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OVID, FASTI, SUN AND STARS

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Abstract. The paper discusses the Ovid's poem Fasti and its translation in Serbian language, with special emphasis on the interpretation of astronomical content and motives and difficulties of translators.

At the beginning of January 2017, the translation on Serbian, by the authors of this contribution, of Ovid's book "Fasti", has been published by the Society for Archaeoastronomical and Ethnoastronomical Research "Vlašići". "Fasti" of Publius Ovid Naso has not been translated into Serbian so far, but the english translation was widely available on the Internet. However, one fact has to be taken into account: reading in a foreign language, which the reader knows well, will be understandable. However, the flow of free associations will not be as fast as if it was read in its mother tongue and it will not have a full emotional response to the information it receives. This is well known to psychologists and psychiatrists, neurologists and lawyers: the polygraphic examination can not be performed in a foreign language, the apparatus will not be able to record those fine variations of the emotional response. If it is read in mother tongue, it is easier to understand the different layers of the message in the text.

On the other hand, each translation necessarily contains a personal note, since the translator gives his personal view of the text. Therefore, translations and translators should be more.

This translation was made primarily for personal curiosity of translators. Members of the Society for Archaeoastronomical and Ethnoastronomical Research "Vlaii" were naturally interested in the matter, given in this Ovid's work: this is the religious calendar of ancient Rome, based on the astronomically significant risings and settings of the Sun and stars, during the morning or evening dusk, just before the sunrise or immediately after the sunset. Ovid gives over forty holiday dates, firmly connected to certain astronomical events. In such a way, he offered significant material for exploring the astronomical knowledge available to the Romans in the time between old and new era. Consequently, one, who has to translate this text, must understand the astronomical data in it and must be able to explain them to the reader.

This is not the only difficulty. Ovid connects Roman holidays for the corresponding deities and myths, and often states rituals that should be performed on a particular holiday. His Roman readers were much better informed in their own religion than those of today, who often need additional information and explanations concerning the mythology and religion of ancient Rome.

Finally, on certain holidays significant historical events have been happened, which the poet also mentions in his work, which obligates the translators to remind the reader of the aforementioned historical events, and about the structure of the Roman state, the battles, the significant buildings ... It is completely clear that the translation of one such work requires an interdisciplinary approach. This translation, presented to the readership, for the first time in the Serbian language, was created as a comparative one, from the English language, with the use of the translation of James George Fraser, with a strict control of the text using the Latin transcript from the 10th century (which used Frejzer as well). It should be noted that the original of this Ovid's work is not preserved, but only a few later transcriptions, which differ in details.

The poem "Fasti" of Publius Ovid Naso presents an interesting source of information on the celestial phenomena, from the time of the transition between old and new era, and although his stellar calendar is not accurate today, since due to the precession celestial events mentioned by the poet are happening now almost a month later, this not diminishs the importance of this. On the contrary, it offers precious informations about astronomical knowledge, which was available to Romans on the transition between the old and new era and the ways in which that knowledge was understood.

Ovid's work testifies of the importance that the observation of heaven had for the ancient Romans. It is seen from the text that he attended many rituals, got into direct contact with the highest priesthood, and had information about the events in heaven, at least while writing a part of "Fasti" that is available to us. It only covers the first six months of the Roman solar year. Until today it is unknown whether the other part, for the remaining six months, has existed or not.

Ovid was born on March 20, 47 B.C. in the Sulmo (today's Sulmona), a city east of Rome, in a rich, educated and influential family, which has allowed him a great education and a good social position. In his youth he was engaged in law and has participated in the work of important legal institutions, as decemvir. Because of his love for poetry, he had neglected his profession early. He is known to have traveled to Greece, Thrace and Asia Minor, visiting Troy, a city for which the Romans link their origin. He had a high status of a "state" poet and was famous in his time. By the order of Augustus, the eighth year of the new era, in his 55th year, he was banished to the Roman province on the Black Sea, and the reason for this persecution to date is not quite known. Neither the Senate nor any other state body has given any act, to approve or justify his persecution. In all likelihood, there was some personal reason for Augustus angry. He never returned from exile and died in Tomis, 17th or 18th year of the new era and it is believed that he have been buried somewhere near this town. His work "Fasti", which he surely partially changed during his exile, was published posthumously, though never completed. Nowadays it is considered that, since in the exile, for Ovid were no longer available Roman libraries or contacts with the highest priesthood, he was without access to sources of information, needed to complete his work. It consists of a short introduction, in which is the dedication to

Germanicus, followed by six books, each dedicated to one month of the Roman year. Only six months are covered, from January to June. Poet's idea to include all year with 12 books, was unrealizable.

