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ПУБЛИКАЦИЈЕ АСТРОНОМСКЕ ОПСЕРВАТОРИЈЕ У БЕОГРАДУ  
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Св. 59

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MILAN S. DIMITRIJEVIĆ

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BELGRADE ASTRONOMICAL OBSERVATORY IN 1997



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## FOREWORD

During 1997, 152 bibliographic items have been published, with 11 among them in international scientific journals of highest rank, 4 in books of international publishers, 28 in national scientific journals, 2 in books reproducing invited lectures of international conferences, 79 as contributed papers of international and national conferences, and 22 in IAU circulars. Eight invited lectures have been given by fellows of Observatory at national conferences. One catalogue in Bulletin Astronomique de Belgrade, 5 reviews and monographic texts in national publications as well as two M.Sc theses have been published. Our fellow Zoran Knežević has been the reviewer of one article for each: ICARUS, CELESTIAL MECHANICS and PLANETARY and SPACE SCIENCE.

Numbers 155 and 156 of the Observatory's regular publication BULLETIN ASTRONOMIQUE DE BELGRADE, as well as Nos. 55, 56, 57 and 58 of the PUBLICATIONS OF THE ASTRONOMICAL OBSERVATORY OF BELGRADE have been issued. These publications are regularly sent to 126 institutions and libraries in 43 countries and to 14 institutions and libraries within Yugoslavia.

Observatory's fellows have participated in works of 13 International conferences abroad (30 participations by 10 fellows) and four conferences in Yugoslavia (21 participations by 16 fellows).

Organized by the Observatory were:

1. Razvoj astronomije kod Srba (Development of astronomy among Serbs), Belgrade, 1-9.04. 1997.

With the participation of Observatory were organized:

2. III Romanian - Yugoslav round table on cooperation in astronomy, Cluj - Napoca, 6.10. 1996.
3. II Yugoslav Conference on Spectral Line Shapes, Bela Crkva, 29.09 - 2.10. 1997.

During 1997, Observatory's fellows have continued collaboration with their colleagues in Belarus, Belgium, Brazil, France, Greece, Holland, Hungary, Italy, Japan, New Zealand, North Ireland, Romania, Russia, Slovakia, Spain, Turkey and Ukraine. New individual collaborations between our Observatory's fellows and their colleagues in Bulgaria, Estonia, USA and Uzbekistan have been established in the course of 1997.

Besides numerous newspaper articles and radio and TV emissions Observatory's fellows authored, they gave 37 lectures on astronomical subjects outside as well as within our institution, contributing to the cultural life in our country.

As from 1997, Bulletin Astronomique de Belgrade is available on www through the Astrophysical Data System (ADS), thanks to the courtesy of the System's holders. The www address is: <http://adswww.harvard.edu.BOBeo>.

## 1. SOME OF THE MAIN RESULTS OF THE OBSERVATORY'S RESEARCH ACTIVITY

The essential contributions to the science, with an echo in the international scientific community are obviously the contributions published in international journals. That is why a review of results of Belgrade Observatory's fellows just in such publications will be presented, as well as of published stellar catalogues which are commonly the results of an effort of many years and are of a particular interest to the astronomical community. The results of observational programmes, review articles in books of international standing and theses will be mentioned as well.

A very extensive list of line broadening data is of interest in analysis and modeling of stellar plasma, in stellar opacity calculations, abundance determinations, investigations of subphotospheric layers and other astrophysical problems. The interest in such data has been particularly stimulated by the development of space astronomy where an extensive amount of spectroscopic information over large spectral regions of all kind of celestial objects has been and will be collected, stimulating the spectral-line-shape research.

In order to complete as much as possible such data needed in astrophysical and laboratory plasma research and stellar opacity calculations, Dimitrijević and Sahal-Bréchet continued in 1997 the work on their project to provide Stark broadening data for a large range of atoms and ions, and published semiclassical perturbation results for Stark widths and shifts of Ba I, Ba II and P IV.

Barium is one of thermonuclear s - processes product in stars and its overabundance is observed in CH subgiants, characterized by enhanced Sr and Ba lines, and in metal deficient barium stars, giants showing overabundance of s-processes elements. Barium lines are present in solar and stellar spectra. E.g. Ba I and Ba II lines have been observed (1993) by Komarov and Basak in the spectra of Sun and two Praesepe's stars. Barium lines are also of interest in the investigation of laboratory plasmas and Stark broadening of Ba I and Ba II lines has been considered experimentally and theoretically in a number of articles. Dimitrijević and Sahal-Bréchet (1997a) have calculated within the semiclassical-perturbation formalism electron-, proton-, and ionized helium-impact line widths and shifts for 14 Ba I and 64 Ba II multiplets, for perturber densities  $10^{15} - 10^{18} \text{ cm}^{-3}$  and temperatures  $T = 2,500 - 50,000 \text{ K}$  for Ba I and  $T = 5,000 - 100,000 \text{ K}$  for Ba II.

The obtained results are compared with the critically selected experimental results, and the existence of large differences between particular experiments and between theory and experiment has been stated. The agreement exists between widths of Dimitrijević and Sahal-Bréchet (1997a) for  $6s^2S-6p^2P^o$  multiplet and those found by

Fleurier, Chapelle and Sahal-Bréchet (1977), that experiment having critically been estimated by Konjević, Dimitrijević and Wiese as possessing the highest accuracy among Ba II experimental data. As for the shift, the best agreement is with results of Purić and Konjević (1972) for the same multiplet. Results of Dimitrijević and Sahal-Bréchet (1997a) concerning Stark width are in agreement with the semiclassical calculations of Cooper and Oertel as well as with the semiclassical calculations, based on the theoretical approach developed by Griem, Baranger Kolb and Oertel (1962) and further improved and described in detail by Jones, Benett and Griem (1971) and Griem (1974), performed by W.W. Jones (1976), and Purić, Dimitrijević and Lakićević (1978). The obtained results relating to the shift are in agreement within the error of the method with the semiclassical calculations of W.W. Jones, but in strong disagreement with the calculations of Gorchakov and Demkin (1978), performed within the semiclassical approach of Vainshtein and Sobel'man, with the semiempirical calculations of Purić and Konjević (1972) and with the simple estimates of Lakićević (1983). New high precision measurements of Stark broadening parameters for Ba I and Ba II lines will be of interest in the development of theoretical methods treating heavy atoms and ions.

Stark broadening parameters of P IV lines are of interest not only in the plasma diagnostic but in the research of regularities and systematic trends and theoretical considerations as well. For this reason, Stark widths for P IV  $4s^1S - 4p^1P^\circ$ ,  $4s^3S - 4p^3P^\circ$  and  $3p^3P^\circ - 3d^3D$  multiplets have been determined previously by Dimitrijević and Konjević in 1981, and by Dimitrijević in 1988 within the modified semiempirical approach of Dimitrijević and Konjević, Griem's semiempirical approach, Griem's simplified semiclassical approach and its modification by Dimitrijević and Konjević. Dimitrijević and Sahal-Bréchet (1997b) have calculated within the semiclassical-perturbation formalism electron-, proton-, and He III-impact line widths and shifts for 114 PIV multiplets, for perturber densities  $10^{15} - 10^{20} \text{ cm}^{-3}$  and temperatures  $T = 5,000 - 1,000,000 \text{ K}$ . The obtained semiclassical Stark widths have been compared with the calculations of Dimitrijević by using the modified semiempirical approach, Griem's semiempirical approach, simplified semiclassical approach and its modification. The best agreement is with the results obtained by using the simplified semiclassical approach. For further development and refinement of the theory, the corresponding experimental data will be of course very useful.

In 1997, Dimitrijević published the bibliography with citation index: "Spectral Line Shapes Investigations in Yugoslavia and Serbia 1993-1997" containing also a review of the results and achievements. Three previously published Bibliographies with citation index on Spectral Line Shapes Investigations in Yugoslavia, cover the period 1962 - 1993. The analysis for the 1993 - 1997 period shows that from September of 1993 up to the March of 1997, 261 articles concerning line shapes investigations have been published by Yugoslav (Serbian) authors in addition. In Serbia 2 Ph. D. and 9 M. Sc. Theses concerning this research field have been defended. Accordingly, since the first article on this topic, published in 1962, up to the March 1997, 1129 (926 by Serbian authors) bibliographic items have been published by 146 Yugoslav authors (119 from Serbia, 26 from Croatia and 1 living in France). In the considered period various problems have been investigated. Stark broadening of hydrogen and hydrogen-

like emitter lines has been studied, in particular for He II line shapes, and hydrogen line shift due to magnetization of moving plazma. Also, the attention has been paid to the study of H beta line shapes in the presence of a D.C. magnetic field, to the investigation of hydrogen line shapes in a plane - cathode abnormal glow discharge, radio - frequency discharges and other discharges, the boundary layer influence on low n Balmer lines and to the influence of ion dynamics.

Work on the experimental determination of Stark broadening parameters of non-hydrogenic atoms and ions has been continued during the considered period: Stark broadening of the following atoms and ions has been investigated: Ar I, Ar III, Cd II, Cu I, F V, Fe I, Hg I, Na I, N II, N III, N IV, Ni I, II, O III, O IV, S III, and Si I. Also, the influence of ion dynamics, temperature dependence, departure from LS coupling and Li-, Be- and B- isoelectronic sequence have been investigated.

Using the semiclassical perturbation approach, the spectra of the following elements have been investigated: Be I, Mg I, Al I, Rb I, Se I, Sr I, Ba I, Li II, Mg II, Fe II, Ni II, Ba II, B III, Be III, S III, Al III, C IV, O IV, P IV, S IV, C V, O V, P V, F VII, Ne VIII, Na IX, Al XI and Si XII. The effects of oscillator strength values on Stark broadening parameters have been investigated as well.

When it was not possible to use the semiclassical perturbation approach with the appropriate accuracy due to the lack of reliable atomic data, the modified semiempirical method of Dimitrijević and Konjević and other approximate methods have been applied. Such methods have been investigated in several papers as well as the case of the complexity of the radiator. The modified semiempirical approach has been applied to the lines of Sc II, Bi II, Cd II, I II, As II, Zn II, Br II, Sb II, Y II, Zr II, Kr II, Xe II, Zn III, Ge III, As III, Se III and Cu IV.

A special attention has been paid in a number of papers to the investigation of regularities and systematic trends of Stark broadening parameters. Similarities of Stark broadening parameters within spectral series have been investigated as well as systematic trends for the same type of transition within a homologous, isonuclear and isoelectronic sequence. By using regularities and systematic trends, Stark broadening parameters of the following emitters have been predicted: Mg I, Mg II, N V, O VI, S VI, Fe I, Fe II, Fe III, Fe IV, C IV, Si IV, Na IX - Ti XX and doubly-charged ion off-resonance .

Astronomical aspects of spectral line shapes research were studied in a number of publications, such as optical depths of the formation of Fraunhofer lines, micro-turbulent sensitivity of solar spectral lines, Mg II h and k lines in spectra of alpha Orionis, IM Pegasi and HR 7275, IUE spectra of mu Cephei, Fourier analysis of rotationally broadened stellar spectra, and Stark broadening parameters in Solar and stellar plasma research and in hot star spectra investigation. At Belgrade Observatory the programme of monitoring of activity - sensitive spectral lines of the Sun as a star, during a 11-years solar cycle is in the course of realization. In accordance with this programme the solar activity effect on spectral lines, as well as the effect of photospheric parameters on such spectral lines have been investigated in several papers. In view of the need to obtain a better connection between astronomical observations and theoretical interpretations of astrophysical spectra, the radiative transfer investigations have also been carried out. Moreover, the influence of the gravitational field on



the shape of spectral lines of Seyfert galaxies and quasars has also been studied. The work on the formation of a Data Base for the Active Galactic Nuclei (AGN) spectral lines is also in progress.

G. Djurašević published two papers (Djurašević 1996a, 1996b) with the results of his investigation of close binaries. The former paper (Djurašević 1996a) contains a model synthesizing the light curves of novae - like stars, as well as of active close binaries (CB) in the phase of an intensive matter exchange between the components with accretion onto a white dwarf. The model considers the radial and azimuthal temperature distributions in the disk enabling a successful interpretation of asymmetrically deformed light curves characteristics of the systems. The analysis of the observed light curves is performed by using the inverse-problem method adapted to this model. In the particular case the parameters of the dwarf-nova OY Car are estimated on the basis of the U and B observations. The synthetic light curves obtained through the inverse-problem solving, as a whole, fit the observations well which indicates that it is possible to estimate the system parameters on the basis of the model proposed here.

The obtained results indicate a complex hot-spot structure approximated in the model with two components - a central part and a surrounding spot larger in size. For the mass ratio of the components  $q=0.102$  one finds for the orbit inclination about  $83^\circ.8$ . The analysis shows that the disk radius is about 0.51 of the corresponding Roche lobe radius. On the basis of U and B light curves the quiescent disk-edge temperature is estimated. Estimated have also been the disk size, its thickness and the white-dwarf radius.

The obtained results are in a relatively good agreement with the system parameters estimated earlier by Wood, Horne, Berriman and Wade. This indicates that the proposed model of the system and the corresponding inverse-problem method briefly presented here are fully applicable to the analysis of active CB light curves in this evolutionary phase. Though the model given here includes a number of approximations, it allows an independent procedure in the observational - material analysis based on the light - curve synthesis and on the application of the inverse - problem method. Results obtained by applying such an independent method can also serve as a reasonable way in testing the solutions obtained by utilising earlier approaches.

The subject of the Djurašević (1996b) paper is the problem of stellar differential rotation in close binaries of RS CV n type. The differential - rotation parameters Djurašević finds on the basis of the migration of the depression in the light curves caused by the spot effect over the orbital phase. For that purpose, a simple model of Busso, Scaltriti and Cellino, and inverse - problem procedure, based on the Marquardt algorithm, are used. To verify the obtained solutions, the SIMPLEX algorithm is applied, suitable for the nonlinear parameter optimization. This algorithm allows a correct solution of the nonlinear equation system describing the differential rotation. The procedure is applied in the determination of the parameters of differential rotation for CV Cam, VV Mon, and SS Boo binaries.

