

Substances of the Ancient Cosmology

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Abstract. Influence of celestial phenomena on the ancient man is described. Processes of creation and development of ancient cosmological notions are considered. Main substances, elements of ancient cosmology are explained.

The surrounding world, its multi-complex and multi-coloured assumption demanded its understanding, comprehension and description. Each element of this complicated picture, each fragment of this endless mosaic have become construction blocks of the process of creation of cosmological notions of the ancient people. Instruments of this process, probably, were observations and permanently growing and strengthening memory. It was necessary only to see and remember. Further on, to these natural functions there will be added registration of what was seen, in the form of primitive pictures, pictograms, hieroglyphs, but this will be later, while in the beginning they only watched, remembered and regulated.

For the ancient people the world, undoubtedly, was complicated, changeable and often hostile. But having seen more attentively, it was possible to recognise its fundamental elements, forms, substances. For the ancient people the earthly firmness was a basis of life, here they were born and died, hunted, gathered fruit, communicated with one another. This firm surface, this endless world of forests and mountains seemed to be ancient immense space. But this firm infinity displayed its bounders in the form of the inaccessible horizon cutting the Earth and the sky surrounding the man always and from all sides. Just this flat firmness has become the first fundamental substance of cosmological system of the ancient people.

For them a flat surface of the Earth has become the centre of the universe, and the ancient people, correspondingly, were component parts of this centre. Many year long experience of contemplation of the surrounding world simply assured the ancient man in that the dark blue dome, the blue cupola, covering the flat Earth everywhere, is a second substance, the most important element of the universe. Now being transparently dark blue, blue, then infinitely black, this dome attracted special attention of the ancient people, as just inside it there appeared and disappeared tiny small, large and enormous sparkles and fires subject to unusually strict and incomprehensible order. And thus the sky became for the ancient people second substance of the universe. They lived on the flat Earth, and were covered above by mysterious azure of the sky. And to see, to be surprised or frightened, always and everywhere, in any point of the flat Earth a man had to look upwards. The flat Earth under the feet and the amazingly complicated sky above

became two basic substances, two media, and categories of cosmological systems of the ancient people.

Visible, but sometime inaccessible border of these media is the horizon, now marine, smoothly spherical, then mountainous, cut by complicated relief. For them, living thousands of years ago, this was evident assumption, here behind the horizon there ended the Earth and started the infinite sky. Here are two important substances of the ancient cosmology, two component elements of cosmological notions of our ancestors—the Earth and the sky. They were born, lived and died, brought up children, developed economy, created, fought, became friends and enemies on the Earth, and were surrounded by the infinite, deep, mysterious sky, regularly changing its colour from blue to black. These two media, firmness under the feet and air transparency above the head, became basic component elements of the world awareness of the ancient people. These elements, certainly, consisted of definite localities or sub-elements, for example, details of the landscape, forest areas, crooked rivers, or clouds smoothly moving in the heavenly ocean. However, these were only details, while main, determined by fundamental substances of the world outlook, world perception, was firm Earth and infinite air dome over it.

Simplicity of the nature is in its complexity. It was clear for the ancient people that the world is far more complicated, apprehension of it resulted from their many year long experience, passive contemplation, active watch and observance over the celestial bodies. They saw and attentively watched the rise and set of the bright celestial bodies: the Sun, the Moon, and the stars. They noticed and remembered recurrent travels in the heavenly blackness of wandering celestial bodies—the planets. They were amazed by beauty of thousands of the stars and pointed with surprise, or maybe with horror, to their endlessly recurring names.

Regular recurrence of the heavenly phenomena, strict accuracy of starry performances roused enormous interest in the celestial bodies, the wish to apprehend them, to approach them at least in mind. These multi-coloured discs and spots of various sizes and forms, strikingly bright or dying dim, became the objects of exclusive interest, inspiration and worship of the ancient men. There exists no doubt that multi-faced world of the celestial bodies—the stars and the planets—became the third important substance of the ancient cosmology. It was multi-complicated, diverse, mysterious substance, organically added into the world of the Earth and the sky creating, forming an organic picture of the infinite universe. Thus, three substances, three elements: the earth, the sky, the celestial bodies became three components of cosmological notions of the ancient people, supplementing, enriching, and complicating one another. An ancient man lived in the complex world, as the Earth—a firm basis of his being, was so enormous, now friendly, and then hostile; and the infinite sky turned to be filled with a multiplicity of incomprehensible details, and finally the world of the stars in the sky was so multi-faced and innumerable. A man still has to apprehend this world. Intangibly close Earth, fields of stars lacking colours were not understood, studied, described yet. Only general division into media or spheres, into substances or their manifestations dominated in consciousness of the ancient people. The world has still been waiting or had already waited for its description. The ability to remember what was seen; inclination to comparison, thinking with analogies assisted the ancient man in making the first steps along the long way to understand the universe.

He could compare what he saw on the Earth with the heavenly experience. Is not remote light on the horizon a star on the horizon, is not sea azure like the heavenly

veil, and is movement in the sea waters like crossing of the heavenly ocean. They also floated, these heavenly lights, floated in the black ocean of the universe. Burning heat of the nearby bonfire, its bright yellow-orange fire, is not it like the Sun in the sky?

