

DIGITIZED WORKS OF B. ŠEVARLIĆ IN VIRTUAL LIBRARY OF FACULTY OF MATHEMATICS

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Abstract. In the Virtual Library of the Faculty of Mathematics <http://elibrary.matf.bg.ac.rs>, there are eleven digitized works of Branislav Ševarlić, professor of the Belgrade University. These works include his doctoral dissertation, four university text-books on astronomy, three translations of books written by Russian authors, two textbooks for secondary schools, and the last one is the Astronomical Atlas. A particularly important work is his book General Astronomy (1971) as it was used for generations for teaching of astronomy at the University of Belgrade. The aim of this paper is to present all these works as well as the short biography of Professor Branislav Ševarlić.

1. BIOGRAPHICAL NOTE

Professor Dr Branislav Ševarlić was born on June 28, 1914 in Belgrade where he finished all pre-university education. From 1932 he was a student at the Faculty of Philosophy of Belgrade University. He obtained the university degree in 1936 as an excellent student in a study group defined as a) Theoretical Mathematics, b) Rational and Celestial Mechanics and c) Astronomy. At the age of 23 in 1937, after having took the degree and doing the military service, Branislav Ševarlić came to the Astronomical Observatory in Belgrade to become an astronomical observer. As a member of the staff, led by Prof. Mišković who was the Director at that time, he had various activities. Mišković recognised a vigorous and smart young man and made him his helper in administration. The young Ševarlić, in addition to the calculation and astronomical activity, was during some time also the secretary of the Observatory.

In the middle of 1950 he became the chief of the Service of Latitude Variations. Thanks to his efforts and results achieved with the coworkers the Observatory was included in the International Polar-Motion Service. Through his monographs and PhD thesis defended in 1960 he gave a significant contribution to the study of latitude variations. The chief in the Group of Relative Coordinates he officially became in 1963 and, therefore, he started his activity in the field of fundamental astrometry. He organised the examination of the parts and measuring devices of the Belgrade Large Meridian Circle (LMC) and took part in the first observations carried out with



Professor Branislav Ševarlić

this instrument. Later on the observations with LMC resulted in seven observational catalogues, out of which some appear as a valuable astronomical contribution.

As for Prof. Ševarlić's university career, he became assistant as early as in 1939, at the Faculty of Philosophy for the subject of astronomy. After the Second World War, when at the Faculty of Civil Engineering the Geodesy Department was founded, Branislav Ševarlić applied to teach positional astronomy, a subject in the fourth year of studying. In 1948 he began with the lectures, from 1953 as assistant-professor, from 1957 as associate professor, to become full professor in 1961; the subject was geodetic astronomy at the Faculty of Civil Engineering. In 1964 he became full professor also at the Faculty of Sciences of the same university, the subject was astronomy and he was retired there in 1980. Many generations of astronomers passed Prof. Ševarlić's school, his name is well known to numerous students, pupils and amateurs oriented towards astronomy for diverse reasons. In addition to technical and scientific papers Prof. Ševarlić also wrote a few textbooks, several books and many papers which popularise the science of astronomy. From 1937, when his first paper, written by several coauthors, appeared, till 1997, when "*Astronomski atlas 2*" (Astronomical Atlas 2) was published, there is a period of roundly sixty years of his creativity.

Prof. Branislav M. Ševarlić is remembered as a versatile person, erudite and an unexceedable narrator. In his texts there is an easily noticeable intention to achieve a good Serbian, to indicate its beauty, to present a thought as precisely as possible, to represent the science of astronomy as successfully as possible.

The subject of the present paper is his PhD thesis, seven books and three translations. The digital copies of the books can be found in the Virtual Library of the Faculty of Mathematics at <http://elibrary.matf.bg.ac.rs>.