In several previous papers (see references in Mihajlov, Ignjatović, Vasiljević and Dimitrijević, 1997), chemi-recombination processes during the free electron scattering on the quasi-molecular collisional complexes  $H(1s) + H^+$  and molecular ions  $H_2^+$  in the weakly bound rovibrational states, have been introduced and investigated by Mi-

- hajlov, Dimitrijević, Ljepojević, and Djurić. It was assumed that these molecular ions are in the ground electronic state  $X^2\Sigma_g^+(1s\sigma_g)$ . The mentioned chemi-recombination processes are

$$H_2^+ + e \Rightarrow H^*(n) + H(1s), \quad (1a)$$

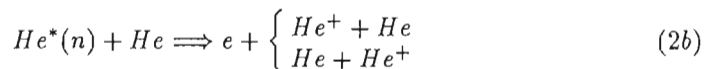
$$H(1s) + H^+ + e \Rightarrow H^*(n) + H(1s), \quad (1b)$$

where  $H^*(n)$  denotes hydrogen atom in a highly excited (Rydberg) state with the principal quantum number  $n \geq 4$ . It has been shown that in partially ionized plasma the processes (1a) and (1b) may be significant for the  $H^*(n)$  atom populations. This conclusion has been derived from the comparison of the (1a,b) processes with the electron - electron - ion recombination processes whose importance for hydrogen plasmas is well known.

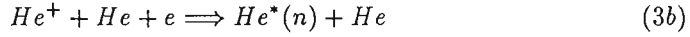
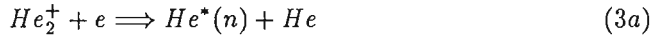
In this paper the (1a,b) processes have been considered from the aspect of their influence on  $H^*(n)$  atom populations of solar photosphere and lower part of chromosphere. It was pointed out that the taking into account of these processes may be particularly important when the conditions of LTE, concerning the excited atom population distribution function, are not satisfied. Such situation exists just for the above mentioned parts of the solar atmosphere (due to their small optical depth). It has been shown that for particular layers of the solar atmosphere, the chemi - recombination processes (1a,b) could be comparable or sometimes even more important than the processes of the electron - electron - ion recombination as well as with the processes of electron - ion photorecombination, which have a particularly important role in the solar atmosphere. Consequently, the (1a,b) processes must be taken into account when modelling the solar atmosphere, together with other relevant recombination processes.

The obtained results show that the (1a,b) chemi - recombination processes evidently have an important role in the large region around the temperature minimum in the Solar atmosphere, where they are comparable or dominant in relation to the other recombination processes. Within this range they may be a quite significant factor contributing to the smaller decrease from LTE. Consequently, this shows the necessity of the inclusion of the (1a,b) processes in the modelling of the weakly ionized layers in the Solar atmosphere. For Solar and stellar atmosphere models where  $T_e = T_a = T$ , the expressions for the (1a,b) chemi - recombination processes total rate coefficient, given in this paper, may be used. However, for atmosphere models where the equality of  $T_e$  and  $T_a$  is not assumed, the corresponding tables and the general expressions for partially ionized nonequilibrium hydrogen plasma are given by Mihajlov, Dimitrijević, Ljepojević, and Djurić in previous articles (see references in Mihajlov, Ignjatović, Vasiljević and Dimitrijević, 1997).

Mihajlov, Djurić, Dimitrijević and Ljepojević (1997) have considered the chemi-ionization processes during  $He^*(n)$  and  $He$  slow collisions



and the inverse  $He - He^+ - e$  and  $He_2^+ - e$  recombination processes



where  $He = He(1s^2)$ ,  $He^+ = He^+(1s)$  and  $He_2^+$  is molecular ion in the ground electronic state  $^2\Sigma_u^+$ . Rate coefficients of the processes (2,3) are determined within the framework of the existing semi-classical theory, based on the mechanism of resonant energy conversion within the electronic component of the observed atomic system. This theory describes ionization in the case of an atom - Rydberg atom symmetrical collisions, and recombination in the case of electron scattering on the corresponding ion - atomic complexes and molecular ions, under conditions similar to those in weakly ionized plasma. The differential and total rate coefficients for processes (2,3) are determined in the case of non-equilibrium helium plasma with atomic temperature  $T_a$  and electronic temperature  $T_e$ , within the ranges  $500K \leq T_a \leq 10000K$  and  $2000K \leq T_e \leq 40000K$ , with the principal quantum number  $3 \leq n \leq 10$ . It is shown as well that the (2,3) reaction must be treated as a factor influencing simultaneously  $He^*(n)$  atom populations and free electron energy distribution for weakly ionized plasmas. Consequently, with the help of the calculated differential rate coefficient, the emitted/absorbed electron energy distributions were considered. The authors have determined in this paper also the conditions under which the considered processes are important for the kinetics of weakly ionized helium plasma. The results have been given in such a form that they can be used directly when modeling weakly ionized helium plasma.

S. Jankov took part in the multi-site spectroscopic MUSICOS 1989 campaign and the obtained results are published in Hubert, A. M. ... Jankov, S., et all (1997). Reported in the paper is the detection of rapid variability in the photospheric HeI 6678 line of the Be star 48 Per (HD 25940, HR 1273), from 258 high S/N CCD spectra taken with four 1.5-2.0 meter telescopes over three consecutive nights during the MUSICOS 1989 campaign. 48 Per is known to have presented slight long-term variations in the intensity of Balmer emission lines and in the V/R ratio. It is shown that the MUSICOS 1989 observations preceded a new activity phase. Search for line-profile variations was performed with time-series analysis and with analysis of residuals. Weak blue-to-red and red-to-blue moving subfeatures with the same acceleration have been detected in the residuals. Their presence confirms that this star is seen under a moderate angle of inclination, in agreement with estimates based on fundamental stellar parameters. A frequency, associated with the moving subfeatures mentioned above, has been firmly established from time-series analysis and corresponds more closely, in the frame of non-radial pulsations, to a tesseral mode. Two other possible frequencies have been detected but need to be confirmed with new observations obtained over a longer time span. Despite additional spectra obtained at Haute Provence Observatory, it was not possible to confirm the previous value of the orbital period or the amplitude of the radial velocity curve of 48Per, and therefore it was concluded that it is premature to search for tidally-forced oscillations.

Nesme-Ribes, Meunier and Vince (1997) published the results of their investigations of Solar dynamics over cycle 19 using sunspots as traces. Namely, the angular velocities and meridional motions of cycle 19 sunspots observed at Meudon were investigated. They compared the obtained results with cycle 21 sunspot rotation properties. They found also a complex latitudinal meridional circulation pattern similar to what was observed on cycle 21 sunspots. They also corroborated the very small sunspot covariance (i.e. angular momentum transport via Reynolds stresses), which imposes a strong constraint on the source term of the differential rotation modeling.

Milani, Nobili and Knežević (1997) published an article concerning the consideration of stable chaos in the asteroid belt. The concept of chaotic dynamics has been successfully applied to the asteroids, leading to an understanding of the main features of phenomena such as the Kirkwood gaps and the depletion of the outer asteroid belt. Most asteroids are characterized by positive Lyapounov Characteristic Exponents (LCE), which means that their orbits are chaotic. Indeed, the striking fact is that for many of them the maximum LCE is very large, with a corresponding Lyapounov time shorter than 100,000 years, as reported in this work. This finding is in apparent contradiction with the overall orbital stability observed in numerical integration covering timespans orders of magnitude longer than the Lyapounov times. More importantly, it is in contradiction with the estimated astronomical age of these small planets. The phenomenon, of which other examples are already known, is referred to as stable chaos. Milani, Nobili and Knežević (1997) have studied in particular a region, that of the Veritas asteroid family, where other causes of chaotic motion are not relevant and stable chaos can be investigated as such in its various appearances. Stable chaos is found to be due to high order mean resonances with Jupiter in combination with secular perturbations on the perihelia of the asteroids. These perturbations cause a large number of critical arguments to get in and out of the resonances and can move the orbit from one high resonance to another, in a typical irregular behavior. Since chaos is driven by secular perturbations, it is no surprise that the Lyapounov times are very close to the timescales of these perturbations. The quasi integrals of motion of asteroids with very short Lyapounov times are less stable and a slow diffusion is observed in eccentricity and inclination. There is essentially no diffusion in semimajor axis, although variations are large. These asteroids can therefore be regarded as cases of stable chaos.

Knežević, Milani and Farinela (1997) published their results of the investigation of dangerous border of the 5:2 mean motion resonance. After the discovery that asteroid (2953) Vysheslavia, a Koronis family member, has a typical dynamical lifetime of the order of 10 Myr only against "falling" into the 5:2 Kirkwood gap and ending up into a hyperbolic orbit published by Milani and Farinella in 1995, Knežević, Milani and Farinela decided to repeat the same study for two other asteroids, 1991 UA<sub>2</sub> and 1993 FR<sub>58</sub>, lying also very close to the outer edge of the same resonance. The orbital elements of these bodies were not yet accurate enough and they appealed to observers, both professional and amateur, to get more astrometric data. Eight groups in three different countries carried out observations, and as a result the Minor Planet Center could derive updated, accurate orbits for both objects. In the considered paper they report on the preliminary results of their study. Whereas the long-term behaviour of

1991 UA<sub>2</sub> looks fairly regular and stable, 1993 FR<sub>58</sub> exhibits a typical "stable chaos" behavior; nevertheless, it does not end up into the resonance within a time span of 50 Myr. On the other hand, its fictitious clones, placed just  $3 - 4 \times 10^{-3}$  AU closer to the resonance, undergo large irregular semimajor axis changes, fall into the resonance and escape on a timescale  $< 1$  Myr.

The CCD measurements of 123 double stars with ST-6 camera attached to the Zeiss 65/1055 cm Refractor of the Belgrade Observatory, have been published by Popović and Pavlović (1997). Between October 1994 and July 1995 they took images of double and multiple stars. Images of 84 systems, i.e. 123 pairs, were obtained successfully. On the average each pair was taken 4.5 times and every image was measured by the authors.

Sadžakov, Dačić and Cvetković (1997), published an observational catalogue containing the positions of 351 stars situated in the vicinity of radio sources, worked out by differential method in the FK5 system. The (O-C) corrections to the positions of 267 fundamental stars used in the determination of the instrument parameters are also presented. The star positions are derived from observations with the Belgrade Large Meridian Circle during 1991-1993.

Two review articles (invited lectures of the 18th Int. Symp. on the Physics of ionized gases) have been published in 1997 in the book *The Physics of Ionized Gases*. One by Popović and Dimitrijević (1997) on the modified semiempirical theory and its application to lines from complex spectra, and the other in the same book by Mihajlov and Dimitrijević (1997), on processes involving ion atom complexes in weakly ionized laboratory and astrophysical plasmas.

During 1997, two M.Sc. theses have been finished. The M.Sc. thesis of Goran Damljanović (1997) presents an analysis of the Belgrade latitudes changes for the period 1949-1985, and M.Sc thesis of Bora Jovanović concerns approximated ephemeris in dynamical astronomy.

The "small Refractor", that is the ZEISS 20/302 cm. equatorial, has been employed in the planned observations of the radiation flux of the 31 Solar spectral line and the measurements of their equivalent widths. The instrumental profile of the spectrograph has been determined by means of a laser source. The preparations for the 1999 Solar eclipse observation have been continued.

The ASKANIA 13.5/160 cm. astrograph rendered its services in the observations of 6 comets and 3 asteroids with the aid of CCD ST-6 and ST-8 cameras. The results have been announced in several IAU Circulars.

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## 2. EQUIPMENT AND FACILITIES

Of what has been executed during 1997 at Belgrade Observatory, including the purchases realized, of particular importance is the following:

- Purchased: a computer Pentium 233 MHz, five computers Pentium 166 MHz, one computer Pentium 133 MHz and one Multimedia Notebook Pentium 120 MHz.
- Finalization of the reconstruction works (less the dome reparation) on the "Large Refractor" pavilion.
- Photomultiplier EMI 9558QB, a gift of the University of Florida, USA and the Baja Observatory, Baja, Hungary.
- Continuation of putting in order of the Observatory's Library, in the course of which 589 books have been bound in hard covers.
- We also note that the new CCD ST-8 camera, ordered in 1996, was commissioned.

## 3. BUDGET

Incomes in dinars in the period January - December 1997

1. Public incomes – from the Ministry of Science and Technology of Serbia .....	2 189 985.87
2. Incomes from the sales inside Yugoslavia .....	3 500.00
3. Other special incomes .....	51 963.14
 TOTAL .....	 2 245 449.01



I EXPENDITURES ON INVESTMENTS AND INVESTMENT  
MAINTENANCE OF WORKING MEANS

Kind of work	Performer	Amount in dinars
1. Final works on the Large Refractor adaptation (less the dome reparation)	"TEHNIKUM" Zemun .....	74 266.00
2. Hydroinsulation of the roof of the main building, white-washing and urgent interventions	"TEHNIKUM" Zemun .....	39 306.00
3. Maintenance and reparation of the working means	"ALBION" Beograd ..... SBMR - Rakić Beograd .....	2 944.00 8 012.00
4. Reparations of the Training pavillion, mechanical cleansing of the cauldrons, and urgent interventions on the main building	"RAVNICA" Beograd .....	29 820.00
5. Making of the crystal oscillators for Time-keeping Service	Institute "MIHAJLO PUPIN" Beograd .....	12 480.00
6. Works on the heating system	"ENERGOLUX" Beograd .....	3 992.00
Total	.....	170 820.78

II EXPENDITURES ON THE EQUIPMENT PURCHASES IN 1997

Name	Furnisher	Amount in dinars
1. Computer "PENTIUM" 166 MHz	"JUGODATA" Beograd .....	6 506.00
2. Computer "PENTIUM" 233 MHz	"SEKVENCA" Beograd .....	9 200.00
3. Computer "PENTIUM" 166 MHz	"JUGODATA" Beograd .....	5 547.00

BELGRADE ASTRONOMICAL OBSERVATORY IN 1997

4. Computer "PENTIUM" 166 MHz	"JUGODATA"	
	Beograd .....	6 804.00
5. Computer "PENTIUM" 166 MHz	"SEKVENCA"	
	Beograd .....	8 690.00
6. Computer "PENTIUM" 166 MHz	"SEKVENCA"	
	Beograd .....	8 900.00
7. Computer "PENTIUM" 133 MHz	"OFSET PRINT"	
	Beograd .....	5 328.00
8. Multimedia Notebook PENTIUM 120 MHz (purchased by V. Protić- Benišek)	"FL COMPUTER" DIVISION"	
	Beograd .....	25 850.00
9. Printer Epson LQ 570	"OFSET PRINT"	
	Beograd .....	2 923.00
10. Upgrading of Computer Equipment	"SEKVENCA"	
	Beograd .....	16 459.64
	Total .....	96 207.64

