

**ASTRONOMY IN SERBIAN NEWSPAPERS
AND LITERATURE IN THE 18TH AND IN THE BEGINNING
OF THE 19TH CENTURY
(Including the year 1836)**

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ABSTRACT. One thinks that in the 18th and in the beginning of the 19th centuries there was no much interest in Astronomy among the Serbs. It is true that we did not have many people busy in this field of science, but, leafing through the material published during that period we must conclude that there were many information on that subject. I do not claim that my paper encloses all articles, notes etc. but it should give a clear insight to the reader.

1. INTRODUCTION

Let us say some words on the newspapers (magazines) published in Serbian, in those times, which were at my disposition in the Library of Matica Srpska in Novi Sad, Yugoslavia.

SERBSKIJA NOVINY [1] has been published in Vienna from 14.03.1791 to 31.12.1792. It started as SERBSKIJA POVSEDNEVNIJA NOVINY until 15.05.1791. The editor was Markides Puljo. This was the first newspaper in common language, spoken by the Serbian people, but printed using the Old Church Slavic letters. It had an informative purpose and was edited like contemporary Austrian newspapers. It was subject to a severe governmental censure. It ceased to appear because of the lack of subscribers.

The successor is SLAVENO-SERBSKIJA VJEDOMOSTI [2], which appeared again in Vienna twice weekly from 28.12.1792 to 22.12.1794, edited by Stefan Novakovic. On 03.08.1792 a demonstrative number has been published. Again the lack of subscribers was the cause of coming up stopping.

NOVINE SERBSKE, IZ CARSTVUJUSCEGO GRADA VIENE [3], started on the 1.08.1813 as a diary. In the year 1816 it changes the name in NOVINE SRBSKE U VIENI. From 1817 they appear three times a week. The founders and first editors were Dimitrije Davidovic and Dimitrije Frusic. Beginning in the year 1816 Davidovic remained the only editor. It contained short political notes from Austria and other countries, cultural and literal commentaries. It has been written in Serbian middle-class alphabet using the language near to the one which common people spoke.

SRPSKE NOVINE [4] was the first journal which appeared in Serbia of Knjaz Milos Obrenovic in 1834 in Kragujevac starting under the title NOVINE SRBSKE. The first editor was Dimitrije Davidovic. Later it was transferred to Beograd and it was published under the title NOVINE SRPSKE until 15.02.1919. That was the official organ of the Serbian government in which official notices, laws, decrees as well as literary articles, and news appeared.

Teodor Pavlovic was the editor of the 'SERBSKIJ NARODNYJ LIST' [5]. His motto, printed under the heading, was "Let the high wisdom and sage rest in the sky. To report well and useful that's the effort of myself". He started his journal in the year 1835. It has been published until 1847 in Buda. To my great sorrow the year 1836 is missing in Matica Srpska.

At that time the most Serbs were living either in the Turkish or in the Austro-Hungarian Empire. Neither the Turkish nor the Austro-Hungarian government wanted the Serbs to become enlightened so they made many obstacles to the opening of schools and editing journals, newspapers or printing books in

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Serbian language. If they gave permissions, after a long hesitation, they were happy if there appeared something that stopped the whole action. Therefore there are large gaps in the Serbian journalism and culture.

In my opinion the chronological order will be the most convenient and it will be observed the following.

2. COMETS

Bode denied that he made a calculation that in the year 1821 a comet will destroy the earth. "I tried to prove that nobody has the right to be superstitiously afraid of a comet" said the famous astronomer [6].

In the same number there is a long article on comets, written perhaps, by the editor D. Davidovic himself. The author gives exact scientific facts on them. It is interesting that he describes that one which appeared five times before, whose period is 76 years, but, without naming it as "Halley's" [7].

Therefore the statement in [8] is not valid any more! The subject spoken about was the Halley's comet, in a Serbian journal, nineteen years before its appearance. And this was not the only time as we will see afterwards.

