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Calendars, Symbols, and Orientations: Legacies of Astronomy in Culture

Proceedings of the 9th annual meeting of
the European Society for Astronomy in Culture (SEAC)
Stockholm, 27-30 August 2001



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Edited by Mary Blomberg, Peter E. Blomberg, and Göran Henriksson

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Some aspects of Lithuanian folk observations of the sun during the summer solstice period

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Abstract

Lithuanian folk traditions, as many others throughout the world, show that much attention was paid to the observation of the positions of the sun at the equinoxes and solstices. I shall concentrate here only on the beliefs and practices related to the summer solstice periods and, more especially, on the references to the 'dancing sun', the 'standing sun', and the 'returning sun' during the festival of Saint John and the calendar period related to it. These folk traditions are most certainly remnants of old-time practices of observations of the sunrise and sunset azimuths. I shall also present some comments on material collected from Lithuanian folklore from the 19th and 20th centuries.

Introduction

The festival *Rasa*, 'dews' or *Kupolės*, is a midsummer feast celebrated of old in Lithuania. At the time of the Christianisation of Lithuania, in the late 14th and 15th centuries, this pagan festival, which coincided more or less with the Christian feast of St. John the Baptist, survived as *Joninės*, 'John's feast'. This festival marks the celebration of the summer solstice. However the many traditions that have reached our time seem to pay little attention to the sun itself and concentrate rather on rituals related to fire, water, and flora, a fact often remarked upon by ethnographers and folklorists. For instance, in his survey of the Lithuanian customs of the *Joninės* festival, Balys notes that it is difficult to trace a clearer link with the cult of the sun and its returning. The idea of the floral spirit is more present (Balys 1993: 240-242).

The analysis of ethnoastronomical material collected about the *Joninės* festival, however, shows that the solar aspects of this calendar celebration must have been much more important in olden times. The calendar system based on the annual cycle of the sun's motion must necessarily have led to the recognition of the two most remarkable positions of the sun and the associated dates. These crucial positions, which are also easiest to mark on the horizon, occur at the summer and winter solstices. Defining the dates and the ritual marking of the dates must have been of great importance in the traditional Baltic and Old Lithuanian cultures, in which the organisation of daily life was carried out in compliance with the solar and lunar calendars. Recently, growing interest in archaeoastronomical and ethnoastronomical research indicates that in archaic cultures the sun, the moon, and other heavenly bodies were carefully observed. In Lithuania the hill known under its popular name of the Birutė' Mountain, in the town of Palanga near the Baltic Sea, has been considered as an ancient ritual area for astronomical observations. According to the archaeological investigations, in the 14th and 15th centuries there was a set of wooden poles serving these observations (Fig. 1).

The poles would have permitted the observations of the rising and setting azimuths of the sun and the moon (Lovčikas 1996: 128-129, figs. 7-9). Memory of such practices has survived in Lithuanian folklore until our day; for example the text of the following song proves that the sun was observed with the help of wooden poles:

On the sea on the wide blue
The Sun was 'poling'.
On two – three poles,
On nine arrows.

The visible northern and southern limits of the motion of the sun on the horizon and the way they were observed have left their marks in rituals and oral traditions, which they have strongly influenced. I shall present here some of these remnants of the *Rasa* festivities from the archaeoastronomical point of view.

