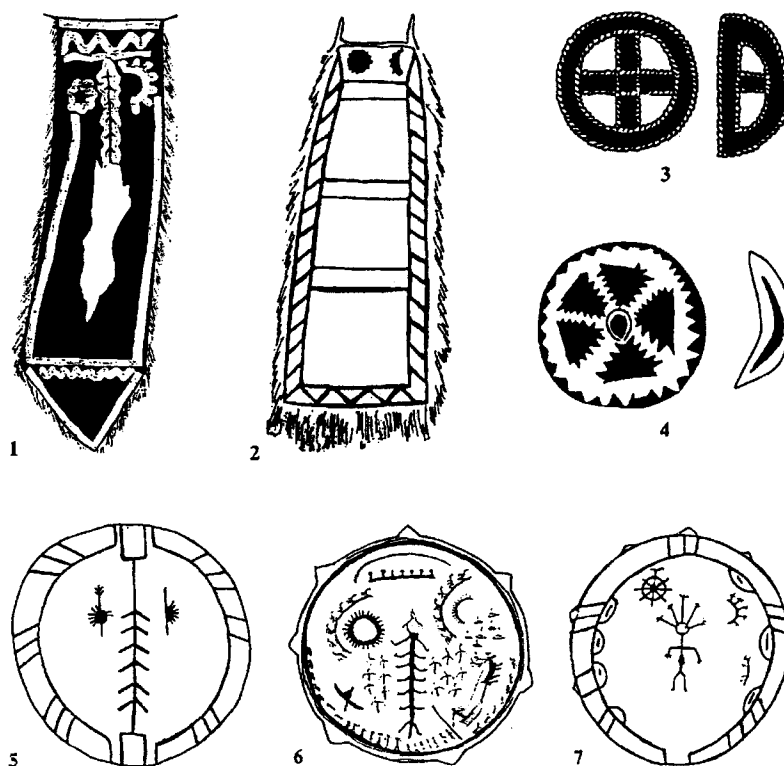


Figure 5 Depictions on shaman attributes. (1) breastplate, Kets; (2-3) breastplate and depiction of sun and moon on the breastplate, Selkups; (4) depiction on the cover of birch-bark box for shaman attributes, Selkups; (5-6) shaman's drum, Selkups; (7) depiction on shaman's drum, Kets (from Ivanov, 1954).

find not only the opposition of sun and moon, left and right, but the sacred meaning of the number 7 in mythology as well (Figure 5(1)). "On the top under the lines and zigzag, figures of sun (left) and moon (right) are situated, embroidered in white deer hair, applied in seven lines. The zigzags and frame of the breastplate consist of seven lines of hair plait. The number of sun and moon rays makes seven as well" (Ivanov, 1954).

It is possible to assume that in rock art the localization of sun and moon signs on the left and on the right is determined by the functional asymmetry of the brain hemispheres, inducing dual oppositions reflected in the images. In this case the opposition of left and right correspond to the graphically expressed opposition of sun and moon. They are as though united by the spectacle form sign which symbolized the unity of contrasts: sun-moon, alive-dead, day-night, light-darkness, hot-cold. These oppositions find personification in rock art images.

The opposition of sun and moon in mythology is always accompanied by the notion of their indissoluble connection, unity, and interdependence, which found

realization in subjects telling about their marriage, and frequently they are characterized by opposite qualities. In different parts of the world heavenly bodies are sometimes considered as brothers or as brother and sister. In some mythological systems one can find the idea that the sun and moon are the eyes of culture heroes. The same sign was used in Caribbean mobilar art; for example it depicts eyes on figurines of twins from Haiti. It should be mentioned that in mythology twins may personify heavenly bodies and in the course of time they may acquire solar and lunar traits (Zolotarev, 1964).

E. Taylor demonstrated how the Universe concept were transmitted by means of the sun metaphor, describing the sun as a part of another vast body. So Jupiter, the god, may be assimilated to a macrocosm in which his eyes are the sun and the moon. Macrobius described the sun as the "eye of Jupiter". In other sources the sun was compared with the "eye of the sky", with the eyes of primal gods of the pantheon. In Rigveda it was compared with the eye of Mithra, Varuna and Agni. Gesiod described it as the all-seeing eye of Zeus. The Germans considered it to be the eye of Votan, and the Vikings as the only eye of Odin (Taylor, 1989).