"On the 1st November {all dates are according to the Julian calendar, if there is no other date; if there is, the first is Julian and the second the Gregorian date} at 7 o'clock, in the evening, Doct. Olbers saw in Bremen a tailed star {often used expression for a comet among Serbs of that time}, small but enough shiny, and in the center more bright; but, the nucleus and the tail he could not see clearly ... It has been moving to the east and to the south." [9]

"Mr. Ponce, astronomer, discovered on the 26th December of the last year a new tailed star in the constellation Swan. In the first days of January it was like a nebulous star, without any distinct shape and of a poor shine. On the 18th of the same month it appeared larger and brighter; the nucleus appeared, but, with no tail yet." [10]. This one may be the 1817b.

The chronologically next notice may refer to the previously mentioned comet [11].

Canon Stark in Augsburg discovered on the 4th March at half past two o'clock, in the morning, a comet of the 5th magnitude in the constellation Fox. Exact relative coordinates in right ascension and in declination have been given [12].

In the column "Astronomical Notes" under the title "Newly discovered tailed star" the author describes, in full details, the comet 1818c which appeared in Pegasus, giving its movement among stars between the 1st and 13th January [13].

Again in the same column under the title "One tailed star more" three ones have been described: a) that one discovered in Pegasus by Mr. Ponce {we discussed it previously}; b) that one discovered by the same astronomer on the 29th November in the constellation Serpent and c) that one which has been discovered by Bessel, in Koenigsberg, on the 22nd December, all in the year 1818 [14].

"One work of M.C.T. Damoisean, that officer's work crowned with glory, sais that the tailed star, seen in the year 1759, will come back again in the month of September 1835, and then will be seen. Around the year 1880 those will see, who will then be alive, a great one and shiny star in the constellation Cassiopeia, that one which may be seen each 307 or 309 years. Some learned men said that this star was that one sages have seen, going to Betlehem." [15] Once more the Halley's comet has been mentioned among Serbs, before its appearance in the year 1835.

"On Sunday the 15th June 1819, at 10 o'clock p.m. there was a tailed star in north-west (NW), approximately 8 degrees above the horizon. ... At 2 o'clock a.m. it was clearly visible to the NNE. Its nucleus was as planet Jupiter large, and its tail was pointed upwards, bent to E. ..." [16]

"Superstitious meditations on a tailed star which is now visible" is the title of an article [17] in which the author mentions again the Halley's comet and its appearances in the past, its period of 76 years and that there is no fear of the influences of comets on Earth's movements and terrestrial phenomena. The conclusion is that they are celestial bodies like Earth.

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A short notice [18] informs the readers that the comet which has been visible at the time of Christ's birth will appear again in the year 1835. One more hint concerning Halley's comet.

The editor reports that in Constantinopol the Turks saw a comet [19].

In the column "Feuilleton edifying and amusing", under the title "Change in celestial event forecast", it has been written that the Halley's comet, which has been expected in August 1835, according to astronomer Herschel, will not appear at all because of its change of direction [20].

Nearly the whole page has been dedicated, once more to the Halley's comet [21]. It is a thorough report on its characteristics, first observation on the 25th August 1835, it has been for the first time seen on the 5th August 1835, facts on its orbit, moment of passing the perihelion, its distances in different moments, duration of its invisibility near to the Sun, its reappearance in the morning, and its loss in the deep Universe. The return has been announced for the year 1911

For the completeness sake we must mention the article on comets [22] whose title [8] we criticized before. After a thorough analysis of historical and mechanical facts on these celestial bodies, the author pays his attention to the Halley's one. He predicts that it will be visible on the 4th November 1835 at 5 o'clock p.m. and that it will disappear on the 12th April 1836. The elements of its path are given also. With two instructive figures : outlooks of previously visible comets and the elliptical path with its elements.

We must remark that the title of the paper [8] should be changed because we cited six times above, long or short, information about Halley's comet before its reappearance in 1835 in Serbian journals. I am not sure that there is any left overlooked.