2. PROF. ŠEVARLIĆ'S WORKS

Branislav M. Ševarlić's PhD thesis *Prilog ispitivanju promena geografske širine Beograda* (A Contribution to the Examination of Variations in the Latitude of Belgrade) resulted in a few important issues: local non-polar influences were established, a distinction among the periods of latitude variations was found, for instance, Chandler's period, semi-annual and annual ones, and the influence of the wind speed and direction was specially treated. All of this tells us about the problems and difficulties met by astronomers in the middle of the XX century in

the determination of motion of the terrestrial poles. Prof. Ševarlić gave here a procedure for quick determining the pole coordinates from observations performed at one latitude station. We want specially to indicate the value for the aberration constant obtained by him based on the Belgrade latitude observations. At that time this constant was assumed to be equal to 20.47 arcseconds. With regard that he from the Belgrade observations had found a value of 20.52 arcseconds, he insisted on enlarging the aberration-constant value to at least 20. 50. It is well known that the modern value for this constant in the System of Astronomical Constants of IAU (1976) is equal to 20. 49552.

Geodeska astronomija (Geodetic Astronomy) is one of the Serbian first university textbooks. It was written by B. Ševarlić and Z. Brkić in 1963 for the students at the Geodesy Department of the Faculty of Civil Engineering in Belgrade. This textbook was preceded by a translation from Russian of *Kurs astronomije* (Astronomy Course) by N. F. Tsinger (translated by S. P. Bošković, Belgrade, 1925). This book of a clear and illustrative style has 266 pages. It contains many illustrations (92) and tables (33). There are also 63 solved problems very useful in learning and understanding the material. At the end of the book there is a copious literature including the lists of used books, problem collections, astronomical tables, handbooks, monographs, stellar catalogues and star charts and, at the end, a list of important scientific papers. These special lists were very important to students who continued their education in the field of astronomy.

Opšta astronomija (General Astronomy) by Prof. Ševarlić and Prof. Brkić appears as a significant augmentation of the university textbook *Geodeska astronomija* (Geodetic Astronomy) by the same authors. In it one treats the fundamentals of classical astronomy disciplines, such as: spherical, practical and theoretical astronomy, celestial mechanics and fundamentals of astronomical and physical geodesy. The book was to be used by the second-year astronomy students at faculties of sciences, as well as by future secondary-school teachers of astronomy, offering them a good basic knowledge in this field. Even today an astronomer should have this university textbook at the disposal. The purpose is not only reminding of a definition or checking a forgotten formula, but also solving a dilemma concerning the language.

Astronomski atlas (Astronomical Atlas) was prepared by Prof. Ševarlić together with Sofija Sadžakov. Its was an auxiliary textbook of astronomy for the primary and secondary school pupils. Assuming that the basic notions must be enlightened by using pictures, because in this way they would be understood and learnt more quickly and easily, this atlas contains numerous illustrations followed by short explanations. Clearly, such a book appears as a successful addition to the textbook material expected to be easy enough and interesting to the readers. It consists of 14 chapters which mainly follow the syllabus of that time and the official textbook. After the Introduction one finds chapters about astronomical instruments, astronomical observatories and famous astronomers. The whole material contains many figures and photographs so that it appears to be of interest even to those who are not specially fond of astronomical science.

The university textbook ***Istorija astronomske nauke - od Njutnova doba, do naših dana (History of Science of Astronomy - from Newton's Age to Our Days)*** is provided first of all for students of astronomy, but can be used as

