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THE DEVELOPMENT PALAEOASTRONOMY IN RUSSIA BEFORE THE CONFERENCE 'PALAEOASTRONOMY: SKY AND MANKIND' (1992–1997)

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Key points are presented from the round table discussion (RTD) at the conference '*Palaeoastronomy: Sky and Mankind*' concerning recent developments in the study of ancient astronomy in Russia. They are compared with early developments in Poland in early Cultural Astronomy.

KEY WORDS Cultural astronomy, archaeoastronomy, ethnoastronomy, palaeoastronomy, ancient astronomy

A dramatic development in what is now termed '*archaeoastronomy*' after Hawkins works of 1960–1963, has occurred in last two-to-three decades up to 1990 (*Time and Astronomy at the meeting of two worlds*. 1994, 9–10).

It appears that Gurshtein was the first Russian astronomer, who turned his attention to archaeoastronomy as a new field of research into the history of astronomy. He was initiator and editor of the first translations into Russian of some important books on archaeoastronomy (e.g. Hawkins, 1966; Wood, 1978).

But elements of archaeoastronomy existed in Russia separately. So, the first researchers on archaeoastronomy in Russia are sometimes considered to be the archeologist Larichev, the historian of culture, Frolov – who worked alone in inaccessible Siberia, and the archeologists Tchmychov, Dvoryanynov and Shilov in Ukraine (Shilov, 1996, 140). Shilov confirmed this opinion at RTD of the conference '*Palaeoastronomy: Sky and Mankind*' (1998, 303). This situation was similar to the early beginning of archaeoastronomy in Poland (see Ivaniszevsky, 1992, V)

What was the possibility of developing Russian archaeoastronomy in such conditions? Having about hundred active members, the Section for History of Astronomy (*SNA*) (chair – A.A. Gurshtein) of the Soviet National Association for History and Philosophy, Science and Technology (*SNAHPST*) ought to have been able to meet the challenge of some fundamental problems.

Firstly, it was the problem of producing the basic monograph '*The World History of Astronomy*' as it was claimed, particularly in April 1985 to a broadened assembly of *SHA* in Abastuman, Georgia.

Secondly it was the problem of the development of some archaeoastronomical works in Armenia (Zhitomirsky, 1986). The realization of this development may be observed in articles published in the journal '*Research in the History of Astronomy*' (*RHA*), which was the annual publication of *SHA* in that time. The issues of *RHA* in this period usually 'represent all traditional sections of the edition: the papers published herein cover a variety of historical problems of local and world astronomy which might interest both astronomers and a wide reading public of different educational level...', (*RHA*, 18, 1986, 12). The main tendency of this publication is 'to widen the circle of authors, attracting professional astronomers to participate'. Among the contributions have been articles on memorable dates in science, original research and discoveries (devoted as a rule of the history of modern astronomy), history of observatories and astronomical bodies, scientists and their work, memoirs and documentary materials.

Many authors made their debut on the pages of this publication, being not historians of science, but working very efficiently in various fields of modern astronomy, space research projects and other domains of science (*RHA*, 19, 1987, 12).

Evidently, being editor of the main Russian publication of the history of astronomy (*RHA*), Gurshtein considered archaeoastronomy as a new field of historical astronomical research (Gurshtein, 1983). However archaeoastronomy was not considered as a separate field of science either in official (Kuznetsov, 1989), or in astronomical circles (Gulyaeva, 1989). It seems that the process of organization of the new area of science was to be a short and lonely expansion of specialists of the science, each having their own methods. It was very effective for the history of the modern astronomy, but did not always further the methodology of this new field of the research.

The term *archaeoastronomy* ('astroarchaeology') was at first mentioned by Gurshtein (1983), as a name for a field in HA adjacent to general history, archaeology and ethnography. As used by Gurshtein, *archaeoastronomy* is equivalent to the term *palaeoastronomy*. However sometimes the term *ancient astronomy* was used in *RHA* instead of the term *palaeoastronomy* (see, e.g. *RHA* 21, 1989, 10–11). In this case the term *ancient astronomy* was used as a temporal term, together with the term *medieval astronomy*. After all, definitions of the ancient observations were sometimes very different.

Some definitions of archaeoastronomy were there in three of the five issues of *RHA* published between 1986 and 1990. Two works dealing with definitions of archaeoastronomy were presented in *RHA* in 1988.

The first concerns a monument of the Baltic Hill near Palanga, which was called as 'a Lithuanian Stonehenge of the Middle Ages' (14th–15th centuries, Zhulkus and Klimka, 1988).