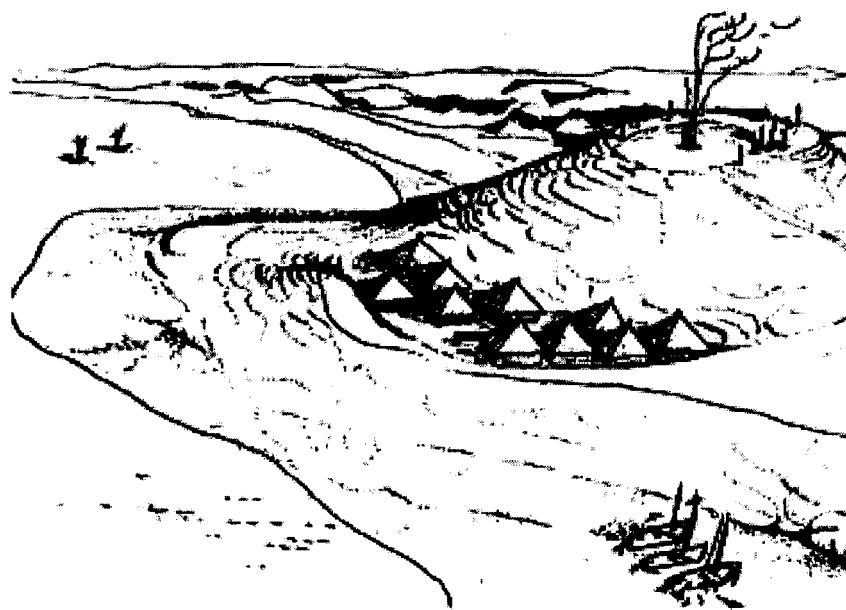


Fig.1. Reconstruction of a pole observatory on the Birutė Hill in the Palanga Sea. With permission.

The length and calendar location of the summer solstice festival

As one of the main goals of the astronomical observations was the determination of important calendar dates, let us look at the question of the date of the *Rasa* festival. According to Strykowski (1846: 146) these festivities started on 25 May and lasted until 25 June. Daukantas (1976: 541) holds that the *Rasa* festivities lasted 14 days. Until recently in neighbouring Latvia the rituals lasted for a whole week. But in other parts of Europe the dates were sometimes different. In Austria, for example, they are reported to have lasted for about 12 days (24 June-4 July). Nowadays in Lithuania and in other European countries among peasants and country folk these festivities usually take place between 24 and 29 June. We may suppose that the broad range of dates covering this festival could be related to the observations of the changes in the azimuths of the rising and setting sun, its slowing down, and its standstill at the solstices preceding its return in the other direction. The fact that country people were well aware of the directions of the rising and setting sun, not in the east and west, but rather far in the northeast and northwest on the summer solstice days, and that they observed them carefully is shown by the expressions used for these times of the year. The locations of midsummer sunrise and sunset are referred to as the “high east and the high west of the summer” and the directions of winter sunrise and sunset as the “low east and low west of the winter”. Some people still use specific places of the landscape to mark the location of the sun at its extreme. For example: “On the Seliutai (a landowner’s family name) oak, the sun rises and it sets on the Pamociškes slope in February; and when the days are getting longer, then March comes. When the day gets longer, we say that the sun rises on the Kalnas hill. Every hill or elevation of ours has a name” (5).¹ Here the familiar features of the local surroundings, such as a tree on the neighbour’s property, are used to mark a milestone in the calendar. If we accept a precision of about 1° for the measurements of the azimuth, the inhabitants must have considered that the midsummer sun had reached its extreme position and standstill between about 13 and 30 June, that is, a period of up to 18 days. The central date of this period corresponds to the astronomical solstice date. The word *solstice* is derived from the Latin *solstitium* meaning ‘stand-still of the sun’ and the same meaning is found in other languages, cf. the Russian term

¹ The numbers in parentheses refer to the names of persons in the list at the end of this paper.

letneje solncestojanije, 'the summer standing of the sun' or summer solstice. But in Lithuanian, the summer solstice is called *saulegriža*, 'turning round of the sun', where the process of the returning of the sun is emphasised rather than its standing still. We can easily accept that this 'turning round' means the changing of direction of the sun on the horizon around the northern limit of its azimuth, but it also indicates a turn in the length of days and nights. Until then the days were growing longer and the nights were becoming shorter, and after that time the proportions of the days and nights were reversed. We also find clear expressions of the observation of this standing and regression of the sun, e.g.: "The sun is standing for about two weeks on St. John's and afterwards the days begin to grow shorter until Christmas" (4). "When the day is long—the sun is standing at the same place for four days—and then the sun *springs* to its feet and the days grow shorter" (5). "The sun *stands in one place* from St. John's to St. Peter's and then the days get shorter". And they say about it that "the length of the day *jumps back*" (6) or, more often, "the sun *jumps back*".