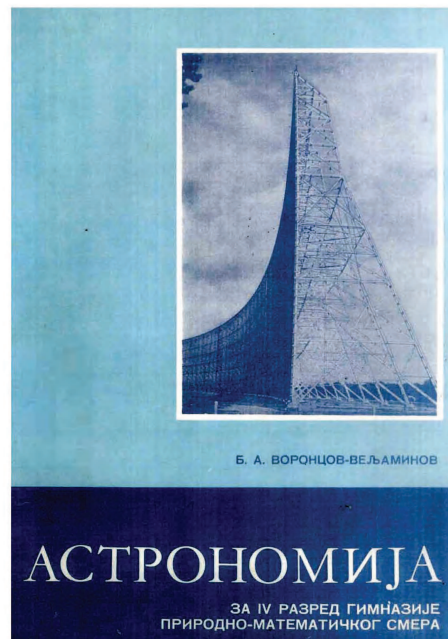
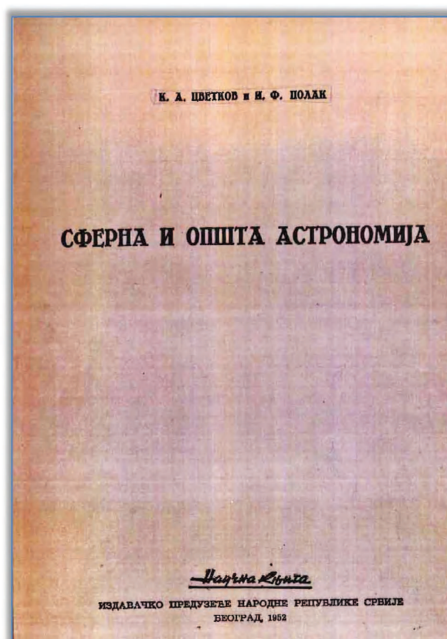
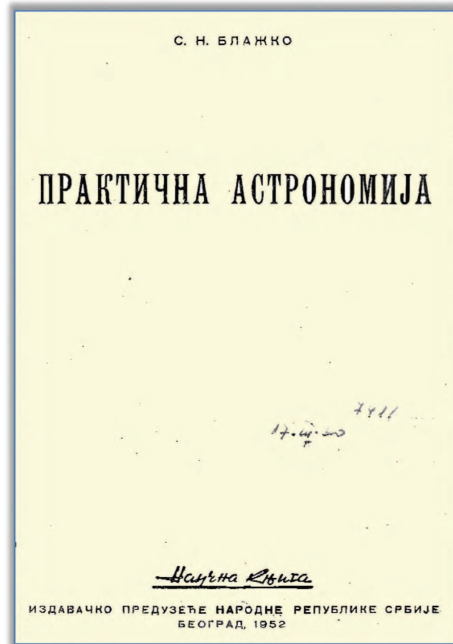
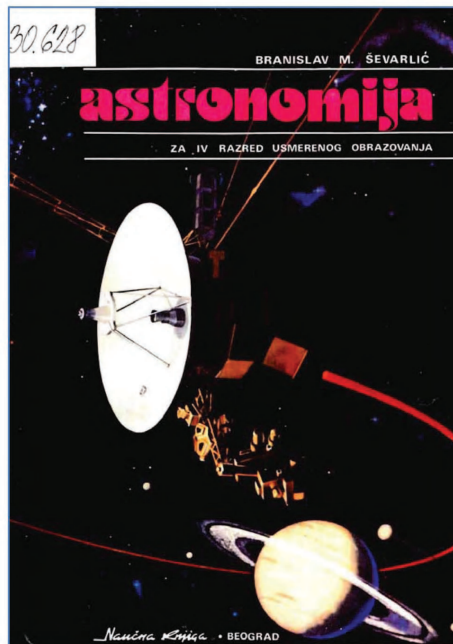
well by all whose field astronomy is, or they are only interested in it. It appears as a continuation of Milanković's *Istorija astronomske nauke od najstarijih vremena do 1727* (History of Science of Astronomy from the Earliest Times till 1727). The title of the book indicates the time interval covered by it. Naturally, all results and minor discoveries, which gave way to later more important, even epochal, discoveries, are not presented in the book. As the author says "the book contains a selection as careful as possible, but only a selection among many discoveries and theories and, also, it is free of all technical details and formulae being taught elsewhere."