The second work was devoted to the evidence of ancient astronomical knowledge (ca. 2600 BC) in the territory of Armenia and had the title 'Archaeoastronomy in Armenia' (Parsamian, 1988). Common to these cult sites is that they are the

archaeological objects which, with various means, marked astronomical directions in different periods from the third millennium BC down to the Middle Ages.

In *RHA* 21, 1989, there was published a paper of the broadened Assembly of *SHA* (Riga, February 1988), with the title 'Archeological relics as objects of paleoastronomy'. In this issue there was also the article which presented archaeoastronomy as a new interdisciplinary science studying the astronomical context of sites and astronomical motifs in art and architecture. Archaeoastronomy was considered also as a separate field of the history of astronomy having to do with many aspects of human culture.

Finally, in 1990, in *RHA* 22, there was published the paper delivered at the 1st National Symposium on Archaeoastronomy held in Bulgaria in 1988 (Ivanishevsky, 1990). It is here that the editors remark in regards to the title of this Symposium: 'Respective terms are not quite established yet, and it is deemed that paleoastronomy is more appropriate, rather than archaeoastronomy'. However, the theme of this paper was the definition of astronomy as a cultural system of great complexity. It was concluded that cultural astronomy may be considered to be a new field of science consisting of four sections:

Archaeoastronomy (A) – Astronomical knowledge as the relic of past culture, considered on the basis of archaeology;

Ethnoastronomy (E) – an investigation of the calendar systems and astronomy in current primitive societies or recent agrarian communities;

Socioastronomy (S) – search for the various calendars and astronomical ideas in urban societies;

History of Astronomy (HA) – research into the conception-sign systems and chronology of modern societies.

These considerations show that cultural astronomy (without HA) was not to be identified for study in *SHA* and the development of this new field of research entirely depended on the initiative of individual scholars. As in Poland, so also in Russia there was only one center where scholars interested in the history of astronomy (and archaeoastronomy in a rudimentary form, too) could present and discuss their research.

Being deeply interested in the development of all aspects of the history of astronomy, Gurshtein tried to overcome this difficult situation by gathering around himself, at the seminar of the Institute for the History of Science and Technology (IHST) some colleagues in the field of archaeoastronomy and ancient astronomy and encouraging them. Among his especially noteworthy stimulating achievements in the 1990s was the presentation of his hypothesis about the origin of the Zodiac constellations (Gurshtein, 1992). The main features of Gurshtein's hypothesis are the following:

1993: Presentations at several seminars in Moscow for both astronomers and scholars in the humanities, particularly the large interdisciplinary seminar (IS) which took place at the Institute of Oriental Study (IOS RAS) at the end of this year.

1994: Presentation of a keynote lecture on the first day of the two-day archaeoastronomy meeting (AM) in the Institute of Archaeology (IA RAS) on 18–19 May. As

a result of the lecture of IS, the publication of three papers (Gurshtein, Kyslasov (IA RAS), Raevsky (IOS RAS) accordingly) in the September issue of *Priroda* (popular journal for Russian science).

1995: Full publication of result (FPR) of IS discussion in the *Journal for Ancient History (JAH)* N 1.

Gurshtein suggested to the present author that he study ancient Chinese astronomy and thus he began this work in the Eurasian Astronomical Society in 1993 (being member of IHST seminar from 1984). This work was supported by EAAS in order that the present author could organize and participate in various meetings on archaeoastronomy and ancient astronomy. The first such meeting was AM in May 1994 (Kaurov and Potemkina, 1995). Then followed a presentation of the first result in ancient astronomy at the International Science Conference *Astrophysics and Cosmology after Gamov* in Odessa, 5–10 September 1994 (Kaurov 1996).

The next significant event was participation in FPR (Kaurov and Stepugina, 1995).

1996 became a principle year for the new development of Russian ancient astronomy.

In the spring of 1996 the first national one-day session on archaeoastronomy was organized by initiation of the present author as a part of an astronomical science memorial conference, *Our Galaxy* (28–30 March, Moscow, SAI MSU). Six of seven papers of this first national session on archaeoastronomy as a section of an astronomical conference have been completed and were included as a separate part of a special issue of the EAAS journal *Astronomical and Astrophysical Transactions*, see vol. 15, 1998, 291.

Just after this session a workshop was organized to consider many important problems in connection with the development of Russian archaeoastronomy.