III EXPENDITURES ON BOOKS AND JOURNALS BINDING  
IN HARD COVERS IN 1997

Number of books bound in hard cover	Furnisher	Amount in dinars
1. 589 books	KKR "PAŠTRMAC"	
	Beograd .....	20 118.00
	Total .....	20 118.00

IV EXPENDITURES ON PRINTING OF PUBLICATIONS  
OF THE ASTRONOMICAL OBSERVATORY IN 1997

Publication	Printed by:	Amount in dinars
1. Bull. Astron. Belgrade No 155	"PORTAL Co"	
	Beograd .....	8 400.00
2. Bull. Astron. Belgrade No 156	"PORTAL Co"	
	Beograd .....	12 850.00

M. S. DIMITRIJEVIĆ

3. Publ. Astron. Obs. Belgrade No 55	"PORTAL Co"	
	Beograd .....	7 500.00
4. Publ. Astron. Obs. Belgrade No 56	"PORTAL Co"	
	Beograd .....	9 990.00
5. Publ. Astron. Obs. Belgrade No 57 (Partly financed by Faculty of Physics)	"PORTAL Co"	
	Beograd .....	2 250.00
6. Publ. Astron. Obs. Belgrade No 58	"PORTAL Co"	
	Beograd .....	9 350.00
Total	.....	50 340.00

V EXPENCES ON MATERIAL, ENERGY, SPARE PARTS  
AND SMALL STOCKS

1. Expences on coal	"ČAUŠ KOMERC"	
	Beograd .....	46 019.95
2. Expences on electric energy	"ELEKTRODISTRIBUCIJA"	
	Beograd .....	18 365.92
3. Other expences	.....	86 329.44
Total	.....	150 715.31

VI CURRENT SERVICES

1. Post and telephone services	.....	57 246.16
2. Expences on photocopying outside the Observatory	.....	8 567.00
3. English courses for the staff	.....	5 311.00
4. Other expences	.....	144 693.53
Total	.....	215 818.19

VII SPECIAL EXPENDITURES (TAXES, MEALS FOR THE STAFF, TRAVEL FARES  
CONTRIBUTIONS CHARGING THE EMPLOYER,  
ANNUAL VACATION REIMBURSEMENT

1. City transport expences .....	51 972.40
2. International collaboration and conferences .....	43 612.82
3. Meals for the staff .....	71 689.99
4. Annual vacation reimbursement, other supports of the staff, prizes .....	56 183.95
5. Contributions charging the employer .....	273 748.16
6. Other expences .....	111 996.30
 Total .....	 614 613.60

VIII GROSS SALARIES

Total .....	925 389.45
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GRAND TOTAL (I+II+III+IV+V+VI+VII+VIII)	2 244 022.97
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Incomes - Expenditures Difference	+ 1 426.04
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2. Jovanović, B.: 1997 *APROKSIMATIVNO PREDSTAVLJANJE EFEMERIDA U DINAMIČKOJ ASTRONOMIJI (APROXIMATIVE PRESENTATION OF EPHEMERIS IN DYNAMICAL ASTRONOMY)*, M.Sc Thesis, Mathematical Faculty, Belgrade

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9. Protić-Benišek, V., Benišek, V.: 1997 *OBSERVATIONS OF THE COMET 81P/WILD 2*, Minor Planet Circ. No 29341.
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22. Zulević, D.: 1997 *NEW ORBITS ADS 805*, IAU Commission 26, Information Circular No 132, 1.

#### 4.12. CONTRIBUTIONS IN NEWSPAPERS, PROFESSIONAL AND POPULARIZING LITERATURE

1. Milan M. Ćirković  
Kosmički deuterijum  
(Cosmical deuterium)  
Vasiona, br. 4, 1997, 76.
2. Milan M. Ćirković  
Apsorpcioni sistemi u spektrima kvazara - prozor u prošlost  
(Absorption systems in quasar spectra - a window in the past)  
Vasiona, br. 5, 1996, 108.
3. Milan M. Ćirković  
Robert H. Dike: In Memoriam  
(Robert H. Dicke: In Memoriam)  
Vasiona, br. 1-2, 1997, 3.
4. Milan M. Ćirković  
Uspon i pad teorije večnog stanja  
(The rise and fall of the steady state theory)  
Vasiona, br. 3, 1997, 53.
5. Miodrag Dačić  
Obdanice  
(The daylight durations)  
Demokratija, 6.II.1997.
6. Miodrag Dačić  
Obdanice  
(The daylight durations)  
Demokratija, 28.II.1997.
7. Miodrag Dačić  
Obdanice  
(The daylight durations)  
Demokratija, 29-30.III.1997.
8. Miodrag Dačić  
Šta bi bilo...  
Kad bi Zemljina osa rotacije ležala u ravni putanje oko Sunca

(What will be...

If Earth's rotation axis is in the plane of its trajectory around Sun)

Politikin Zabavnik, 10.I.1997.

9. Milan S. Dimitrijević  
Nastanok i razvoj na vselenata  
(The origin and the development of the Universe)  
Astronomski Almanah, Makedonsko Astronomsko društvo i Institut za fiziku, Prirodno - Matematički fakultet, Skopje, 1997, 29.
10. Milan S. Dimitrijević  
Šta bi bilo ...  
Da je Sunce dva puta bliže centru galaksije  
(What will be...  
If the Sun is two times closer to the center of Galaxy)  
Politikin Zabavnik, br. 2349, 14.II.1997, 50.
11. Milan S. Dimitrijević  
Crne rupe  
(Black holes)  
Vasiona, br. 5, 1997, 101.
12. Kosmologija, kosmogonija, univerzum  
Mala antologija  
(Cosmology, Cosmogony, Universe  
Little antology)  
Izabrao (Choosen by): Milan S. Dimitrijević  
Crteži (Illustrations): Vladimir M. Dimitrijević  
Vasiona, br. 5, 1997, 105.
13. Milan S. Dimitrijević  
Dostignuća srpskih astronoma u 1995. godini  
(Achievements of serbian astronomers in 1995)  
Vasiona, br. 5, 1997, 115.
14. Milan S. Dimitrijević  
XVIII SPIG  
Astrofizička plazma na XVIII letnjoj školi i međunarodnom simpozijumu o fizici  
jonizovanih gasova  
XVIII SPIG  
(Astrophysical plasma on XVIII summer school and international symposium on  
the physics of ionized gases)  
Kotor 2-6 IX 1996  
Vasiona, br. 5, 1997, 134.
15. Milan S. Dimitrijević  
Šta bi bilo ...  
Da je Sunce dva puta teže

- (What will be...  
If the Sun is two times heavier)  
Politikin Zabavnik, br. 2350, 21.II.1997, 11.
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Nobelova nagrada za fiziku 1996. i veliki praskovi u tečnom helijumu  
(The Nobel prize for Physics for 1996 and big bangs in liquid helium)  
Vasiona, br. 1-2, 1997, 2.
17. M.S.Dimitrijević  
Dostignuća srpskih astronoma u 1996. godini  
(Achievements of Serbian astronomers in 1996)  
Vasiona No 3, 1997, 61.
18. Milan S. Dimitrijević  
Crne rupe  
(Black holes)  
Naše Stvaranje, XLV, Nova serija 3/97, Leskovac 1997, 41.
19. Milan S. Dimitrijević  
JENAM 97 - Konferencija Evropskog astronomskeg društva  
(JENAM 97 - The conference of European Astronomical Society)  
Vasiona No 4, 1997, 85.
20. Milan S. Dimitrijević  
Mlečni put  
(Milky Way)  
Školarac, Br. 11, Mart 1997, 32.
21. Milan S. Dimitrijević  
Crna rupa  
(Black hole)  
Školarac, Br. 12, April 1997, 32.
22. Milan S. Dimitrijević  
Predgovor  
(Foreword)  
Milutin Milanković  
Nebeska mehanika  
(Celestial Mechanics)  
Istorija astronomske nauke  
(The history of astronomical science)  
Izabrana dela 3, redaktor M.S. Dimitrijević, Zavod za udžbenike i nastavna sred-  
stva, Beograd, 1997, 7.
23. Milan S. Dimitrijević  
Nenad Dj. Janković: Otkrivanje vasiona  
(Nenad Dj. Janković: The discovering of Universe)  
Flogiston, br. 5 (1997) 271



24. Milan S. Dimitrijević  
Komete  
(Comets)  
Školarac, Br. 13, Maj, 1997, 32.
25. Milan S. Dimitrijević  
Halejeva kometa  
(Halley's comet)  
Školarac, Br. 14, Jun, 1997, 32.
26. Milan S. Dimitrijević  
u: Izvodi iz recenzija  
Vlado Milićević  
Sjaj zvezde Milanković  
Rudarsko-geološki fakultet, Institut za geofiziku, Beograd, 1997., zadnja korica  
(back cover).
27. Milan S. Dimitrijević  
Merkur  
(Mercury)  
Školarac, Br. 15, Septembar 1997, 24.
28. Milan S. Dimitrijević  
Venera  
(Venus)  
Školarac, Br. 16, Oktobar 1997, 24.
29. Milan S. Dimitrijević  
Mars  
(Mars)  
Školarac, Br. 17, Novembar 1997, 24.
30. Milan S. Dimitrijević, Miodrag Dačić, Zorica Cvetković  
Šetnja komete Hejl-Bop među zvezdama  
(The walk of the comet Halle-Bopp among stars)  
Vasiona, br. 5, 1997, 120.
31. Milan S. Dimitrijević  
Izvod iz recenzije  
(From the recension)  
Dobrosav Bjeletić: Slovo o velikanima (A speach on great men), Budućnost, Novi  
sad, 1997, treća strana omota korica (the third page of the cover envelope).
32. Silvana Nikolić  
Astronomija u istraživačkoj stanici Petnica 1992-1995  
(Astronomy in the Petnica research center 1992-1995)  
Vasiona, br. 1-2, 1997, 7.

33. Pakvor, I.: 1997,  
Milan Mijatov (1933–1966)  
Bull. Astron. Belgrade **155**, 1997, 1.
34. Luka Č. Popović  
Komete juče, danas, sutra  
(Comets yesterday, today, tomorrow)  
Zbornik predavanja sa Republičkog seminara o nastavi fizike, Društvo fizičara Srbije, Podružnica Niš, Niš, 1997, 38.
35. Luka Č. Popović, Ištvan Vince  
XXIII Generalna skupština Međunarodne astronomske unije  
(XXIII General Assembly of the International Astronomical Union)  
Vasiona, br. 4, 1997, 81.
36. Dr Petar Rakin, Dr Milan Dimitrijević  
Reč urednika broja  
(The word of editors of this number)  
Fullerenes and Nanotubes Review, Vol. 1, No. 2-3, (1997), III.
37. Sofija Sadžakov  
Merenje vremena u astronomiji  
(The time measurement in astronomy)  
Tehničke novine, br. 1, 1997.
38. Sofija Sadžakov  
Uloga astronomije u saradnji sa ostalim naukama  
(The role of astronomy in colaboration with other sciences)  
Tehničke novine, br. 2, 1997.
39. Sofija Sadžakov  
Velikani naše nauke: Milutin Milanković - život i delo  
(Great men of our science: Milutin Milanković - the life and works)  
Tehničke novine, br. 3, 1997.

#### 4.13. VIDEO TAPES

1. Milan S. Dimitrijević  
SVET KOMETA  
(WORLD OF COMETS)  
Zavod za udžbenike i nastavna sredstva, Beograd 1997.
2. Milan S. Dimitrijević  
PORODICA PLANETA  
(FAMILY OF PLANETS)  
Zavod za udžbenike i nastavna sredstva, Beograd 1997.

3. Milan S. Dimitrijević  
ASTRONOMSKA POČETNICA  
(ASTRONOMY FOR BEGINNERS)  
Zavod za udžbenike i nastavna sredstva, Beograd 1997.

#### 4.14. INTERVIEWS

1. Dušan Cicvara  
Dr Milan Dimitrijević, astronom i fizičar, direktor Astronomske opservatorije  
Astrologija nije nauka  
(Dr Milan Dimitrijević, astronomer and physician, director of the Astronomical observatory  
Astrology is not a science)  
Naša Zvezdara, Br. 6 (1977), 16.
2. Saša Važić  
Dr Milan Dimitrijević predsednik Astronomskog društva "Rudjer Bošković" pred 110-godišnjicu Astronomske opservatorije  
Pet milijardi godina stabilnog života  
(Dr Milan Dimitrijević president of the Astronomical society "Rudjer Bošković" on the eve of 110th anniversary of the Astronomical observatory  
Five billions years of steady life)  
Galaksija, No. 265, 1977, 38.

#### 4.15. ARTICLES IN NEWSPAPERS ON ASTRONOMICAL OBSERVATORY AND ACTIVITY OF ITS FELLOWS

1. Izbor redovnih, dopisnih, članova van radnog sastava i inostranih članova  
(Election of ordinary, extraordinary and members out of working staff)  
Godišnjak C II za 1995, SANU, Beograd 1995, 116.
2. Savezna vlada u funkciji mira, stabilnosti i razvoja  
(Izveštaj o radu od marta 1993. do decembra 1996. godine)  
(Federal government in function of peace, stability and development  
Report from March 1993 up to December 1996)  
Savezna republika Jugoslavija, Savezna vlada, Beograd 1997, 100.
3. V. Pavlović  
Kometa "Hejl-Bop" vidi se golim okom na našem nebu  
Ukras iz svemira  
(Naked eye Comet Halle-Bopp on our sky  
The decoration from space)  
Veernje Novosti (izdanje za unutrašnjost) 1.III.1997, 18.