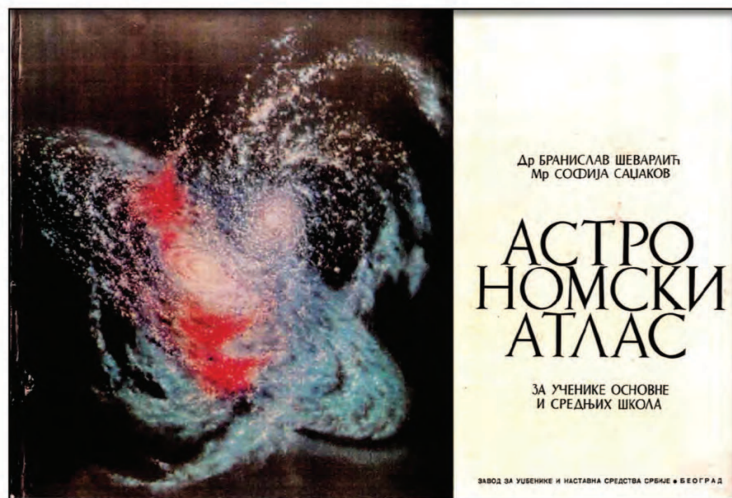
The book *Putevi saznanja o Vasioni* (The roads of knowing about the Universe) written by Branislav Ševarlić was edited by *Mlado pokolenje* in Belgrade in 1967. It has 178 pages with 54 illustrations within the text. Its purpose concerns general education. In it one describes astronomical observations from the earliest ones towards very modern, to use the author's own words, "from stick and rope towards a radio telescope". The questions of origin for the Solar System and for our stellar system, the Milky Way, are described using legend and science. The diversities of our stellar home are also described, as well the scientific facts concerning space and the Universe. This book is very interesting and pedagogically useful. We are glad to recommend it to be read, not only by pupils and students, but also by an extended reader population.

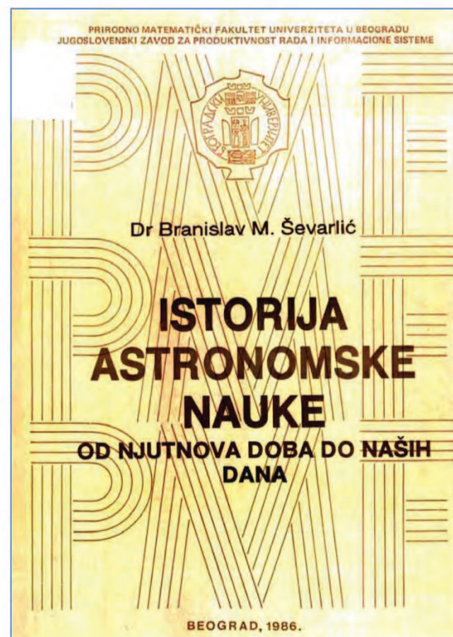
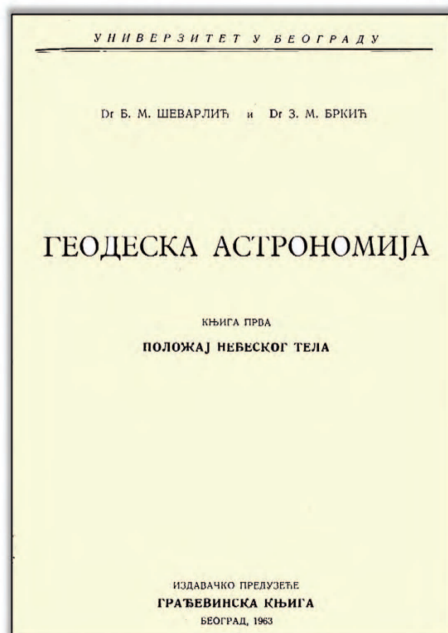
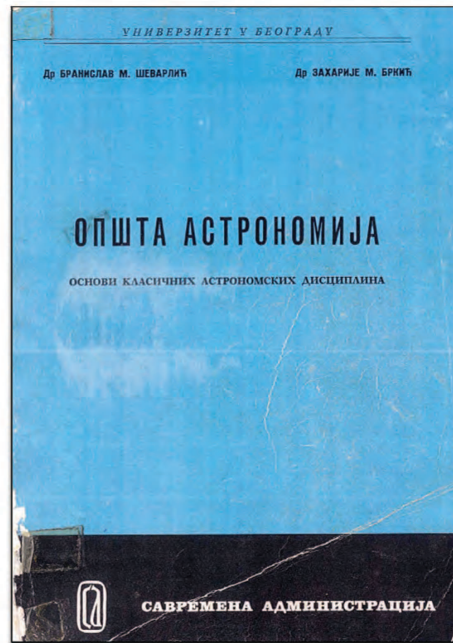
The gymnasium textbook *Astronomija* (Astronomy) was written by B. Ševarlić, M. Vukićević-Karabin and S. Sadžakov. It was published by the publishing house "Zavod za udžbenike i nastavna stedstva" in Belgrade in 1975. *Astronomija* was a textbook for the last (IV) gymnasium form. Before in Serbian there was a textbook entitled *Kosmografija* (Cosmography) by Vojislav Mišković printed in 1953 in Belgrade and also the translation from Russian of the secondary-school textbook *Astronomija* (Astronomy), the author of which is B. A. Vorontsov-Vel'yaminov. *Astronomija* has 195 pages with 128 figures within the text and a star chart at its end. After every chapter there are lists of questions and problems. These questions and problems are suitable as exercises for learning. A good supplement to this textbook is *Astronomski atlas*, already mentioned above.