1. OVID'S ASTRONOMICAL GUIDELINES

Ovid's work Fasti has long time inspired not only fans of classical literature, but also astronomers, historians of religion, mythology, mathematicians and those who investigate chronology. The poet in this work gives over 40 dates, firmly associated with certain astronomical events. Astronomers and mathematicians first assumed the need for an exact check of the calendar and astronomical phenomena reported by the poet.

The first check was made by German mathematician and chronologist Ideler (Christian Ludwig Ideler, 1766-1846), who lived and worked in the eighteenth and nineteenth centuries. According to his calculations, Ovid made many mistakes,why his credibility regarding astronomical events is doubtful. Ideler considered that the poet occasionally manipulated with the dates of astronomical events, since the aesthetic and literary value was far more important to him.

The work of Ideler discouraged further research and brought a flurry of criticism of this work of Ovid. Over the next hundred years, there were few researchers willing to invest a tremendous effort and make up their own calculations for the astronomical events mentioned in the book and to correct the results to the epoch when the poet lived. This is quite understandable knowing the difficulties faced by those who want to make such calculations.

There are no precise formulas for the calculation of the date of a star's heliacal rise: the exact position of the point of observation and the characteristics of the horizon of that place must be taken into account, as well as the value of atmospheric refraction on it, in order to obtain the result for the present time. In addition, it is very important whether the observed star is on the northern or southern celestial hemisphere and how far away from the ecliptic. Very important are also brightness and apparent magnitude. The brighter stars are more easily detected in the morning dusk, so their appearance will be noticed earlier, while the weaker stars must be further away from the sun and the horizon in order to be noticed. One should also take into account the season of the year when a star is observed, because the night is shorter in the summer and in the winter is longer. In addition, atmospheric conditions (artificial illumination, dust, smoke and water vapor in the air) can make the less brightg stars invisible. As for the heliacal rise of the whole constellations, it can not be determined in one day, as it lasts for several days (and up to 30 for a larger constellation such as, for example, Pegasus), as it depends directly on the surface on the heavens the constellation covers. Finally, it is necessary to correct all the calculations for about 2000 years back, because of the precession of the equinoxes due to the periodic change in the direction of the Earth's axis, and it should be taken into account its inclination, which changes slightly over time, but the results of these changes are not negligible. It should also be noted that Ovid's Rome had 700,000 inhabitants, that all households had a fireplace, as well as every temple, thermae, blacksmith or pottery workshop, where torches and lamps smoked at night, and that there had to be significant amount of smoke in the lowest layers of the atmosphere, so that the visibility of the sky could

not be ideal, especially in the situations when there is no wind. Besides all this, the atmospheric refraction at the horizon 2000 years ago remains unknown.

With the advent of computer era, things have changed significantly. Now exist powerful astronomical softwares, which include calculations for the time period from 3000 years B.C. up to 6000 years A.D., for any place of observation on Earth. In this book, Red Shift 7 and the third version of PLSV (Planetary, Lunar and Stellar Visibility) were used. Both software proved to be very useful, although their authors warn that minor deviations from the results are possible, due to the many variables.

At the time when Ovid lived and worked, those who watched the sky did not have practically any optical aids, but were relied on their good vision and experience, as well as on the notes of people who did it before them. When certain "wandering" in the first fifty years since the introduction of the Julian calendar is added, for example that the inserted day was added every third and not the fourth year, and that the priests had the right to introduce an additional, intercalary day, we understand that Ovid's dates are not quite fixed, like those we are using now.

Therefore, we consider that we do not have the right to seek scientific rigor in this work, in the present sense of the word. We believe that Ovid, despite some inaccuracies, performed his task the best he could at that moment. The poet himself praises those who observe the sky, but he does not say that he is himself one of those devotees. Therefore, we rightly assume that most of his descriptions were based on the testimonies and records stored in libraries. According to research by Matthew Robinson (Robinson M, 2005), some Ovidi's "mistakes" are repeated in other ancient Roman sources (Pliny, Columela). We can not even think about the mistakes that could have been made in rewriting the work (since the original was not preserved).

May be that an astronomer from Alexandria would have done more precisely the astronomical part of this work. But then the work would surely have lost its literary value. We can only regret that the poet could not finish what he started. Moreover, how many poets, respected in his midst as much as Ovid was in Rome, would be able to write a work similar to this?

Archeoastronomy and astronomy in culture are relatively young sciences, which experience their rise in the last thirty years. The translation on Serbian of Ovid's work "Fasti", enabled new, small insights into astronomical knowledge and ways to acquire and preserve these knowledges in ancient Rome. Of course, this is not the end. Research will continue, we hope, not only arheoastronomical. Some other researchers from various scientific disciplines will follow their free associations while reading it.

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