4. Slobodanka Andrić  
Najjači sjaj Hejl-Bopove komete  
(The largest luminosity of comet Halle-Bopp)  
Politika 3.III.1997, 19.
5. Književne večeri, tribine, promocije  
Otkrijte Beograd (podlistak)  
(Literary evenings, tribunes, promotions  
Discover Belgrade (addendum))  
Naša borba, 10. III. 1997.
6. Maja V. Stanojković, Igor Ivanović  
Astronomska opservatorija u Beogradu proslavlja 110. rođendan  
Nebeske oči sa Zvezdare  
(Astronomical observatory in Belgrade celebrates the 110th birthday  
Celestial eyes from Zvezdara)  
Politika ekspres, 24. III. 1997.
7. V.D.P.  
Obeležena 110-godišnjica Astronomske opservatorije na Zvezdari  
Decenija sa zvezdama  
(Celebrated 110th anniversary of Astronomical observatory on Zvezdara  
A decade with stars)  
Večernje Novosti, 8.IV.1997, 29
8. B.B.  
Povodom 110 godina Astronomske opservatorije  
Počeo naučni skup astronoma i kosmologa  
(On the occasion of 110th anniversary of Astronomical observatory  
Started scientific meeting of astronomers and cosmologists)  
Politika, 8.IV.1997, 23.
9. Lj. Gojgić  
Miladin Ševarlić, aktivista JUL-a  
"Sekao sam drveće koje mi je smetalo"  
Demokratija, 9.IV.1997, 10.
10. Lj.G.  
Sto deset godina Astronomske opservatorije na Zvezdari  
Planeta Srbija  
(Hundred years of Astronomical observatory on Zvezdara  
Planetoid Serbia)  
Demokratija, 10.IV.1997, 23.  
(na vrhu stranice pogrešno označeno 9.IV)
11. Marco Zoppi  
Minutes of the International Committee Meeting  
in Spectral Line Shapes Vol. 9, eds. M. Zoppi, L. Ulivi, AIP Conf. Proc., 386 (1997)  
551.

12. dr Dragutin Djurović  
Zbog partijskih simpatija ode park  
Demokratija, 17.IV.1997, 12.
13. Saša Važić  
Jubilej 110 godina Astronomske opservatorije, uveličala kometa veka Hejl-Bop na našem nebu  
(The 110 year jubilly of Astronomical observatory, decorated the comet of the century, Halle-Bopp, on our sky)  
Ogledalo našeg kraja, april, br. 66, 1997, Beograd - Batajnica, 13,
14. Saša Važić  
Princ Tomislav Karadjordjević u "Ogledalu"  
Bez belog konja i sa krunom "na čišćenju"  
(Prince Tomislav Karadjordjević in: "Ogledalo"  
Without a white horse and with the crown "on cleaning")  
Ogledalo našeg kraja, april, br. 66, 1997, Beograd - Batajnica, 14,
15. Jelena Milogradov-Turin  
XI konferencija jugoslovenskih astronoma  
(XI Conference of yugoslav astronomers)  
Vasiona, Br. 1-2, 1997, 33.
16. Jelena Milogradov-Turin  
Astronomija u matematičkom institutu u proleće 1997  
(Astronomy in Mathematical Institute in the spring of 1997)  
Vasiona, Br. 1-2, 1997, 36.
17. Milan Jeličić  
Zatvorena kafana "Mala astronomija"  
(Closed restaurant "Little Astronomy")  
Vasiona, Br. 1-2, 1997, 34.
18. M. Vukadinović  
Monografije zadužbine "Andrejević"  
Put u svet nauke  
(Monographies of the "Andrejević" foundation  
A way to the world of science)  
Politika, 11.06.1997, 24.
19. Čitulja za Dojnu Petrović  
Politika, 13.08.1997, 37.
20. Naučni program na televiziji  
Politika, 28.08.1997, 43.
21. Saša Važić  
Tajna crvene planete  
(The secret of red planet)  
Ogledalo našeg kraja, 71, (1977), 24.

22. Naučni skup "Vrednovanje naučnog rada"  
(Scientific meeting "The evaluation of scientific work")  
Godišnjak C III za 1996, SANU, Beograd 1996, 140.
23. Obaveštenje o promociji izdanja Opservatorije na Sajmu knjiga (Od štanda do štanda)  
Politika, 23.10.1997, 27.
24. Jelena Milogradov-Turin  
Jedan prilog istoriji Katedre za astronomiju univerziteta u Beogradu  
(A contribution to the history of the Department of Astronomy of the University of Belgrade)  
U: Razvoj astronomije kod Srba, In: Development of Astronomy among Serbs, eds. M.S. Dimitrijević, J. Milogradov-Turin, L. Č. Popović, Publ. Astron. Obs. Belgrade, No. 56, (1997), 65.
25. Vukota Babović  
Multidisciplinarnost u razvoju Belerofonta  
(Multidisciplinary development of Belerofont Observatory)  
U: Razvoj astronomije kod Srba, In: Development of Astronomy among Serbs, eds. M.S. Dimitrijević, J. Milogradov-Turin, L. Č. Popović, Publ. Astron. Obs. Belgrade, No. 56, (1997), 95.
26. Samir Salim  
Astronomija u istraživačkoj stanici Petnica  
(Astronomy in the Petnica Science Center)  
U: Razvoj astronomije kod Srba, In: Development of Astronomy among Serbs, eds. M.S. Dimitrijević, J. Milogradov-Turin, L. Č. Popović, Publ. Astron. Obs. Belgrade, No. 56, (1997), 101.
27. Dragan Ž. Gajić  
Astronomija i astrofizika na univerzitetu u Nišu  
(Astronomy and astrophysics at University of Niš)  
U: Razvoj astronomije kod Srba, In: Development of Astronomy among Serbs, eds. M.S. Dimitrijević, J. Milogradov-Turin, L. Č. Popović, Publ. Astron. Obs. Belgrade, No. 56, (1997), 109.
28. Miodrag Sekulić  
Astronomsko društvo "Alfa" - Niš  
(Astronomical Society "Alfa" - Niš)  
U: Razvoj astronomije kod Srba, In: Development of Astronomy among Serbs, eds. M.S. Dimitrijević, J. Milogradov-Turin, L. Č. Popović, Publ. Astron. Obs. Belgrade, No. 56, (1997), 111.
29. Jelisaveta Arsenijević, Aleksandar Kubičela, Armen Oskanjan  
Oskanjan - Osnivanje i rad Grupe za astrofiziku  
(Oskanyan - The foundation and further work of the Astrophysical group)

U: Razvoj astronomije kod Srba, In: Development of Astronomy among Serbs, eds. M.S. Dimitrijević, J. Milogradov-Turin, L. Č. Popović, Publ. Astron. Obs. Belgrade, No. 56, (1997), 135.

30. Jelena Milogradov-Turin  
Astronomija na seminarima za nastavnike u Srbiji  
(Astronomy in seminars for teachers in Serbia)  
U: Razvoj astronomije kod Srba, In: Development of Astronomy among Serbs, eds. M.S. Dimitrijević, J. Milogradov-Turin, L. Č. Popović, Publ. Astron. Obs. Belgrade, No. 56, (1997), 229.
31. Dušan Kanazir  
Proslava 110 godina Astronomske opservatorije 7.4.1997  
Govor Ministra za nauku i tehnologiju, akademika Dušana Kanazira  
(Celebration of the 110th anniversary of the Belgrade Astronomical Observatory April 7, 1997)  
Address of the Minister for Science and Technology, academician Dušan Kanazir  
U: Razvoj astronomije kod Srba, In: Development of Astronomy among Serbs, eds. M.S. Dimitrijević, J. Milogradov-Turin, L. Č. Popović, Publ. Astron. Obs. Belgrade, 56, 1997, 5.
32. Milan Jeličić  
110 godina Astronomske opservatorije  
(110 years of the Astronomical observatory)  
Vasiona No 4, (1997) 101.
33. Milan Jeličić  
"Bilten" na Internetu  
("Bulletin" on Internet)  
Vasiona No 4, (1997) 101.
34. Jelena Milogradov-Turin  
Rumunski astronomi u Jugoslaviji  
(Romanian astronomers in Yugoslavia)  
Vasiona No 4, (1997) 102.
35. Miodrag Sekulić  
Aktivnosti Astronomskog društva "Alfa" iz Niša  
(Activities of the Astronomical society "Alfa" from Niš)  
Vasiona No 4, (1997) 104.
36. Darko Djokić  
Valjevski astronomski susreti  
(Astronomical meetings in Valjevo)  
Vasiona No 4, (1997) 101.

4.16. UNPUBLISHED COMMUNICATIONS ON CONFERENCE  
PROGRAMMES AS INVITED LECTURES  
OR ORAL PRESENTATIONS

1. Z. Knežević  
ORBIT MAINTENANCE OF THE LOW LUNAR POLAR ORBITER  
II National conference of Italian celestial mechanicians, L'Aquila, 21-25.04.1997.
2. V. Protić-Benišek  
MILUTIN MILANKOVIĆ - SERBIAN SCIENTIST AND THINKER - FATHER  
OF ASTRONOMICAL THEORY OF PALEOCLIMATE  
XX International Congress of History of Sciences, 20-26.07.1997, Liège, Belgium.
3. M. S. Dimitrijević  
STARK BROADENING DATA FOR FUSION, LABORATORY AND ASTRO-  
PHYSICAL PLASMAS. PRESENT STATUS AND PERSPECTIVES  
IAEA Advisory Group Meeting on "Technical Aspects of Atomic and Molecular  
Data Processing and Exchange", 21-22.07.1997, Vienna.
4. V. Protić-Benišek  
IZ STUDIJE O PETRU MUZENU  
(FROM A STUDY ON PETAR MUZEN)  
Ruska emigracija u srpskoj i drugim slovenskim kulturama (Russian emigration in  
Serbian and other slavic cultures), Belgrade, 20-22.11. 1997
5. M. S. Dimitrijević  
SOFIJA DIMITRIJEVNA KARAULOVA - PRVI ZUBNI LEKAR U PIROTU,  
VRANJU I LESKOVCU  
(SOFIYA DIMITRIJEVNA KARAULOVA - THE FIRST DENTIST IN PIROT,  
VRANJE AND LESKOVAC)  
Ruska emigracija u srpskoj i drugim slovenskim kulturama (Russian emigration in  
Serbian and other slavic cultures), Belgrade, 20-22.11 1997



## 5. LECTURES GIVEN BY THE OBSERVATORY'S FELLOWS AND GUESTS

### 5.1. LECTURES HELD AT THE ASTRONOMICAL OBSERVATORY

1. 10.04.1997  
Armen Oskanyan (Byurakan, Armenia)  
Novi metod fotografskog posmatranja eruptivnih zvezda u Plejadama i preliminarna distribucija eruptivnih zvezda  
(New method of the photographic observation of eruptive stars in Pleiades and preliminary distribution of eruptive stars)
2. 14.05.1997  
Milan S. Dimitrijević  
Kanon osunčavanja Zemlje i njegov uticaj na ledena doba - životno delo Milutina Milankovića  
(Canon of the Earth insolation and insolation influence on ice ages - the principal work of Milutin Milanković)
3. 14.05.1997  
Milan S. Dimitrijević  
Šetnja po Sunčevom sistemu  
(Walking across the Solar system)  
(for guests from Kikinda Secondary school)
4. 21.05.1997  
Ljiljana Skuljan  
R Coronae Borealis zvezde: Posmatranje i teorija  
(R Coronae Borealis stars: Observation and theory)
5. 28.05.1997  
Luka Č. Popović  
Oblik emisionih linija kod Sy 1 galaksija i struktura emisione oblasti  
(Emission lines shape at Sy 1 galaxies and structure of emission region)
6. 4.06.1997  
Anatolij A. Mihajlov  
Procesi radijacione razmene naelektrisanja pri sudarima jona i atoma pri srednjim sudarnim procesima

- (Processes of radiative charge exchange at ion - atom collisions at average collisional processes)
7. 11.06.1997  
Gojko Djurašević  
Analiza krivih sjaja nekih interesantnih tesnih dvojnih sistema  
(Light curves analysis for some interesting close binary systems)
  8. 18.06.1997  
Milan Ćirković  
Interakcija Galaktičkih podsistema i apsorpcione linije u spektrima kvazara  
(Interaction of Galactic subsystems and absorption lines in quasar spectra)
  9. 25.06.1997  
Irina Vladimirovna Petrovskaya  
Kinematika i stroenie galaktiki iz nejtralnogo vodoroda  
(Cinematics and structure of galaxy from neutral hydrogen)
  10. 22.10.1997  
Milan S. Dimitrijević  
Difuzne trake u astrofizičkim spektrima i fulereni  
(Diffuse bands in astrophysical spectra and fullerenes)
  11. 29.10.1997  
Miodrag Dačić  
Greške položaja zvezda u Boškovićevim odredjivanjima širine i azimuta  
(Star position errors in Bošković's determination of latitude and azimuth)
  12. 5.11.1997  
Ištvan Vince  
Pripreme za posmatranja pomračenja Sunca od 11. 8. 1999. godine  
(Preparations for 11. 8. 1999. Solar eclipse observations)
  13. 14.05.1997  
Ljubinko M. Ignjatović, Anatolij A. Mihajlov  
Nesimetrični jon - atomski sudari kao izvori UV emisije/apsorpcije u delimično jonizovanoj plazmi  
(Non symmetrical ion - atom collisions as UV emission/absorption sources in partially ionized plasma)
  14. 19.11.1997  
Luka Č. Popović  
Spektralne linije sa dva pika kod aktivnih galaksija: Dokaz dvojnosti njihovih jezgara?  
(Spectral lines with two picks at active galaxies: A prouve of the duality of their nuclei?)