3. OTHER ASTRONOMICAL PHENOMENA AND DESCRIPTIONS

On the 24th August / 5th September in the Ajane county (France), from the north, at 11 o'clock a.m., appeared a high and dark small cloud on the quiet and the clear sky. Its movement became faster and faster and it started to turn around itself with a little thundering, and at once it exploded with a loud noise.. Then it disappeared and a rain of stones started to fall; some of the stones were so great that they made holes in the ground [23]. A nice description of a bolid.

"On the 12th April at 9 o'clock p.m. astronomer David in Prague observed two lights near the Moon, one to the west and the second to the east. Both lights casted rays like the tails of the tailed stars. The whole phenomenon lasted to 50 minutes" [24] A rare note on a parselena or a mockmoon.

The column "Feuilleton" under the title "Scientific observations" [25] tries to explain the causes of a very hot summer as such one in the year 1811. The hypothetical influence of the comet of the same year, had neither natural nor physical base, according to the author. False are as well as the fears of Earth's catastrophe and destruction as a result of the same cause. The influence of the Sun's heat has been discussed and the contributions of sunspots as well. In the conclusion the cooling of the Earth has been rejected as a reason of cold and rainy summers in the following years.

Astronomical proofs that the Earth is round are given, among others, in [26]. Changes in the star positions and eclipses of the Moon are used in the same sense.

A drawing of the Moon with a thorough description of details on its surface with names of the main craters and seas has been shown in [27]. There are interpreted: the Moon's path through space, his other motions, with dimensions, durations of its different revolutions, its size, the lack of water and atmosphere. The influence in the appearance of tides has been confirmed, but the change in weather on Earth has been denied. The fluctuations in the healthy and sick human body has not been confirmed.

After a historical introduction, the author says that the proposition that the stars are fixed in space is false. It is impossible to count all celestial bodies. The improvement of telescopes shows that the former solitary stars are in most cases multiple [28].

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According to Berliner Zeitung, Herschel junior has observed the Moon, using the Hydrooxigen-microscope (???). Before its official paper appears, Dr. Grant describes the results: there are three big oceans, innumerable seas, woods with flowers and green leaves, animals etc. on the Moon. It seems that the contributor of this article did not believe that this may be true, so, he cited the source, so as to be safe [29].

“We wish to point attention of our respected readers to the fact that tomorrow, on the 3rd May, in the afternoon, it will be an aclipse of the Sun, which will be visible in the whole of Europe, Asia and Africa in the case the weather is agreable. The beginning will be in our neighbourhood around 7 ½ o'clock, the middle around 9 o'clock, and the end around 10 ½ o'clock, by turkish time [30].

To have a better understanding of the phenomenon we will cite the data on the same eclipse ,but, the time will be expressed in the customary way: “The Sun will be eclipsed on the 3rd May at half past two in the afternoon: it will be visible in Europe, Asia and Africa; the beginning will be at 3 o'clock, the middle at 4 o'clock and 15 minutes, and the end at 5 o'clock 30 minutes, the size will be 9'22''. [31].

The eclipses of the Sun and of the Moon have been interpreted, with two detailed figures: one giving the positions of the Sun, Earth and Moon in space, and the second describing the phases. The occasions were: 1) the eclipse of the Moon in December 1823, and 2) the eclipse of the Sun on the 3rd/15th May 1836 [32].

4. NEW BOOKS ANNOUNCEMENT

In the appendix to the Novine Srbske in the year 1814 [33] one of the coeditors, Dimitrije Davidovic, called on the readers to subscribe to the first two volume of his “Sum of Sciences necessary to a man”. The first was to contain: I. Physical Geography, II. Physics, III. Natural History, and IV. ASTRONOMY {my underlining}, the science on the size, characteristics and movement of celestial bodies. Both volumes ware, according to the system of Mr. Funk, from his and from other German writers works, to be translated. In them the reader was to find the nucleus and all that is in each science the main and essential part. ... especial benefit was to be enjoyed in private (as well as in scholar public) education. To each volume was to be added, at the end, a dictionary with Serbian, German and Latin words, all appearing words in that volume used, but to the Nation poorly known, as well as newly made words, was to be interpreted and explained”.