The secondary-school textbook *Astronomija* (Astronomy) was written by B. Ševarlić and published by "Naučna knjiga" in Belgrade in 1980. This textbook was for the last (IV) form of the reformed secondary school, mathematico-technical specialty. It contains eleven chapters, on 167 pages with 125 figures within the text. The astronomical notions and phenomena are explained in an understandable and simple way. The large number of figures contributes to a higher clarity of the material. At the end of each chapter there are problems to be solved and also practical examples concerning observations. The problems and instructions how to observe made that the learning could become more evident and interesting to the pupils.

***Praktična astronomija* (Practical Astronomy)** is a university textbook written by Prof. S. N. Blazhko in Russian in 1940, translated into Serbian by Branislav Ševarlić in 1952. With regard to lack of textbooks written by Serbian authors this translation was very important to the students of astronomy and geodesy in studying the observational methods and instruments. It was written on 323 pages with 104 figures within the text. These figures contribute to have a more informative way of describing astronomical instruments. Unlike the original the translation was provided







with a star chart in stereographical projection made by an engineer of geodesy, D. Šaletić. Unfortunately, the chart has not been preserved and, therefore, we have no possibility of digitising it.

***Sferna i opšta astronomija* (Spherical and General Astronomy)** is a university textbook written by Profs. K. A. Tsvetkov and I. F. Polak in Russian in 1945, and translated into Serbian by Branislav Ševarlić in 1952. This translation was very useful to the students of astronomy and geodesy because of lack of textbooks written by Serbian authors. It had a significant importance for the purpose of creating the astronomical terminology in Serbian. A great contribution in creating this terminology is due to Prof. Ševarlić. The book contains 362 pages, 119 figures and 19 telescope photographs of celestial bodies. It involves the part of spherical astronomy which concerns the Earth, the Solar System and stars. The main objective is qualifying astronomers to utilise annuals, ephemerides and catalogues.

***Astronomija* (Astronomy)** is a secondary-school textbook written in Russian by B. A. Vorontsov-Vel'yaminov (publication: Moscow, 1968), and translated into Serbian by B. Ševarlić and S. Sadžakov in 1969. The original of this book has been popular and utilised very much in the Russian-speaking area so that it has had several editions. It was written exceptionally nicely and systematically and it contains many illustrations, examples and problems. For this reason its translating appeared as a significant contribution to the secondary-school-textbook literature in Serbian.

3. CONCLUSION

The Virtual Library is a place where, via Internet, one can find the works of Serbian scientists written sufficiently long ago. By including the digital copies of the books written by Prof. Ševarlić we have made them easily available to an extended public.

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