## 5.2. LECTURES GIVEN BY THE OBSERVATORY'S FELLOWS OUTSIDE THE ASTRONOMICAL OBSERVATORY

1. 11.01.1997  
Milan S. Dimitrijević  
Razvoj astronomije kod Srba  
(Development of astronomy among Serbs)  
Ciklus: Istorijska i epistemološka istraživanja u prirodnim naukama (Historical and epistemological researches in Natural sciences).  
Institute of Physics, Zemun
2. 4.03.1997  
Vojislava Protić-Benišek  
"Kroz vasionu i vekove" Milutina Milankovića  
(*"Across the Universe and centuries"* of Milutin Milanković)  
Seminar za istoriju i filozofiju matematike  
(Seminar for history and philosophy of mathematics)  
Mathematical Institute of Serbian Academy of Sciences and Arts, Belgrade.
3. 11.03.1997  
Milan S. Dimitrijević  
Teorija relativnosti i njen odziv kod Srba  
(Theory of relativity and its reflection among Serbs)  
Seminar za istoriju i filozofiju matematike  
(Seminar for history and philosophy of mathematics)  
Mathematical Institute of Serbian Academy of Sciences and Arts, Belgrade.
4. 20.03.1997  
Vojislava Protić-Benišek  
Mala tela Sunčevog sistema  
(Small bodies of the Solar system)  
Valjevo Astronomical meetings, Secondary school in Valjevo
5. 28.03.1997  
Milan S. Dimitrijević  
Komete - svedoci prošlosti  
(Comets - witnesses of the past)  
Rotary club Belgrade
6. 29.05.1997  
Milan S. Dimitrijević  
Kako i zašto nastaju ledena doba  
(Životno delo Milutina Milankovića)  
(How and why originate ice ages  
Principal work of Milutin Milanković)  
Rotary klub Belgrade

7. end of May 1997  
Milan M. Ćirković  
History of the Halo Gas and QSO Absorption Systems  
State University of New York, Stony Brook, New York, USA
8. 6.06.1997  
Milan S. Dimitrijević  
Da li smo sami u kosmosu?  
(Are we alone in the Universe?)  
Secondary school in Apatin
9. 20.06.1997  
Milan S. Dimitrijević  
Stounhendž neolitska opservatorija  
(Stonhendge neolithic observatory)  
XV Belgrade Astronomical weekend
10. 21.06.1997  
Milan M. Ćirković  
Hablovo duboko polje - putovanje na početak vremena  
(Hubble deep field - A journey to the begining of time)  
XV Belgrade Astronomical weekend
11. 29.06.1997  
Slobodan Ninković  
Mlečni put i njegova rotacija  
(Milky way and its rotation)  
Petnica Science Center, Valjevo
12. 14.07.1997  
Milan M. Ćirković  
Avanture u Lajmanovoj šumi  
(Adventures in Lyman wood)  
Department of Astrophysics, Mathematical Faculty, Belgrade
13. 16.08.1997  
Milan M. Ćirković  
Galaksije: Savremeni pogledi  
(Galaxies: Actual points of sight)  
Department of Astrophysics, Mathematical Faculty, Belgrade
14. 10.09.1997  
Zoran Knežević  
Chaos and its consequences in the asteroidal motion  
Istituto Astronomico e Geofisico, Sao Paolo, Brasil
15. 17.09.1997  
Zoran Knežević  
Chaos and its consequences in the asteroidal motion  
University of Sao Paolo, Sao Paolo, Brasil

16. 23.09.1997  
Zoran Knežević  
Theory of motion of a low lunar polar orbiter and orbit maintenance strategies  
Observatorio Nacional, Rio de Janeiro, Brasil
17. 29.09.1997  
Zoran Knežević  
Chaos and its consequences in the asteroidal motion  
Universidade Estadual Paulista Faculdade de Engenharia, Campus de Guaratinguete, Rio de Janeiro, Brasil
18. 15.10.1997  
Ištvan Vince  
Programi ekspedicije za pomračenje Sunca 11.08.1999  
(Programs of expedition for Solar eclipse of 11.08.1999)  
Faculty of Physics, Belgrade
19. 18.10.1997  
Slobodan Ninković  
Hemija kosmosa  
(The chemistry of Universe)  
Celebration of the 100th anniversary of Serbian chemical society, Gallery of Serbian Academy of Sciences and Arts, Belgrade
20. 23.10.1997  
Milan S. Dimitrijević  
Nobelova nagrada za fiziku za 1997.  
(Nobel prize for physics for 1997)  
Rotary club Belgrade
21. 15.10.1997  
Ištvan Vince  
Sunce  
(The Sun)  
Amateur Astronomical Society "Alfa", Niš
22. 14.11.1997  
Ištvan Vince  
Sunce najbliža zvezda  
(Sun the closest star)  
Center of Culture (Kulturni centar) Bečej
23. 29.11.1997  
Luka Č. Popović  
Putovanje kosmosom  
(A journey across the Universe)  
Secondary school "Nikola Tesla", Derventa, Republic Srpska

## 6. TV AND RADIO EMISSIONS

1. Cele godine M. Dačić je davao obdanice u Jutarnjem programu na Radio stanici "Studio B"  
All year round, M. Dačić presented data on the duration of day and night, in the Morning programme of the Radio station "Studio B"
2. U proseku jednom mesečno I. Vince učestvuje u radio emisiji "Chip" Novosadske televizije na madjarskom jeziku u redakciji Jožefa Vereša (József Vörös) sa temom "Novosti u astronomskim istraživanjima". "Chip" se emituje svake srede od 17h do 17h 30m na 90.5 MHz i 92.5 MHz.  
Once a month in average, I. Vince participated in radio emission "Chip", of the Novi Sad television on hungarian language edited by József Vörös. The title is "News in astronomical research". "Chip" is emitted every wednesday from 17h up to 17h 30m on 90.5MHz and 92.5MHz.
3. 25.03.1997 na TV Studiu B, 1.03.1997 na TV Beogradu III i 7.04.1997 na Radio stanici "Studio B", V. Protić-Benišek je učestvovala u programu u vezi sa kometom Hejl-Bop i 110 godišnjicom Astronomske opservatorije.  
25.03.1997 on TV Studio B, 1.03.1997 on TV Beograd III and 7.04.1997 on Radio station "Studio B", V. Protić-Benišek participated in programme, concerning Halle-Bopp comet and 110 anniversary of Astronomical Observatory.
4. M.S. Dimitrijević, J. Milogradov-Turin, L.Č. Popović, V. Čelebonović, Lovci na planete, Naučni forum, TV Beograd II, 23.01.1997, 21h50m-22h55m.  
M.S. Dimitrijević, J. Milogradov-Turin, L.Č. Popović, V. Čelebonović, Hunters on planets, Scientific forum, TV Beograd II, 23.01.1997, 21h50m-22h55m.
5. 19.02.1997, Beogradska razglednica (gost Vojislava Protić-Benišek), TV Studio B.  
19.02.1997, Belgrade picture postcard (guest Vojislava Protić-Benišek), TV Studio B.
6. 21.02. 1997, 9h-9h 30m Program za mlade, Detinjstvo, (Milan S. Dimitrijević), Radio Beograd I.  
21.02. 1997, 9h-9h 30m Program for youngs, Childhood, (Milan S. Dimitrijević), Radio Beograd I.
7. 25.02.1997, Kometa Hejl-Bop (Miodrag Dačić), Jutarnji program, TV Studio B.  
25.02.1997, Halle-Bopp comet (Miodrag Dačić), Morning program, TV Studio B.
8. 2.03.1997, Svetovi nauke (gost Miodrag Dačić), Radio Beograd II program.  
2.03.1997, Worlds of science (guest Miodrag Dačić), Radio Beograd II program.

9. 31.03. 1997, 14h-14h 30m Emisija: Škola, faks i radiotrake, Radio Beograd 202, "110 godina Astronomske opservatorije" (Milan S. Dimitrijević).  
31.03. 1997, 14h-14h 30m Emission: School, fax and radiotapes, Radio Beograd 202, "110 years of the Astronomical observatory" (Milan S. Dimitrijević).
10. 7.04.1997, Kod dva bela goluba (gost Slobodan Ninković), Radio Beograd I, 10h - 11h.  
7.04.1997, At two white doves (guest Slobodan Ninković), Radio Beograd I, 10h - 11h.
11. 3 N Naučni program (Milan S. Dimitrijević), TV Beograd II Program, 11.04.1997, 17h30m-18h, Repriza: I Program, 14.04.1997, 15h15m  
3 N Scientific program (Milan S. Dimitrijević), TV Beograd II Program, 11.04.1997, 17h30m-18h, Revival: I Program, 14.04.1997, 15h15m
12. Serija od 4 emisije "Sunce naša zvezda", autor scenarija i voditelj Milan S. Dimitrijević, Školski program: I emisija "Priča o Suncu": 8 i 15.IV.1997, II emisija "Panorama pojava na Suncu" 22 i 29.IV.1997, III emisija "Atmosfera Sunca" 6 i 13.V.1997, IV emisija "Uticao Sunca na Zemlju" 20 i 27.V.1997.  
Series of 4 parts "Sun our star", the author of scenario and emission host Milan S. Dimitrijević, School programme: I part "Story about Sun": 8 and 15.IV.1997, II part "Panorame of phenomens on the Sun" 22 and 29.IV.1997, III part "Atmospheres of the Sun" 6 and 13.V.1997, IV part "Solar influence on the Earth" 20 and 27.V.1997.
13. 17.IV 1997, 16-17h, Emisija "Dimenzija 21" (gost Milan S. Dimitrijević), Radio S.  
17.IV 1997, 16-17h, Emission "Dimension 21" (guest Milan S. Dimitrijević), Radio S.
14. Zeleni prsten (M. S. Dimitrijević - O oblaku namagnetisane plazme koji posle erupcije na Suncu ide ka Zemlji), TV Beograd I program, 22.IV.1997, 18h30m.  
Green ring (M. S. Dimitrijević - On magnetized plasma cloud going to the Earth after Solar chromospheric eruption), TV Beograd I program, 22.IV.1997, 18h30m.
15. Eho (Milan S. Dimitrijević - O kometi Hejl-Bop), TV Beograd II program 30.IV.-1997, 17h; repriza 1.V.1997, 15h15m.  
Echo (Milan S. Dimitrijević - On Halle-Bopp comet), TV Beograd II program 30.IV.1997, 17h; Revival: 1.V.1997, 15h15m.
16. Puls: "Naučni programi na televiziji" (gost Milan S. Dimitrijević), TV Beograd, I program, 28.05.1997, 20h10m-20h-30m.  
Pulse: "Scientific programs on television" (guest Milan S. Dimitrijević), TV Beograd, I program, 28.05.1997, 20h10m-20h-30m.
17. Astronomska opservatorija I (scenarista i učesnik Milan S, Dimitrijević, ostali učesnici: Istvan Vince, Gojko Djurašević, Luka Č. Popović, Georgije Popović, Vojislava Protić - Benišek, Slobodan Ninković), TV Beograd I program, 3.VI.1997, 10h30m-11h.

- Astronomical Observatory I (scenarist and participant Milan S, Dimitrijević, other participants: Ištvan Vince, Gojko Djurašević, Luka Č. Popović, Georgije Popović, Vojislava Protić - Benišek, Slobodan Ninković), TV Beograd I program, 3.VI.1997, 10h30m-11h.
18. Astronomska opservatorija II (scenarista i učesnik Milan S, Dimitrijević, ostali učesnici: Goran Damljanović, Vesna Mijatović, Zorica Cvetković, Miodrag Dačić), TV Beograd I program, 10.VI.1997, 10h30m-11h.  
Astronomical Observatory II (scenarist and participant Milan S, Dimitrijević, other participants: Goran Damljanović, Vesna Mijatović, Zorica Cvetković, Miodrag Dačić), TV Beograd I program, 10.VI.1997, 10h30m-11h.
19. 15.07.1997, Čekajući metroa: "Kad počinje treći milenijum?" (gost Miodrag Dačić), TV Beograd III, 20h-21h.  
15.07.1997, Waiting for metropolitan: "When starts the third milenium?" (guest Miodrag Dačić), TV Beograd III, 20h-21h.
20. 22.07.1997, Čekajući metroa (gost Slobodan Ninković), TV Beograd III, 20h-21h.  
22.07.1997, Waiting for metropolitan (guest Slobodan Ninković), TV Beograd III, 20h-21h.
21. 5.08.1997, Čekajući metroa: (gost Miodrag Dačić), TV Beograd III, 20h-21h.  
5.08.1997, Waiting for metropolitan: (guest Miodrag Dačić), TV Beograd III, 20h-21h.
22. 21.12.1997, Putevima nauke (gost Luka Č. Popović), Radio Beograd II program 18h-19h.  
21.12.1997, On ways of science (guest Luka Č. Popović), Radio Beograd II program 18h-19h.

## 7. PUBLISHING

### 7.1. EDITIONS OF THE ASTRONOMICAL OBSERVATORY

1. BULLETIN ASTRONOMIQUE DE BELGRADE  
M. S. Dimitrijević - editor in chief  
L. Č. Popović - editor  
O. Atanacković - Vukmanović  
S. Sadžakov - member of the editorial board  
I. Vince - member of the editorial board



2. PUBLICATIONS OF THE ASTRONOMICAL OBSERVATORY OF BELGRADE

- M. S. Dimitrijević - editor in chief
- L. Č Popović - editor
- O. Atanacković - Vukmanović, member of the editorial board
- Z. Knežević - member of the editorial board
- S. Ninković - member of the editorial board
- G. Popović - member of the editorial board
- V. Protić - Benišek - member of the editorial board
- I. Vince - member of the editorial board

3. BILTEN REFERATA ZA IZBOR U ZVANJA, Astronomske opservatorije (BULLETIN OF REPORTS ON CANDIDATES FOR ACADEMIC RANKS)

- M. S. Dimitrijević - editor

7.2. EDITIONS WHEREIN FELLOWS OF ASTRONOMICAL  
OBSERVATORY ARE AT EDITORIAL BOARDS  
OR SCIENTIFIC COUNCELS

1. VASIONA (UNIVERSE)

- M. S. Dimitrijević - editor in chief
- L. Č. Popović - member of the editorial board
- M. Dačić - member of the editorial board

2. MLADI FIZIČAR (YOUNG PHYSICIST)

- M. S. Dimitrijević - member of the publishing council up to the number 63

3. STUDIJE, ANALIZE, POLITIKE  
(STUDIES, ANALYSES, POLITICS)

- Savezno ministarstvo za razvoj, nauku i životnu sredinu  
(Federal Ministry for development, science and environment)
- M. S. Dimitrijević - member of the editorial board

3.1 EKONOMSKA POLITIKA ZA 1997 GODINU

No. 16, 1996.

3.2 ECONOMIC POLICY FOR 1997

No. 17, 1997.

3.3 M. Jandrić, M. Bošnjak, A. Pinkulj, G. Dinić, S. Branković, B. Milošević, S. Golubović, D. Filipović, A. Jevtić, M. Trajković, S. Jovičić, J. Jovanović, Z. Zec, J. Ilić, B. Stojanović, M. Dimitrijević, A. Mujačić, M. Pavković, S. Pribin  
SAVEZNA REPUBLIKA JUGOSLAVIJA

EKONOMSKI PREGLED 1996

No. 18, 1996.