Taking into account the suggestion of the present author it was decided in this workshop meeting to organize a general specialized interdisciplinary seminar (*GSIS*) on archaeoastronomy in Moscow as soon as possible and to confirm the plan of holding two consecutive conferences on archaeoastronomy in that year (the initiator – Potemkina, IA RAS) and in the next year (the suggestion of the present author). The definition of archaeoastronomy in connection with the current state of research in the field was also discussed. The participants of this meeting were N. Nicolov (Bulgaria), N.G. Bochkarev, V.N. Obridko, T.M. Potemkina, E.N. Kaurov (all from Moscow) and others.

On 25 April 1996, the first meeting of the *GSIS* at *SAI MGU* took place (chair E.N. Kaurov). It was symbolic that the first discussion was devoted to Gurshtein's hypothesis. This was a lecture given by D.S. Raevsky: 'Problems of the history of the Zodiac: cultural–historical reconstructions'.

On the 26 May 1996 the second seminar (*GSIS*) took place: V.A. Dergatchev (St. Peterburg), V.N. Obridko, Ju.N. Rivkin (Moscow). 'Archaeoastronomical aspects of the solar activity research'. The most remarkable part of this meeting was discussion between Dergatchev, Kyslasov (Moscow) and others on the very important problem concerning in which branch of knowledge – the natural sciences

or the humanities – the decisive arguments should be conducted about the truth of the archaeoastronomical hypothesis.

Some months later, 5–18 October 1996, the first national conference on archaeoastronomy was held at the Institute of Archaeology (IA) RAS. This conference was arranged mainly by archaeologists. However one astronomer, the present author, was on the organizing committee (OC) of this conference. Most of the topics of this conference were connected with archaeology. The basic intention of the conference initiators was to determine how many scholars in Russia were engaged in research in archaeoastronomy. This aim was considered essential by the organisers and determined the criteria for the selection of papers (*Archaeoastronomy: Problems of Becoming*. Foreword, 1996, 4). As a result there was considerable variety of the scientific level of the contributions, even among those papers on archaeoastronomy. This circumstance led to heated discussions, but the end result was positive.

The conference was successfully finished, but most serious researchers of IA RAS have ignored it. After the conference, unsuccessful attempts were made to publish the essentially archaeological papers of this conference, but only Potemkina and Yurevich (1998) appeared. Some various papers of this conference were collected by the present author and published in a special issue of *Astronomical and Astrophysical Transactions*. Vol. 17, issue 6, 1999.

The experience from organizing of this conference was used in the organization of the conference *Palaeoastronomy: Sky and Mankind* (19–24 November 1997, SAI MGU). The name was chosen to differentiate this more astronomical conference from the more archaeological one of 1996. Soon after the conference – the 96 Interdisciplinary Program and Coordination Commission (IPCC) was organized with its high science level and wide interdisciplinary structure. IPCC acted as the Organizing Committee with the right to select participant from any scientific discipline.

GISA worked in the interval between these two conferences helping to restore a high scientific level for a new conference (it organized the five meetings from November 1996 up to June 1997). Prominent scholars from both the natural sciences and the humanities were invited to this conference. The conference was supported by the SOROS foundation and the Federal program 'Astronomy'. The conference was held jointly with another institution (see the title of publication of this conference).

The topic selection 'Dragon and Zodiac' was published before the conference to continue the tradition that was began by Gurshtein in his hypothesis on the origin of the Zodiac. The abstracts of the conference have been published and, in 1998, the proceedings of the conference appeared with the articles mainly in Russian. The conference ended on the same high level as it begun.

Some conclusions follow from a short history of cultural astronomy (CA) in Russia. For example, today CA in Russia has not achieved the state of the separate science and does not as yet have an independent existence with its own paradigms.

At the end of the conference there was RTD. One of the important questions discussed there was the old problem of the definition of archaeoastronomy. A definition could be based on the existence of the traditions, works and organized structure of the field. As is clear today archaeoastronomy has only recently been established in Russia. Because of the absence of a basic background, the attempt to define such

terms seems to be unreal and each definition is determined accordingly to the needs of any scholar. There is also no common definition for the term *ancient astronomy*. Instead investigators include under this term a variety of studies. Taking into account the work that began with Gurshtein, this field was successfully developed in Russia. The origin of the constellations may be called more generally *ancient astronomy*.

Proposals on the further development of archaeoastronomy were also made at RTD. Some of these were directed towards raising the scientific level of archaeoastronomical investigations. One way to do this was to develop thematic works and meetings. This was partly realized in the session on *ancient astronomy*.

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