Because of today unknown reasons this very useful edition has not been published.

The second edition of the booklet “Catechism der neuesten Erdbeschreibung” {“Catechism of the newest Geography} by Franz Reili, has been announced to appear by the end of the year. It was to be of great benefit to the teachers as well as to the pupils because it was to be written as a dialogue between two friends. The individuals could use it as well as those not needing a mentor. The first edition appeared in 1804 and was quickly sold. Its translation into Serbian has been recommended [34].

Pantelejmon Mihajlovic, teacher in Battonya {now in Hungary, in Bekes district} announced the beginning of the subscription to two books by him [35]. Only one “Shortest Geography” is from interest to us. Two more announcements appeared later [36], [37]. These texts are quite the same but have been altered slightly in comparison to the first one. There is one note more, [38], rushing the people to send their orders to Savva of Arsic, husband of the first Serbian woman writer Evstahija of Arsic. One of her books was “Poleznaja razmislenija o cetyrjeh godisnjih vremenah” {“Useful meditations on four seasons”}. More details on her activity see [39]. The book by Mihajlovic, according to my knowledge, has not been published, but the same author printed in 1818 in Pest “Enkyklopedija ili kratkoje opisanije sviju nauka” {“Encyclopaedia or short description of all sciences”}. Astronomy has also been included in this book. More details see, again, in [39].

Professor of mathematics, mathematical geography, and so on, on Paedagogic faculty in Sombor, Vasilij Bulic, opened the subscription to his “Political Geography”, on three pages [40]. For us it is

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interesting that a part of it should be dedicated to the preparations in mathematical and physical knowledge. The same author wrote "Zemljeopisanije vseobsce, Cast I. Zemljeopisanije matematičesko" {"General geography, Part I. Mathematical geography"} in the year 1824. More details, once more, in [39].

5. MISCELANEOUS ASTRONOMICAL SUBJECT AND EVENTS

On the 10th March 1792 the Turkish ambassador in Vienna, accompanied by the Secretary of State von Stirmer, visited the Observatory of the University of Vienna and testified his public praise to the professor abbot Hell [41].

Erzherzog Pallatin opened on the 7th/19th October 1815 the newly built Astronomical Observatory of the University of Pest on Gerzel. In his presence the director Paskvics started the first observation [42].

New astronomical observatory was erected in Goettingen started by the former King of Westfalen (Hieronimus Bonaparte), who was a great admirer and patron of astronomy [43].

In the "Short review submitted to the Emperor about the report of the public Ministry of school-education in the year 1835" there has been mentioned, among other facts, that in gymnasium, had been taught, with an exceptional care, mathematics, astronomy, natural history, etc. [44].

A long article has been devoted to Nicolao Copernico and his life [45]. Following a thorough review of former systems of Universe the author describes the Copernican system. Emphasizing his work he proposed to Serbs and to other Slavic people to erect a magnificent monument such as the one in Torun, in Poland.

6. CALENDAR AND ALMANAC ANNOUNCEMENTS

As it is well known the first part of calendars is devoted to astronomical events (as well as in most almanacs). There is a very useful and mostly interesting study on Serbian calendars by Nenad Jankovic [46], so, I will narrow my attention only to some of advertisements.

Under the title "Report on a new Serbian calendar" [47] the editor of *Serbskija noviny*, Markides Puljo, gives a short review on the contents of the calendar for the year 1792.

In the next [48] the author reports that the Emperor, through the Illiric bureau, gave his permission to the printing of the calendar for the year 1792.

After a conclusion that Slavoserbian people had a lack of books, the editor recommended his calendar for the year 1792 [49].