- 3.4 FEDERAL REPUBLIC OF YUGOSLAVIA - Economic Surveys 1996  
No. 19, 1997.
- 3.5 EKONOMSKI OPORAVAK I RAZVOJ SAVEZNE REPUBLIKE JUGOSLAVIJE  
(ECONOMICAL RESTAURATION AND DEVELOPMENT OF FEDERAL REPUBLIC OF YUGOSLAVIA)  
No. 20, 1997.
- 3.6 SAVEZNA REPUBLIKA JUGOSLAVIJA - Monografija  
(FEDERAL REPUBLIC OF YUGOSLAVIA - Monography)  
No. 21, 1997.
- 3.7 MAKROEKONOMSKI BILANSI - Sistem nacionalnih računa - 1995. i 1996.  
(MACROECONOMIC BILANSES - The system of state accounts - 1995 and 1996)  
No. 22, 1997
4. EKONOMSKI PREGLED  
(ECONOMICAL SURWAY)  
Savezno ministarstvo za razvoj, nauku i životnu sredinu  
(Federal Ministry for developement, science and environment)  
M. S. Dimitrijević - member of the editorial board
5. FLOGISTON časopis za istoriju nauke, Muzej nauke i tehnike (Journal for the history of science, Museum of science and technics), Beograd  
M. S. Dimitrijević -member of the scientific council
6. Biblioteka "DISSERTATIO" (Edition "DISSERTATIO") Zadužbina Andrejević  
(Andrejević foundation)  
M. S. Dimitrijević - president of the editorial board and member of the scientific council of the foundation
- 6.1 Radmila Stević  
NASTANAK ŠEĆERNE BOLESTI KOD STARIH OSOBA  
Br. 20, 1997
- 6.2 Dejan Komatina  
OTVORENI TOKOVI GUSTIH MEŠAVINA  
Br. 21, 1997
- 6.3 Goran Čobeljić  
PARALITIČKA DISLOKACIJA KUKA KOD CEREBRALNE PARALIZE  
Br. 22, 1996
- 6.4 Nina Šćepanović  
TELESNI INTEGRITET I MATERJALNA ŠTETA  
Br. 23, 1997
- 6.5 Dragana Čobić-Šaranović  
NUKLEARNA KARDIOLOGIJA - VOLUMEN LEVE KOMORE SRCA  
Br. 24, 1997

- 6.6 Radosav Cerović  
BIOLOGIJA OPLODNJE VIŠNJE  
Br. 25, 1997
- 6.7 Vidosava Rakočević-Stojanović  
MIOTONIČNA DISTROFIJA I SRČANI POREMEĆAJI  
Br. 26, 1997
- 6.8 Nevenka Perunović  
PRINCIPI NABAVNE POLITIKE U BIBLIOTEKAMA  
Br. 27, 1997
- 6.9 Aleksa Andrejević  
MULTIPARITET, MEDICINSKI I SOCIJALNI PROBLEM  
Br. 28, 1997
- 6.10 Jasmina Djordjević  
DRAŽEVICA I RIDJANI SREDINOM XVI VIJEKA  
Br. 29, 1997
- 6.11 Arandjel Babić  
CA MODELIRANJE U PROJEKTOVANJU TERETNIH VAGONA  
Br. 30, 1997
- 6.12 Mirjana R. Jovanović  
INTERAKCIJA KOMPONENATA I DEGRADACIJA PLATINSKIH KATAL-  
IZATORA  
Br. 31, 1997
- 6.13 Živorad G. Nidžović  
ZAŠTITNI DERMOFARMACEUTSKI PREPARATI  
Br. 32, 1997
- 6.14 Dr Nevena Petrušić  
VANPARNIČNI POSTUPAK ZA DEOBU  
Br. 33, 1997
- 6.15 Dr Aleksandar Jovanović  
RATNE PSIHOTRAUME I PORODICA  
Br. 34, 1997
- 6.16 Dr Dragana Radenković-Jocić  
STRANE INVESTICIJE U ZEMLJAMA U TRANZICIJI  
Br. 35, 1997
- 6.17 Alexandar Jovanovic, M.D.  
WAR PSYCHOTRAUMAS AND THE FAMILY  
Br. 36, 1997
- 6.18 Dr Časlav T. Milić  
SAMOUBISTVA - KO, KAKO KADA I ZAŠTO  
Br. 37, 1997

- 6.19 Mr Biljana Šimunović  
MATICA SRPSKA U KRALJEVINI JUGOSLAVIJI  
Br. 38, 1997
- 6.20 Dr Ružica Božović-Stamenović  
O PROSTORIMA LEČENJA - CENTRI DNEVNE NEGE  
Br. 39, 1997
- 6.21 Dr Srdjan Bojović  
LE PIN NOIR ET LES TERPENES  
CRNI BOR I TERPENI  
Br. 40, 1997
- 6.22 Dr Zoran Golubović  
LEČENJE ZATVORENIH PRELOMA POTKOLENICE  
Br. 41, 1997
- 6.23 Dr Dragi Radomirović  
REŠAVANJE VARIJACIONIH PROBLEMA  
Br. 42, 1997
- 6.24 Dr Djordjije Šaranović  
FUNKCIONALNA RADIOLOGIJA DEBELOG CREVA  
FUNCTIONAL RADIOLOGY OF THE COLON  
Br. 43, 1997
- 6.25 Dr Danica Mićanović  
SELEKCIJA PŠENICE NA AKTIVNOST AZOTOFIKSACIJE  
Br. 44, 1997
- 6.26 Dr Svetlana Paunović  
INFEKTIVNA DEFORMACIJA PLODOVA DUNJE  
Br. 45, 1997
- 6.27 Dr Srdjan Milenković  
VEŠTAČKE NEURONSKE MREŽE  
Br. 46, 1997
- 6.28 Dr Dušan R. Stojadinović  
HIDROGEOLOŠKE KARAKTERISTIKE VELIKOMORAVSKOG BASENA  
Br. 47, 1997
- 6.29 Dr Miloš Stojiljković  
PROFILAKSA TROVANJA SOMANOM  
Br. 48, 1997
- 6.30 Dr Vesna Djukić-Dojčinović  
PRAVO NA RAZLIKE SELO-GRAD  
Br. 49, 1997

- 6.31 Dr Branko Nadoveza  
BALKANSKI SOCIJALISTI I BALKANSKA FEDERACIJA  
Br. 50, 1997
- 6.32 Dr Dušan Mijović  
HIDROGEOLOGIJA GRANODIORITA SRBIJE  
Br. 51, 1997
- 6.33 Dr Radmilo Petrović  
KRSTOVI VIZANTIJSKOG CARSTVA  
Br. 52, 1997
7. MILUTIN MILANKOVIĆ, IZABRANA DELA  
MILUTIN MILANKOVIĆ, SELECTED WORKS  
Zavod za udžbenike i nastavna sredstva, Beograd, 1997.  
M. S. Dimitrijević - member of the editorial board, editor of the third volume,  
co-editor of the first and the second volume.
- 7.1 Kanon osunčavanja Zemlje i njegova primena na problem ledenih doba, 1 deo  
(Canon of Earth insolation and its application to the problem of ice ages, Part  
1)  
Editors: Veljko Vujčić, Milan S. Dimitrijević
- 7.2 Kanon osunčavanja Zemlje i njegova primena na problem ledenih doba, 2 deo  
(Canon of Earth insolation and its application to the problem of ice ages, Part  
2)  
Editors: Veljko Vujčić, Milan S. Dimitrijević
- 7.3 Nebeska mehanika \* Istorija astronomske nauke  
(Celestial mechanics \* The history of astronomical science)  
Editor: Milan S. Dimitrijević
- 7.4 Kroz vasionu i vekove \* Kroz carstvo nauka  
(Across the Universe and ages \* Across the empire of sciences)
- 7.5 Spisi iz istorije nauka  
(Writings on the history of sciences)
- 7.6 Članci, govori, prepiska  
(Articles, Speeches, Correspondence)
- 7.7 Uspomene, doživljaji i saznanja  
(Souvenirs, adventures and experiences)
8. Fullerenes and nanotubes review  
Published by IHIS-Fullerenes Science and Technology Center, Belgrade  
Milan S. Dimitrijević - member of editorial board

9. STUDIJE, ANALIZE, DOKUMENTI

(STUDIES, ANALYSES, DOCUMENTS)

Savezna Republika Jugoslavija, Savezna vlada

(Federal Republic of Yugoslavia, Federal government)

Savezno ministarstvo za razvoj, nauku i životnu sredinu

(Federal Ministry for development, science and environment)

M. S. Dimitrijević - member of the editorial board

9.1 POLITIKA RAZVOJA SAVEZNE REPUBLIKE JUGOSLAVIJE SA PROCENOM MAKROEKONOMSKIH KRETANJA DO 2005.

(POLICY OF DEVELOPMENT OF FEDERAL REPUBLIC OF YUGOSLAVIA WITH AN ESTIMATION OF MACROECONOMIC TRENDS UP TO 2005)

No. 1, 1997.

### 7.3. REVIEWING

#### 7.3.1. THE NAME OF REVIEWER ON THE PUBLICATION AND A PART OF REPORT PRINTED

1. Vlado Milićević

Sjaj zvezde Milanković

(The shining of star Milanković)

Reviewers: M. Dimitrijević, A. Djordjević,

Faculty for Mining and Geology, Institute of Geophysics, Belgrade, 1997.

2. Dobrosav Bjeletić

Slovo o velikanima

(A speech on great men)

Reviewers: Miloš Macura, Milan S. Dimitrijević

Budućnost, Novi sad, 1997.

#### 7.3.2. REVIEWER ON THE PUBLICATION

1. Editor in chief Milan Kurepa

Elektron i svet oko nas

(Electron and the world around us)

(Elektron - sto godina otkrića; sv. 1)

(Electron - hundred years from the discovery; Vol. 1)

Reviewers for particular articles: ... dr Milan Dimitrijević...

SANU and Zavod za udžbenike i nastavna sredstva, Beograd, 1997.

2. Milan Kurepa and Dušan Filipović  
Elektron kakvog ga znamo i svet oko nas  
(Electron we know and the world around us)  
(Elektron - sto godina otkrića; sv. 2)  
(Electron - hundred years from the discovery; Vol. 2)  
Reviewers for particular articles: ... dr Milan Dimitrijević...  
SANU and Zavod za udžbenike i nastavna sredstva, Beograd, 1997.
3. Editor in chief Milan Kurepa  
Mlazevi slobodnih elektrona  
(Beams of free electrons)  
(Elektron - sto godina otkrića; sv. 3)  
(Electron - hundred years from the discovery; Vol. 3)  
Reviewers for particular articles: ... dr Milan Dimitrijević...  
SANU and Zavod za udžbenike i nastavna sredstva, Beograd, 1997.
4. Editor in chief Milan Kurepa  
Interakcije niskoenergijskih elektrona  
(Interactions of low energetic electrons)  
(Elektron - sto godina otkrića; sv. 4)  
(Electron - hundred years from the discovery; Vol. 4)  
Reviewers for particular articles: ... dr Milan Dimitrijević...  
SANU and Zavod za udžbenike i nastavna sredstva, Beograd, 1997.
5. Editor in chief Milan Kurepa  
Elektron u čvrstim telima i primena elektrona  
(Electron in solid bodies and application of electron)  
(Elektron - sto godina otkrića; sv. 5)  
(Electron - hundred years from the discovery; Vol. 5)  
Reviewers for particular articles: ... dr Milan Dimitrijević...  
SANU and Zavod za udžbenike i nastavna sredstva, Beograd, 1997.
6. Editor in chief Milan Kurepa  
Elektron u jonizovanim gasovima i Elektroni i jezgro atoma  
(Electron in ionized gases and Electrons and atomic nucleus)  
(Elektron - sto godina otkrića; sv. 6)  
(Electron - hundred years from the discovery; Vol. 6)  
Reviewers for particular articles: ... dr Milan Dimitrijević...  
SANU and Zavod za udžbenike i nastavna sredstva, Beograd, 1997.
7. Editor in chief Milan Kurepa  
Zbornik saopštenja  
(Proceedings)  
(Elektron - sto godina otkrića; sv. 7)  
(Electron - hundred years from the discovery; Vol. 7)  
Reviewers for particular articles: ... dr Milan Dimitrijević...  
SANU and Zavod za udžbenike i nastavna sredstva, Beograd, 1997.