It is possible that in the old times the summer solstice festival time was associated with the above-mentioned 'sun standing' period.² And the culmination of the feast might have been related to the end of the 'sun standing' period, when it is said that it 'jumps back', the so called 'turning back' of the sun. This supposition would allow us to explain why in historical sources the *Rasa* festival occupies such a long period around the solstice and also to understand the meaning of the expression 'dancing sun'.

Some possible explanations for the 'dancing sun'

It could be that such expressions as 'turning round of the sun', 'the sun jumps back', and 'the sun springs to its feet' first designated simply the movement of the sun on the horizon during the summer solstice period. But these words seem to describe the movements of a dancer: to spring to the feet, to jump back and forth, to turn around; and so, by contamination, people would have started simply to use the word 'dance' as well and to understand it with its strongest meaning. And then, as the phenomenon is common in folklore, these words would have soon been taken by simple minds to mean really that the sun was dancing. This belief that we can observe the sun dancing on the morning of midsummer night is common all over Europe; and in Lithuania, for instance, the dancing sun is called *Saulė šoka*: "The sun dances (*šoka*) on 29 June and jumps back (*atšoka*), and the days get shorter" (3). "On St. Peter's, the sun dances (*šoka*) and the days get shorter" (2). "On St. Peter's, the sun jumps back (*atšoka*). The sun jumps (*šokinėja*), the witches jump (*šokinėja*), and the sun. The length of the day jumps back (*atšoka*). From St. John's to St. Peter's it stops at the same place and after that the days get shorter" (6). "On St. Peter's day the sun dances (*šoka*) and shimmers. Perhaps then the sun jumps back (*atšoka*) and the days get shorter" (4). "On St. Peter's the sun jumps back (*atšoka*) and the days start visibly getting shorter. [...] The sun returns back (*grižta atgal*) and the days get shorter from St. Peter's..." (1). This association and confusion between turning and returning, jumping, springing, and dancing are thus frequent and well-documented. Yet most often it is simply said that the sun dances (*šoka*) at its rising. Sometimes it is also said that it dresses up or changes colours (*rėdosi*) (Balys 1993: 240-242). In popular thought 'the dance' of the sun is associated with the 'the jump', i.e., when the sun moves back and forth from its extreme rising and setting azimuth.

The motive of the dancing sun is broadly attested in Europe. Latvians, Byelorussians, Russians, French, Italians, Poles, Bulgarians,³ and Greeks also mention the dancing ('playing', 'rolling over', etc.) sun on the mornings of St. John and St. Peter. In most areas it is said that the sun is dancing on the morning of St. John and St. Peter, but other sources mention, curiously, the same dancing of the sun for Shrove Tuesday morning or Easter morning. Could this mean that there is another reason for this belief than the one proposed first—a contamination of the turning, returning, standing, and jumping sun at the

² For example the Zuñi in North America celebrated midwinter when the rays of the rising sun struck a certain point on a certain mountain. They described the solstice as the time when the sun set for four successive days at the same point (Thurston 1994: 10).

³ See information from the central Rhodopes in the article by Koleva in this volume.

solstices? It could be also that this dancing of the sun reflects an optical illusion due to the changing colours and azimuths of the sun on or near the horizon. The diffraction of light and the filter of atmospheric layers give a different glow to the morning sun, from dark red to pale white. This would explain the dressing up of the sun depending on different temperatures of the atmospheric layers. There is still another possibility: atmospheric refraction can cause us to see the sun above the horizon when, in fact, it is still under it. The phenomenon results from the fact that the rays of light follow the atmospheric layers of different temperatures and humidity, functioning as mirrors and carrying the light exactly in the same way as an optic fibre. Refraction always lifts up objects vertically. In northern latitudes, where the angle of the rising sun to the horizon is important, this can displace its azimuth in a significant manner and, if the changes in atmospheric conditions such as temperature and humidity of the air are important at the time of the solstice, the sun, instead of seeming to stand still for a few days, can give the illusion of stepping back and forth a few times before seeming more decidedly to move back. These effects of refraction could well explain why the phenomenon is so widely related to the feast of St. John and not other festive occasions such as Shrove Tuesday or Easter Sunday. So we can risk one more hypothesis: It is possible that at all larger festivities the habit was both to dance and to observe sunsets or sunrises, and again the proximity of these two activities would have directly led to an amalgam, and the 'dancing sun' would simply be the result of a linguistic contamination between these two activities.