There are a great number of examples of analogies, with only some specification: in the scale of unaware naivety, measured, let us say, from zero to hundred, an ancient man was in the very end at the mark of hundred. At the same time, a rhetoric question arises, where the contemporary mankind is now, at which mark of this scale. Nevertheless, naïve simplicity or simply primitiveness largely contributed to the development of the process of world awareness by an ancient man. Increasing life experience opened more and more potentials to the ancient people, including ability of orientation in space and time, evaluations of distances of closeness and remoteness of events and much more. Mad flame of the bonfire, big and bright, is a close fire, and small light at the horizon is the same bonfire, but far away. Here it is, Earth distance, method of its visual evaluation based on simple life experience. Using his comparative capacities, inclination to analogies an ancient man could conclude that the Sun was a source of light and warmth, it is a close bonfire, and the stars, twinkling in the remote blackness, are far-off bonfires. And one more step was made by the ancient men, to be more exact, a small step, but already to physics of phenomena. It is physical-chemical process we deal with both in the first and in the second cases. As we see, to general division into spheres and media there are added their characteristics, first of all, distances.

World of the stars steadily demanded its classification according to the traits and properties, complexities and simplicities of the phenomena. Here an ancient man faces the question, which would follow him persistently thousands of years after, the question—how to divide! And in this case the ancient people could rely only upon their experience of observation. Day by day, night by night they saw in the sky diversity of the world of celestial bodies, differing from one another by brightness, colour, form, size. In the heavenly depth of the night something blazed and faded, twinkled or piercingly shone, forming a complicated pattern or regular recurrence. There were too many bright and dim stars, let us say, of yellow and red colour. There were also many different discs, smoothly moving in the background of the stars, something was rounded, something prolonged, unexpectedly falling, crossing the dome of heaven. In a word, there were many colours, forms and moves. All this multiplicity of colour was subject to strictness of recurrence, appearance and disappearance, ascending and descending, change of form. Groups, classes should be separated from this complex diversity of colours and relevant places should be attached to them on the stairs of the heavenly order. Complexity of the task could have seen insurmountable for the ancient people, but most likely till the moment when the ancient people did not notice an essential fact. Along with the Sun and the Moon, bright representatives of the heavenly population, in regular performances there participated thousands of other celestial bodies, differing by their brightness!

Consequently, it was possible to divide the entire starry diversity into bright, average and dim celestial bodies. Further on, in each of these classes, there might be formed subclasses, dividing the stars and the planets into rather strict groups according to brightness. Using life experience, transferring it into world of the stars, the ancient people concluded: bright were closer, dim were farther. And here, a scale might be formed of heavenly distances or spheres, implying distancing of objects by their brightness. The brightest heavenly bodies, the closest, hung just directly over the head, average were farther, and the weakly twinkling stars were at big distances, as well as

the far-off bonfire at the horizon. Thus, brightness of the heavenly bodies could become a main instrument in formation of spatial cosmological notions of the ancient people. Bodies—bright and close, the stars—dim and remote—were also substances of the ancient cosmology and were subject to definite hierarchical distribution according to brightness.

Complex regular recurrence of heavenly events was still beyond the point of understanding over the horizon of awareness. But the stars and the planets have already occupied definite places and distances, designated for them by the mind of the ancient man. Thus, the universe could consist of the following substances: hard and flat Earth; the sky, covering the Earth; celestial bodies. In their turn, these celestial bodies were regulated according to their brightness—distances. The picture of starry distribution—heavenly order in the simplest, elementary manifestation—could have the character of distribution of celestial bodies into three main spheres (layers): 1) lower sphere—sphere of the Sun; 2) next sphere over it—sphere of the Moon; 3) next sphere over the Moon—sphere of the planets and the stars. Consequently, the nearest sphere was that of the Sun, where it existed lived, but the most remote was sphere of the twinkling stars, so feeble and inaccessible. Nearby bonfire—the bright Sun shedding light and warmth to the Earth; silvery light of the Moon, higher and more remote, reminded the ancient people to orientate in the enigma of the night; dim light of far-off stars and planets could only remind of complexity of the world and long way and weak bonfires at the horizon.

Any climatic phenomena: rain, snow, hurricane, mute movement of clouds only complicated the picture of the world setting for the ancient people new, difficult to settle, tasks: explanations and apprehension of what was seen. Substances of the ancient cosmology, cosmological categories of the ancient men's thinking have come to us through the millennia, in peculiar forms and types, have reached us on the bearers of relict information: in ancient pictures, ornaments, simplest articles, folklore (Simonia & Simonia 2005; Brandt et al. 2008).

Being transferred from generation to generation, acquiring details, being enriched with experience, they have reached us carrying inside themselves a kernel of relict information on cosmological ideas of the ancient people, on their world awareness and their own role in this infinite world of stars and planets. Development of religions of various forms and types played an important role in the cosmological ideas of the ancient people. In fact the ideas of the ancient people on the world and their religions were bound into a single context, complex cultural alloy of belief, knowledge and experience. Bright celestial bodies and twinkling stars, complexities of heavenly events have become symbols of different deities, which, from the viewpoint of the ancient men, ruled the destinies of individual persons and whole peoples. The ancient men worshipped their gods—mysterious celestial bodies: the Sun, the Moon, and the stars. They watched rise and set of the celestial bodies, and the inexorable accuracy and recurrence of the heavenly events witnessed force, power of these bright discs and dots. Cult ceremonies and observations over heavenly events were bound into a knot of everyday reality of special feasts, being packed into single religiously cosmological order of the ancient people (Simonia et al. 2009).

However, these have not yet been apprehended observations of the starry sky aiming at watching over the behaviour of the celestial bodies, but it was more the passive contemplation of the heavenly events by people, impressed and charmed by the sky, fearing the depth of vast universe. Awareness will come later, just in the moment, when the ancient people will understand that a strict order and recurrence of bright heavenly

events does not only witness force, but essential instrument, natural chance, which can be used for the well being of the mankind. Only one step was before this awareness, the step into the millennium. But as the Earth steadily encircles around the arc of its orbit year after year, century after century, the same with time—this alloy of fancy and reality inexorably moves in mysterious infinity. It is evident from this that this very moment has come; time has come of awareness and interaction. The first step of a man from the past into the future was made.

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