In the mythology of bon, Clumo is creator of the Universe. The sky emerged from her head, the moon appeared from the light of her right eye, and the sun appeared from the light of her left eye (Jucovskaja, 1977).

B. Piotrovsky demonstrated that for ancient Egyptians "eye", "sun", and "life" have been interconnected concepts. In the language, the term "right eye" had been used for the word "sun", and the words "left eye", "eastern eye" for the word "moon". I suppose that in described engravings and sacred items sun and moon signs depicting eyes should be considered as mirror images, that is the right and left eye are interchanged in position. Interconnection of the concepts "eye", "sun", and "moon" are preserved in the Chinese and the same is inherent in the Georgian language (Piotrovsky, 1931).

Coming back to the image from Inner Mongolia and trying to demonstrate how the "spectacle" symbol may depict astronomical objects we should pay special attention to the number of prominences on the left "face" (Figure 4(1)). All prominences were executed almost uniformly except the bottom pair under the chin of the "face" and those located near the left cheek. I suppose that the ancient artist tried to show in this way semantically important information.

Including additional semicircular prominences turned inside and outside the frame round the "moon-face", the total number of prominences is in complete agreement with the length of the lunar month counted in different ways.

One may count 27 prominences considering the double prominence near the left cheek as one. This number corresponds with a sidereal month. Considering the same prominence near the left cheek as two one would count 28. It is the length of a conventional lunar month, when the moon is visible in the sky. Counting an additional prominence under the chin and a semicircle near its left cheek one would find 29 and 30. They correspond to the synodic month counted in integers. So, based on the number of prominences round the frame of the "face", located on the right and symbolizing the moon, we may suppose that the Bronze Age population of this region used a lunar calendar.

We call particular attention to the eyes of this face, executed as an asymmetric spectacle-like form. The right eye has seven rays. One may suppose that this number was determined by the length of the four main lunar phases (in integers) without 1–2 days and nights before neomenia. Describing the breastplate of the Ket shaman we already paid attention to the mythological significance of the number seven. B. A. Frolov mentioned that besides the length of four moon phases the number seven expresses the number of visible stars of Ursa Major – a symbol of the north, as well as planets visible to the naked eye which were often deified by ancient peoples (Shumerians, Babylon, China, etc.) who devoted one day a week to each of them. Time counting by seven-day weeks and the important role of the number seven in mythology are connected with them (Frolov, 1971).

The rock carving from Inner Mongolia is of especial interest in the context of a mythological comparison of the Universe with Jupiter (the “spectacle” image as a whole). The sun and the moon are his eyes (left and right “faces”). We may suppose that this mythological subject is connected with the perfection of astronomical observations and the transition from an ancient lunar calendar to a lunar-solar-Jupiterian, based on the monthly revolution of the moon round the sun, the year by revolution of the Earth round the sun, and the period of about twelve years of Jupiter’s revolution round the sun (Tzibulsky, 1988). It gives reason to suppose the existence of a more sophisticated lunar-solar calendar in Bronze Age Inner Mongolia.

As already mentioned, the semantics of the spectacle-like forms is not limited only by their astronomical significance. They may be interpreted more widely as symbolizing a change of the quality, a transition from one condition into another. Reflecting dual oppositions of human conscious, such signs assumed social meaning. For example they may designate an initiation ceremony, assimilating changing of social status, death in one quality and revival in another, with transition from day to night, a change of sun and moon. According to the Australian aboriginal poet Kat Walker ingenious people use to designate the ceremony of initiations by a “spectacle” symbol. This sign expresses the changing of a boy’s social position, recognition of his full membership by their community. The circle of boys and the circle of youth are connected by a “sacral way”. Neophytes should pass this way during the ceremony of initiation (Kabo, 1988).

As well as mythology, the ancient rock art tradition may be characterized by different meanings of each sign and the possibility of reflecting the general through the particular, or the partial, to represent a macrocosm through sign-symbol or metaphor. Other signs of rock art connected with astronomical objects can be analysed in this way.

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