There may be another possibility. The process of observing the rising and setting of the sun, whether or not for ritual reasons, implies staring at the sun for a long time. This produces a quasi-hypnotic state and subjective optical aberrations: the sun seems to tremble, jump from its place and turn around itself more and more quickly (the rotating suns of Vincent Van Gogh illustrate well this optical illusion).

All these accounts of the dancing sun at certain dates would simply mean that these were the only times of the year when the sun was stared at. They reflect only the exceptionality of these festivals and give us indications about the times in the year for the most prominent ancient pagan festivals.

At any rate, all these expressions show clearly that solar observations were practised of old in European pre-Christian traditions at certain crucial times of the year. They were carried further by the Christian cult at the same dates and very often at the same places. It is quite possible that the ritual pole of the *Rasa* festival, the *kupolė*,⁴ could be used for such observational purposes. The *kupolė* could have been used as a sort of gnomon, casting a shadow to mark a ritual (Figs. 2, 3).

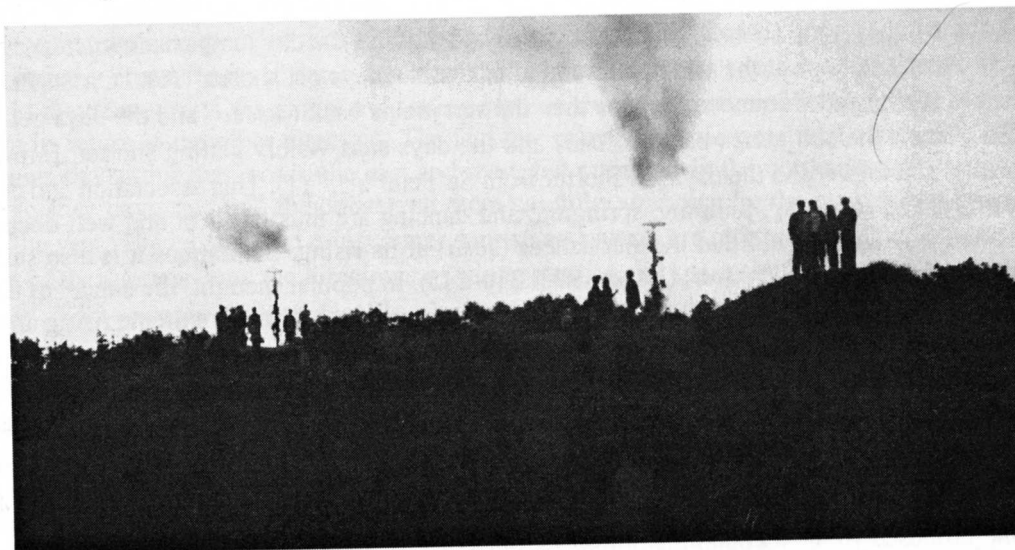


Fig. 2. Ritual poles of the *Rasa* festival. With permission.

⁴ *Kupolė*, or *kopolis*, is a pole covered with bark, decorated with flowers and greenery (like a Maypole), and placed in the ground at the site of the feast, usually on a hilltop.



Fig. 3. Ritual pole of the *Rasa* festival. With permission.

We know from modern ethnographical materials that the use of a gnomon was well understood in folk traditions. Sometimes a full description is given, e.g. in the following fragment: "When the sun moved furthest north, the day would be longest. Then it is St. John's." The longest day would be determined in the following way. "Take some tree in the middle of the fields or something alone that is not hampered by shadows. One day the length of the shadow of the tree in the sunset would be marked, the end of the shadow marked by a pole. On the next evening the procedure would be repeated. Not only the length of the shadow would be marked, but also the angle by which it falls from the tree. When the shadow of the tree reached the furthest point [to the south], it was considered to be the longest day" (5).