The last number of *Serbskija noviny* in the year 1791 [50], has been used again, on a half of the page, to propagate the new calendar.

Again, among other material, astronomical prophecies were to help the selling of the printed calendar [51].

The calendar for the year 1793 has been announced only by a short note [52]. It must be that the Serbian people comprehended the importance of the calendar and got to like it, did they not?

"Prompt information is the best one" would we say to-day, but this slogan has been applied more than 150 years ago. We may read that the Calendar or Monthspeaker {an often used expression for calendars in that time, among Serbs} for the year 1836 was in print, so, the readers could subscribe to it. The content list is followed by this sentence: "The price of this Monthspeaker will be, in comparison of type and content, to all the other calendars, cheaper! In Beograd on the 23rd July 1835." [53]

Amusement magazine {again a beloved expression among Serbs of that time} for the year 1836 contains also a calendar, astronomical prediction {on weather and on eclipses}, novels etc. [54]. This advertisement was a whole page long.

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Under the title "Literary Announcement" the editor informs the reader that under the press are: 1) Calendar for the year 1837, 2) Monthspeaker for the same year, and 3) Amusement magazine "Urania". All of them had astronomical parts also [55].

The editor of the Amusement magazine "Urania", Dimitrije P. Tirol, advertised the content of it and called the collectors of subscriptions to activate themselves "to the benefit of the welfare of Serbian people" [56].

7. SOME MORE INTERESTING ITEMS

On the 21st September 1793 the French government adopted a new calendar : 1) the year counting will start from the moment when the Sun reaches in the equinox point on the 21st September 1792, 2) a year will have 12 months of 30 days, the excess will be dedicated to a special boon, 3) each month will have three weeks of 10 days and will get new names {which have been catalogued}, 5) the weekdays will also get new names {followed by their list and translations as in the case of months}, 6) every four years Olympic games will be held [57].

Napoleon Bonaparte asked a chemist, a botanist and an astronomer {my underlining} to accompany him to the Elba island [58]. Very interesting and enlightening!

From the Austrian Observer the editor reprinted an article on calendar. Comparing the Gregorian and the tropical year he concludes that 450 years of the last ones have exactly 164 359 days. The same number of days have 341 common and 109 leap years. The recipe how to match the existing manner to the proposed one is given [59].

A suggestion "How to use sundials in the night as moondials" [60] describes the proposal how you may, looking at a sundial, seeing the shadow of the Moon, know the exact time. With two examples.

8. CONCLUSION

Because of the lack in space (and in time needed for oral communication) I must omit some interesting details, not in a very close connection with Astronomy, but of interest to the reader (present audience).

Let us the only one of them. A professor of astronomy in Bologna, in Italy, on account of some sunspots, predicted the End of the world on the 6th/18th July 1816. But the authorities of the Papal state imprisoned him thinking that he might be a tramp [61]. It is interesting that on the predicted day a regiment of cavalry, entering Gent, heard a horn, calling them to a gathering. At the same time the heaven was very dark, it thundered, the lightnings stroke. Suddenly, many people started to cry, to weep, to run in the streets – they thought that the End had come According to the Bible it should start with a blow of a horn followed by stormy weather, the same as it was then in that town! With great difficulty the inhabitants got their peace again [62].

It is a very sad fact that an ignorant person may cause a great trouble!

We had the same phenomenon concerning the recent eclipse of the Sun, on the 11th August 1999 : the "experts" did drive crazy common people They were frightened so much that they sat in dark rooms, with window blinds shut, etc. not to mention other nonsenses.

On this occasion we showed, our ignorance. **IT IS THE LAST TIME TO INTRODUCE THE SUBJECT A S T R O N O M Y INTO OUR SCHOOLS INSTEAD OF OTHER WHICH ARE SUBJECT TO CHANGE WITH EACH GOVERNEMENT !!!**

Our ancestors were much wiser than we, now, on the threshold of the XXI century!!!

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