### 7.3.3. REVIEWING FOR INTERNATIONAL JOURNALS

1. ICARUS

Zoran Knežević (1)

2. CELESTIAL MECHANICS AND DYNAMICAL ASTRONOMY

Zoran Knežević (1)

3 PLANETARY AND SPACE SCIENCE

Zoran Knežević (1)

## 8. ORGANIZATION OF CONFERENCES

1. Razvoj astronomije kod Srba (Development of Astronomy among Serbs), Belgrade, 7-9.04.1997.

Scientific Organizing Committee

M. S. Dimitrijević, Co-chairman

L. Č. Popović

Local Organizing Committee

L. Č. Popović, Chairman

V. Živkov

P. Jovanović

V. Mijatović

R. Pavlović

N. Popović

Co-Editors of the proceedings

M. S. Dimitrijević

L. Č. Popović

2. III Romanian - Yugoslav round table on cooperation in astronomy, Cluj-Napoca, Romania, 6.09 1997

Organizing committee

M.S. Dimitrijević, Co-chairmen



3. II Yugoslav Conference on Spectral Line Shapes, Bela Crkva, 29.09-2.10.1997.

Scientific Organizing Committee

M. S. Dimitrijević

I. Vince

Co-Editor of the proceedings

Luka Č. Popović

4. Ruska emigracija u srpskoj i drugim slovenskim kulturama (Russian emigration in Serbian and other slavic cultures), Belgrade, 20-22.11 1997

Organizing Committee

V. Protić-Benišek

## 9. MEMBERSHIP IN INTERNATIONAL AND NATIONAL SCIENTIFIC SOCIETIES AND BODIES

### 9.1. MEMBERSHIP IN INTERNATIONAL SCIENTIFIC SOCIETIES

#### 1. International Astronomical Union

J. Arsenijević

M.S. Dimitrijević (Commissions 14, 36)

G. Djurašević

Z. Knežević (Commissions 7 (Member of the organizing committee), 15, 20)

A. Kubičela (Commission 12)

S. Ninković (Commissions 28, 33, 38)

I. Pakvor (Commission 8)

G. Popović (Commission 26)

V. Protić-Benišek (Commission 20)

S. Sadžakov (Commissions 8, 19)

I. Vince (Commission 12)

2. European Astronomical Society
  - J. Arsenijević
  - Z. Cvetković
  - M. Dačić
  - M.S. Dimitrijević
  - S. Ninković
  - L.Č. Popović
  - V. Protić-Benišek
  - S. Sadžakov
  - I. Vince
  
3. European Physical Society
  - M.S. Dimitrijević
  
4. Euro-Asian Astronomical Society
  - M.S. Dimitrijević
  - S. Ninković
  - G. Djurašević
  
5. Hungarian Astronomical Society
  - I. Vince
  
6. American Astronomical Society
  - M. M. Ćirković
  
7. American Physical Society
  - M. M. Ćirković
  
8. Astronomische Gesellschaft
  - S. Ninković
  - S. Sadžakov
  
9. International Occultation Timing Association - European Section
  - V. Protić-Benišek
  
10. Astronomical Society of the Pacific
  - S. Ninković
  
11. Spaceguard Foundation
  - Z. Knežević

## 9.2. MEMBERSHIP IN NATIONAL ASTRONOMICAL AND OTHER PROFESSIONAL SOCIETIES AND BODIES

1. Društvo astronoma Srbije (Society of astronomers of Serbia)  
S. Sadžakov, President  
M.S. Dimitrijević, member of the presidential board
2. Nacionalni komitet za astronomiju (National committee for astronomy)  
I. Vince, President  
G. Djurašević  
Z. Knežević
3. Astronomsko društvo "Rudjer Bošković" (Astronomical society "Rudjer Bošković")  
M.S. Dimitrijević, President  
Z. Knežević, member of the presidential board  
L.Č. Popović, member of the presidential board  
V. Protić-Benišek, member of the presidential board  
I. Vince, member of the presidential board  
M. Dačić, member of the presidential board
4. Odbor za matematiku, mehaniku i astronomiju Ministarstva za nauku i tehnologiju Srbije (formiran za period 1996 - 2000) Board for mathematics, mechanics, and astronomy of the Ministry of Science and Technology of Serbia (for 1996-2000)  
I. Vince - member
5. Radna grupa za pripremu rešenja za ostvarivanje Jugoslovenskog primarnog etalona vremena i frekvencije i distribucije etalona frekvencije i vremena SR Jugoslavije (Working group for the preparation of the solution for the realization of Yugoslav time and frequency primary standard and the distribution of the Yugoslav time and frequency standard)  
V. Protić-Benišek - member
6. Serbian Society for Science fiction  
M. Ćirković - secretary

## 10. VISITING DIGNITARIES OF THE OBSERVATORY

2-14.04.1997.

Dr Armen Oskanyan, Byrakan, Armenia

6.04.1997.

H.H. Prince Tomislav Karadjordjević, with spose Linda and sons Mihajlo and Djordje

7.04.1997.

Academician Dušan Kanazir, Minister of Serbia for Science and Technology

8-9.04.1997

Dr Mijat Mijatović, Faculty of Sciences, Skoplje

25.04.1997.

H.E. Michael Weninger, Ambassador of Austria

22-30.06.1997.

Dr Irina Vladimirovna Petrovskaya, Astronomical institute of the St. Peterburg State University, St. Peterburg, Russia

3.10.1997

Dr V. M. Astashinskij, , Institute of Molecular and Atomic Physics, Minsk, Belarus

Dr Aleksandr N. Chumakov, Institute of Molecular and Atomic Physics, Minsk, Belarus

## 11. THE ATTENDANCE IN SCIENTIFIC CONFERENCES

1. Republički seminar o nastavi fizike (Republic seminar on Physics education), Niš  
9-10.01. 1997  
L. Č. Popović
2. Razvoj astronomije kod Srba (Development of Astronomy among Serbs), Belgrade,  
7-9.04.1997.  
J. Arsenijević  
G. Damljanović  
M. Dačić  
M. S. Dimitrijević  
M. Djokić  
A. Kubičela  
S. Ninković  
I. Pakvor  
G. M. Popović  
L. Č. Popović  
V. Protić-Benišek  
S. Sadžakov  
V. Trajkovska  
Z. Cvetković
3. II National conference of italian celestial mechanicians, Aquila, Italy 21-25.04. 1997  
Z. Knežević
4. Joint European and National Astronomical Meeting (JENAM) - '97, Kalithea (Thes-  
saloniki), Greece, 2-5.07. 1997  
M.S. Dimitrijević  
G. Djurašević  
L. Č. Popović  
V. Trajkovska
5. 29th European Group for Atomic Spectroscopy (EGAS) Conference, Berlin, Ger-  
many, 14-18.07. 1997  
L. Č. Popović

6. XX Int. Congress of the History of Science, Liège, Belgium, 21-25.07. 1997  
V. Protić-Benišek
7. Technical Aspects of Atomic and Molecular Data Processing and Exchange (IAEA Advisory Group Meeting), Vienna, Austria, 21-22.07.1997.  
M. S. Dimitrijević
8. XX International Conference on the Physics of Electronic and Atomic Collisions (ICPEAC), Vienna, Austria, 23-29.07.1997.  
M. S. Dimitrijević
9. 23rd General Assembly of the International Astronomical Union, Kyoto, Japan, 18-27.08.1997.  
G. Damljanović  
L.Č. Popović  
I. Vince
10. 3rd General Conference of the Balkan Physical Union, Cluj-Napoca, Romania, 2-5.09. 1997.  
Z. Cvetković  
M.S. Dimitrijević  
S. Ninković  
L.Č. Popović  
V. Trajkovska
11. III Romanian - Yugoslav round table on cooperation in astronomy, Cluj-Napoca, Romania, 6.09. 1997  
Z. Cvetković  
M.S. Dimitrijević  
S. Ninković  
L.Č. Popović  
V. Trajkovska  
I. Vince
12. Journées: "Systèmes de Référence Spatio - Temporels" 1997, Prague, Czech Republic, 22-24.09. 1997  
G. Damljanović  
I. Pakvor
13. II Yugoslav Conference on Spectral Line Shapes, Bela Crkva, 29.09-2.10.1997.  
M. S. Dimitrijević  
L. Č. Popović

D. Tankosić

I. Vince

14. 2nd Advances in Solar Physics Euroconference, Preveza, Greece, 7-11.10. 1997.

I. Vince

15. 26th Meeting and Workshop of European Working Group on CP Stars, Vienna, Austria, 27-30.10.1997.

M.S. Dimitrijević

L.Č. Popović

16. International Conference on Variable Stars, Brno, Czech Republic, 7-9.11.1997.

M. S. Dimitrijević

G. Djurašević

17. Ruska emigracija u srpskoj i drugim slovenskim kulturama (Russian emigration in Serbian and other slavic cultures), Belgrade, 20-22.11. 1997

M.S. Dimitrijević

V. Protić-Benišek

## 12. VISITS TO SCIENTIFIC INSTITUTIONS

1. 1.01-16.05. 1997

Department of Physics and Astronomy, University of Canterbury, Christchurch, New Zealand.

Lj. Skuljan

2. 8.01-1.04. 1997

Department of Astronomy, University Eötvös Loránt, Budapest, Hungary.

S. Nikolić

3. 15.01-14.07.1997

Armagh Observatory, Armagh, Northern Ireland

D. Jevremović

4. 23-29.01. 1997  
Onsala Space Observatory, Sweden  
S. Nikolić
5. 10.02-31.12.1997  
Instituto Astronomico e Geofisico - USP, Sao Paolo, Brasil  
S. Jankov
6. 17.03-30.05. 1997  
State University of New York, Stony Brook, New York, USA  
M. Ćirković
7. 21.04-22.12. 1997  
Department of Astronomy, University Eötvös Loránt, Budapest, Hungary.  
S. Nikolić
8. 25.04-18.05. 1997  
Dipartimento di matematica, Pisa, Italy  
Osservatorio di Torino, Torino, Italy  
Osservatorio di Brera, Milano, Italy  
Z. Knežević
9. 21-26.05. 1997  
Observatoire de Haute Provence (Observational programme - Spectroscopy and photometry of M dwarfs), St Michel de l'Observatoire, France  
D. Jevremović
10. 1.07-31.12. 1997  
Department of Physics and Astronomy, University of Canterbury, Christchurch, New Zealand.  
Lj. Skuljan
11. 24.07. 1997  
Astronomical observatory, Vienna, Austria.  
M.S. Dimitrijević
12. 1.09-18.12. 1997  
State University of New York, Stony Brook, New York, USA  
M. Ćirković



13. 2.09. 1997  
Astronomical observatory, Timisoara, Romania.  
M.S. Dimitrijević  
L.Č. Popović  
S. Ninković  
Z. Cvetković  
V. Trajkovska
14. 5-6.09. 1997  
Astronomical Observatory, Cluj-Napoca, Romania  
Feleacu Astronomical Station, Cluj-Napoca, Romania.  
M.S. Dimitrijević  
L.Č. Popović  
S. Ninković  
Z. Cvetković  
V. Trajkovska  
I. Vince
15. 5.09. 1997  
Astronomical observatory, Timisoara, Romania.  
I. Vince (The preliminary choice of the observational equipment for the Solar eclipse of 1999.)
16. 15.09-10.12. 1997  
Armagh Observatory, Armagh, Northern Ireland  
D. Jevremović
17. 18.09. 1997  
Baja Astronomical observatory, Baja, Hungary  
I. Vince (The delivery to Belgrade Astronomical observatory of the gift of the University of Florida, a photomultiplier EMI 9558QB)
18. 2-9.10. 1997  
Konkoly Observatory - Piskéstató station, Matra, Hungary  
S. Nikolić
19. 4-11.10. 1997  
St. Petersburg State University, St. Petersburg, Russia.  
S. Ninković
20. 20.11-11.12. 1997  
Sternberg State Astronomical Institute (GAIŠ), Moscow, Russia.  
G. Djurašević

21. 1-4.12. 1997  
Konkoly Observatory - Pizskéstető station, Matra, Hungary  
S. Nikolić
22. 10-12.10. 1997  
Effelsberg Radio Telescope, Max Planck Institute for Radio astronomy, Bonn, Germany.  
S. Nikolić

### 13. INTERNATIONAL SCIENTIFIC COLLABORATION

The HIPPARCOS program (Observation on the Belgrade zenith telescope from 1949-1985 periode - G.Damljanović)

Institute of Molecular and Atomic Physics, Minsk, Belarus (Agreement on collaboration signed 15. 09. 1995)

Scientific-Research Institute for Applied Physical Problems, of The Belarussian State University, Minsk, Belarus (Agreement on collaboration signed 15. 09. 1995)

Astronomical Observatory of The Belarussian State University, Minsk, Belarus (Agreement on collaboration signed 27. 12. 1995)

Observatoire Royale de Belgique, Uccles, Belgia (V. Protić-Benišek)

Instituto Astronomico e Geofisico - USP, Sao Paulo, Brasil (S. Jankov, Z. Knežević)

Institute of Theoretical Astronomy, Sofia, Bulgaria (V. Protić-Benišek)

Toravere Observatory, Tartu, Estonia (G. Djurašević)

Observatoire de Paris, Meudon, France (M. S. Dimitrijević)

Bureau des longitudes, Paris, France (V. Protić-Benišek, G. Damljanović, L. Č. Popović)

Section of Astrophysics, Astronomy and Mechanics, Department of Physics, University of Athens, Athens, Greece (G. Djurašević)

Department of Astronomy, Eötvös Lorand University, Hungary (S. Nikolić)

Konkoly Observatory, Hungary (I. Vince, S. Nikolić)

Dipartimento di matematica, Universita di Pisa, Pisa, Italy (Z. Knežević)

Osservatorio astronomico di Brera, Milano, Italy (Z.Knežević)

Osservatorio astronomico di Torino, Italy (Z.Knežević)

ILOC - International Lunar Occultations Center, Tokio, Japan (V. Protić-Benišek)

Astronomical Institute, Faculty of Mathematics, Computer science, Physics and Astronomy, University of Amsterdam, Amsterdam, The Netherlands (D. Jevremović)

Department of Physics and Astronomy, University of Canterbury, Christchurch, New Zealand (Lj. Skuljan)

Carter Observatory, Wellington, New Zealand (G. Djurašević)

Armagh Observatory, Armagh, Northern Ireland (D. Jevremović)

Queen's University, Belfast, Northern Ireland (D. Jevremović)

Astronomical Observatory, Bucharest, Romania (Agreement on collaboration with Astronomical Institute of the Romanian Academy of Sciences, signed 12. 05. 1995)

Astronomical Observatory, Cluj - Napoca, Romania (Agreement on collaboration with Astronomical Institute of the Romanian Academy of Sciences, signed 12. 05. 1995)

Astronomical Observatory, Timisoara, Romania (Agreement on collaboration with Astronomical Institute of the Romanian Academy of Sciences, signed 12.05.1995)

GAIŠ - Main Astronomical Institute "Šternberg", Moscow, Russia (S. Ninković)

St. Petersburg State University, St. Petersburg, Russia (S. Ninković)

Institute of Theoretical Astronomy (ITA), St. Petersburg, Russia (V. Protić-Benišek, G. Popović)

Petrozavodsk State University, Petrozavodsk, Russia (S. Ninković)

Pulkovo Astronomical Observatory, Pulkovo, St.Petersburg, Russia (I. Pakvor, V. Protić-Benišek, S. Sadžakov, G. Popović)

Pulkovo Astronomical Observatory - Kislovodsk Solar Station, Pulkovo - Kislovodsk, St.Petersburg, Russia (Agreement on collaboration signed in beginning of 1996)

Institute of Applied Physics of the Russian Academy of Sciences, Nizhnij Novgorod, Russia, (Agreement on collaboration signed in beginning of 1996)

Department of Optics and Spectroscopy, Kazan State University, Kazan, Tatarstan, Russia (Agreement on collaboration, signed 18.08.1995)

Department of Astronomy, Kazan State University, Kazan, Tatarstan, Russia (Agreement on collaboration, signed 18.08.1995)

Engelkhart Astronomical Observatory, Kazan, Tatarstan, Russia (Agreement on collaboration, signed 18.08.1995)