We can find in older Lithuanian ethnographical material the clear mention of the religious ritual of tree gnomons raised up only on certain specific occasions. On Shrove Tuesday there was the tradition of fixing a wheel on a high pole symbolising the sun of the St. John celebration *Joninės*. According to the length of the shadow that was cast by the pole, people counted time and determined the date for the festival of the longest day (Kudirka 1992: 30).

Other indirect attestations of the fact that the observations of the sun were carried out are the following: "Only those who sleep not on St. John's night can see the dancing and dressing sun". And it is said that this observation should be done through a silk scarf (Balys 1993: 241), through a smoked glass, or through a slot in the bathhouse (Balys 1935-1940). The last condition of observing sunrise from the bathhouse is most interesting. It recalls the technique of the camera obscura to mark the azimuth or declination of the sun known from other archaeoastronomical and ethnoastronomical sources. A calendar date is marked according to the short time that a sunbeam illuminates a special mark through a small hole in a dark place, a temple, or a cave. But we may have here a further indication of the sanctity of this period of the year in the pre-Christian Lithuanian culture, as the steam bath was at that time a ritual place used for purification before all great events of private and public life at all important times of the year. It must then be a pagan remnant. We know also that the Christian church fought against the custom of steam baths in Lithuania until as late as the 16th century.

Ethnographer J. Petruelis has recorded very interesting information concerning solstitial observation in Lithuania (Trinkūnas 2000: 72). A certain village craftsman, Butvila by name, would cease work and disappear for two weeks around the time of the summer solstice. Upon his return he would say, "A difficult year it would be for me if I were not to observe the return of the sun, as in the summer she presents herself." The warmest time of the year is certainly favourable to isolation and, if the Christian

patron of this time is Saint John the hermit, the folk traditions could have accepted it the more easily since everywhere it was the time of spending time in complete loneliness or with only sheep and cattle.

It is thought that observation of the heavenly bodies was one of the most important occupations of the wizards and priests in pre-Christian times. When Christianity became firmly established, the observation of the heavenly bodies and certain other ancient rituals were kept and performed only by senior members of the family. But when the observation practices were destroyed by the exclusive use of the computus for the establishment of feast dates, the astronomical traditions based on direct observation were shattered first. The flora and fauna motives survived for a longer time because they were less obviously bound to pagan religious beliefs; they were also more practical and more comprehensible to the people.

Conclusions

- 1) Lithuanian folklore and ethnographical material have retained remnants of the practices of observation of the sun in order to define calendar dates.
- 2) The length of the Lithuanian summer solstice festival was related to the observation of the so-called 'stopping' of the sun and the slow decrease and increase of the progression of its azimuths in the morning and evening.
- 3) The expression 'dancing Sun' must have its origin in these observational practices of the sun at the horizon.

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Persons providing information

- 1) *Balevičiūtė Jadvyga*, born 1925, Balkasodis village, Miroslavo district, Alytus region. Written down by V. Vaitkevičius, 1993.
- 2) *Baulienė Ona*, born 1919, Žiežmariai village, Kaišiadorys region. Written down by A. Morkūnaitė, 1994.
- 3) *Maskeliūnas Liudas*, born 1907, Lapšiai village, Seirijai district, Lazdijai region. Written down by A. Vaicekauskas, 1984.
- 4) *Mikalauskaitė Salomeja*, born 1924, Griškabūdis village, Griškabūdis district, Šakiai region. Written down by E. Žiemys, 1992.
- 5) *Vilkevičius Juozas*, born 1909, Paluobiai village, Griškabūdis district, Šakiai region. Written down by J. Šorys, 1992.
- 6) *Žakauskas Bronius*, born 1912, Padumbliai village, Kapčiamiestis district, Lazdijai region. Written down by A. Morkūnaitė, 1992.

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