Astronomical Institute of the Slovak Academy of Sciences, Tatranska Lomnica, Slovakia (G. Djurašević)

Catalonian Polytechnical University, Barcelona, Spain (S. Ninković)

Astrophysical Institute of Andalusia, Granada, Spain (S. Ninković)

Ankara University Observatory, Turkey (G. Djurašević)

Astronomical Observatory of Odessa State University "I.I. Mechnikov", Odessa, Ukraina (Agreement on collaboration, signed 27.11.1995)

Crimean Astrophysical Observatory, Nauchny, Crimea, Ukraina (Agreement on collaboration, signed 24.11.1995)

Mykolayiv Observatory, Mykolayiv, Ukraina (I. Pakvor, G. Damljanović)

State University of New York, Stony Brook, New York, USA (M. Ćirković)

Majdanak Observatory, Majdanak, Uzbekistan (G. Djurašević)

## 14. TEACHING ACTIVITY

### 14.1. LECTURES AT THE UNIVERSITY

1. M.S. Dimitrijević  
ASTRONOMICAL SPECTROSCOPY  
Department of Astronomy, Mathematical Faculty  
Postgraduate studies II year
2. Z. Knežević  
METHODS OF CELESTIAL MECHANICS  
Department of Astronomy, Mathematical Faculty  
Postgraduate studies II year
3. S. Ninković  
SPECIAL COURSE ON ORBITS OF STARS IN STELLAR SYSTEMS  
Department of Astronomy, Mathematical Faculty  
Postgraduate studies II year

4. S. Ninković  
GALACTIC ASTRONOMY  
Department of Astronomy, Mathematical Faculty  
Postgraduate studies II year
5. I. Vince  
PRACTICAL ASTROPHYSICS  
Department of Astronomy, Mathematical Faculty  
(lectures and exercises) III year.
6. I. Vince  
METHODS AND TECHNIQUE OF OBSERVATIONS OF THE SUN  
Department of Astronomy, Mathematical Faculty  
Postgraduate studies II year

#### 14.2. OTHER TEACHING ACTIVITIES

1. V. Protić-Benišek was a mentor to Nikola Božić, bachelor of the Valjevo secondary school, at Petnica Center of Science, for the project "Reduction of the star SAO 96588 occultation by Moon". With this work he won the second place at the competition "Scientific and technical creativity of young of Serbia" in May 1997.

**15. ADDITION TO THE 1995 LIST OF  
INSTITUTIONS RECEIVING BULL. ASTRON.  
BELGRADE AND PUBL. ASTRON. OBS. BELGRADE**

**15.1. CZECH REPUBLIK**

Observatory Upice, Upice, Czech Republic

**15.2. USA**

Chemical Society, Columbus, Ohio, USA  
University of California Library, Berkeley, California, USA

**15.3. YUGOSLAVIA**

Matematički institut SANU, Beograd

## 16. BELGRADE ASTRONOMICAL OBSERVATORY: STAFF AND ORGANIZATION

### WINNERS OF THE ASTRONOMICAL OBSERVATORY PRIZE FOR 1997

1. Prize for Science  
GOJKO DJURAŠEVIĆ
2. Prize for Science for youngs  
ZORICA CVETKOVIĆ
3. Prize for the contribution to the development of the Astronomical Observatory (for fellows of Astronomical Observatory)  
RADE PAVLOVIĆ
4. Prize for the contribution to the development of the Astronomical Observatory  
ASTRONOMICAL SOCIETY "RUDJER BOŠKOVIĆ"

### DIRECTOR

Milan S. Dimitrijević

### DIRECTORIAL BOARD

Zoran Knežević - President

Olga Atanacković-Vukmanović - Vice President

Stevan Djeniže

Gojko Djurašević

Svetislav Krstić

Svetozar Miljević

Slobodan Ninković

Slobodan Žegarac

### JOINT SCIENTIFIC COUNCIL OF ASTRONOMICAL OBSERVATORY, GEOMAGNETIC INSTITUTE AND SEISMOLOGICAL INSTITUTION

Milan S. Dimitrijević - President

Slobodan Ninković - Vice President

Olga Atanacković-Vukmanović

Ljiljana Cander

Stevan Djeniže  
Aleksandar Djordjević  
Gojko Djurašević  
Davorka Grubor  
Slobodan Jankov  
Zoran Knežević  
Aleksandar Kubičela  
Anatolij A. Mihajlov  
Georgije Popović  
Sofija Sadžakov  
Božidar Stanić  
Desanka Šulić  
Ištvan Vince

#### SCIENTIFIC COUNCIL OF ASTRONOMICAL OBSERVATORY

Ištvan Vince - President since 9.05.1997  
Slobodan Ninković - President up to 9.05.1997  
Gojko Djurašević - Vice President  
Milan S. Dimitrijević  
Slobodan Jankov  
Zoran Knežević  
Georgije Popović  
Luka Č. Popović

#### STAFF AND ORGANISATION OF ASTRONOMICAL OBSERVATORY IN 1997

Dr Milan S. Dimitrijević (Director)

#### SCIENTIFIC DIVISION

##### DEPARTMENT FOR ASTROPHYSICS

Dr Ištvan Vince (Head of department)  
Dr Milan S. Dimitrijević  
Dr Gojko Djurašević  
Dr Slobodan Jankov  
Dr Luka Č. Popović  
M.Sc. Milan Ćirković since 15.II.1997  
M.Sc. Sanja Erkapić  
M.Sc. Darko Jevremović  
M.Sc. Silvana Nikolić  
M.Sc. Ljiljana Skuljan  
Snežana Marković-Kršljanin



## DEPARTMENT FOR DYNAMICAL ASTRONOMY

Dr Georgije Popović (Head of department)

Dr Zoran Knežević

Dr Slobodan Ninković

M.Sc. Dragomir Olević

M.Sc. Rade Pavlović

M.Sc. Vojislava Protić-Benišek

M.Sc. Danilo Zulević

Veselka Trajkovska

Vesna Živkov since 1.II.1996

## DEPARTMENT FOR ASTROMETRY

M.Sc. Ivan Pakvor (Head of Department)

M.Sc. Zorica Cvetković

M.Sc. Miodrag Dačić

Nataša Popović since 15.II.1997

## COMPUTING CENTER

Vera Sekulović (Head of Computing Center) retired since 30.XII.1997

## LIBRARY

Dojna Petrović (Head of Library) passed away 11.VIII.1997

Vesna Mijatović (librarian)

## PROFESSIONAL SERVICES DIVISION

### TIME KEEPING AND GEOGRAPHIC COORDINATES DETERMINATION SERVICE

M.Sc Goran Damljanović (Head of The Service, M.Sc since 26.VI.1997)

M.Sc Bora Jovanović (M.Sc. since 27.VI.1997)

Djuro Božičković

Leposava Djurović retired since 1.VIII.1997

Predrag Jovanović since 1. I 1996.

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Sreten Stepanović (Secretary – Head of The Service)

Gordana Gajić (Technical secretary)

SECURITY SERVICE

Radivoj Cicvara (security)

Stajka Novaković (telephonist)

MAINTENANCE SERVICE

Jelena Pešić

Momčilo Trandafilović up to 2.VI.1997

ACCOUNT - KEEPING SERVICE

Slavica Pavić (Head of Service)

Gordana Dakić (bookkeeper – accountant)

TECHNICAL SERVICE

Čedomir Šaponja (Head of The Service) retired since 30.XII.1997

Vladimir Savković (electrotechnician)

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**ПУБЛИКАЦИЈЕ АСТРОНОМСКЕ ОПСЕРВАТОРИЈЕ У БЕОГРАДУ**  
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№ 20 (1975)

Editor : Dj. Teleki

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Lj. A. Mitić

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Sofija N. Sadžakov

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Editor : Dj. Teleki

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Jelisaveta Arsenijević

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ASTROCLIMATIC EXPLORATIONS FOR SITE SELECTION OF THE HIGH  
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Vojislava Protić-Benišek

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Editor : G. M. Popović

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Božidar Popović

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Editor : G. Teleki

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**№ 37 (1989)**

Vladimir Kršljanin

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**№ 38 (1990)**

S. N. Sadžakov, M. D. Dačić

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Milan S. Dimitrijević

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Editors : G. Teleki and B. Ševarlić

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Gojko Djurašević

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Editors : O. Atanacković-Vukmanović and M. S. Dimitrijević  
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Editors : M. S. Dimitrijević and D. Djurović  
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Editors : I. Vince, M. S. Dimitrijević and L. Balázs  
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Editors : M. S. Dimitrijević and L. Č. Popović  
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Editors : M. S. Dimitrijević and L. Č. Popović  
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Editors : V. S. Burakov and M. S. Dimitrijević  
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In memoriam of M. A. Elyashevich, academician of Belarus AS

№ 54 (1996)

Editors : M. Vukićević-Karabin and Z. Knežević  
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Editors : M. S. Dimitrijević, J. Milogradov-Turin and L. Č. Popović  
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Editors : Luka Č. Popović and Milivoje Ćuk

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Astronomija – Bibliografije

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**Fig. 1.** *Dr Gojko Djurašević, the winner of the prize for science for 1997. (Author of all photos is Miodrag Dačić).*



**Fig. 2.** *Mr Zorica Cvetković, the winner of the prize for science for youngs for 1997.*



**Fig. 3.** *Dr Slobodan Ninković handing the prize for the contribution to the development of Astronomical Observatory for 1997 to representatives of the Astronomical Society "Rudjer Bošković". From left to right Zoran Knežević, Jelena Milogradov-Turin the head of the People's Observatory, Milan Dimitrijević, President of the Astronomical society "Rudjer Bošković", Slobodan Ninković, Luka Popović.*



*Fig. 4. M.Sc. Rade Pavlović, the winner of the prize for the contribution to the development of the Astronomical Observatory.*



*Fig. 5. Academician Dušan Kanazir, Minister of Science and Technology of Serbia, opening at the celebration of 110th anniversary of the Astronomical Observatory and the conference "Development of Astronomy among Serbs". 7. IV 1997.*



*Fig. 6. Celebration of 110th anniversary of the Astronomical Observatory – opening of the conference "Development of Astronomy among Serbs". From left to right Zoran Knežević, Jelena Milogradov-Turin, Milan Dimitrijević, Slobodan Ninković, Luka Popović.*



**Fig. 7.** 7. IV 1997. Dr Zoran Knežević handing to Vera Sekulović a recognition for her more than 30 years collaborating at Observatory.



**Fig. 8.** 7. IV 1997 Dr Zoran Knežević handing to Radó Cicvara a recognition for his more than 30 years service at Observatory.



**Fig. 9.** 7. IV 1997. Dr Zoran Knežević handing to Ivan Pakvor a recognition for his more than 30 years collaborating at Observatory.



**Fig. 10.** 7. IV 1997 Dr Zoran Knežević handing to Georgije Popović a recognition for his more than 30 years collaborating at Observatory.





*Fig. 11. 7. IV 1997. Sitting in the front row: Mr Vladimir Kršljanin, Dr Ratko Uzunović, Vice minister of Serbia for science and technology, academician Dušan Kanazir Serbian minister for science and technology, Miodrag Mitrović former director of Astronomical Observatory, secretary of the Ministry for development, science and environment of Yugoslavia, Dr Kosta Andrejević, Jovan Popović director of Archives of Yugoslavia.*



*Fig. 12. 7. IV 1997. Front row: Dr Djordje Mušicki, Umična Mušicki former fellow of the Astronomical Observatory, Ivan Mišković brother of the third director of the Observatory Vojislav Mišković, builder of the present Observatory.*



Fig. 13. Conference "Development of Astronomy among Serbs" Belgrade 7 -10. IV 1997. Chairman Dr Luka Popović and Samir Salim.



Fig. 14. Conference "Development of Astronomy among Serbs" Belgrade 7 - 10. IV 1997. Chairman Dr Sofija Sadžakov and Vesna Mijatović.



Fig. 15. 7. IV 1997. Dr Djordje Mušicki, M.Sc. Vojislava Protić-Benišek and academician Dušan Kanazir, Serbian Minister for Science and Technology.



Fig. 16. 7. IV 1997. Dr Gojko Djurašević and Armen Oskanjan (Byurakan, Armenia).



**Fig. 17.** Conference "Development of Astronomy among Serbs", Belgrade 7 - 10. IV 1997, Dr Milan S. Dimitrijević.



**Fig. 18.** Conference "Development of Astronomy among Serbs", Belgrade 7 - 10. IV 1997, Chairman Armen Oskanjan and M.Sc. Miodrag Dačić.



**Fig. 19.** Conference "Development of Astronomy among Serbs", Belgrade 7 - 10. IV 1997, Chairman Armen Oskanjan and Dr Jelena Milogradov-Turin.



**Fig. 20.** Conference "Development of Astronomy among Serbs", Belgrade 7 - 10. IV 1997, Aleksandar Tomić.



**Fig. 21.** Conference "Development of Astronomy among Serbs", Belgrade 7 - 10. IV 1997, Dr Božidar Jovanović (Novi Sad).



**Fig. 22.** Conference "Development of Astronomy among Serbs", Belgrade 7 - 10. IV 1997, M.Sc. Vojislava Protić-Benišek.



**Fig. 23.** Conference "Development of Astronomy among Serbs", Belgrade 7 - 10. IV 1997, Milan Jeličić showing a photo of Djordje Nikolić.



**Fig. 24.** Conference "Development of Astronomy among Serbs", Belgrade 7 - 10. IV 1997, M.Sc. Ivan Pakvor.



**Fig. 25.** Conference "Development of Astronomy among Serbs", Belgrade 7 - 10. IV 1997, Dr Luka Č. Popović.



**Fig. 26.** Conference "Development of Astronomy among Serbs", Belgrade 7 - 10. IV 1997, Milorad Djokić.



**Fig. 27.** 7. IV 1997. M.Sc. Vojislava Protić-Benišek, Umilna Mušicki former fellow of the Astronomical Observatory, Dr Djordje Mušicki.



**Fig. 28.** 7. IV 1997. Front row: Nataša Popović, Vesna Živkov, Vesna Mijatović (members of the LOC). Second row: Dr Luka Popović, Predrag Jovanović (members of the LOC), Milan Jeličić.



Fig. 29. 7. IV 1997. *Veselka Trajkovska, Nataša Popović, Predrag Jovanović.*

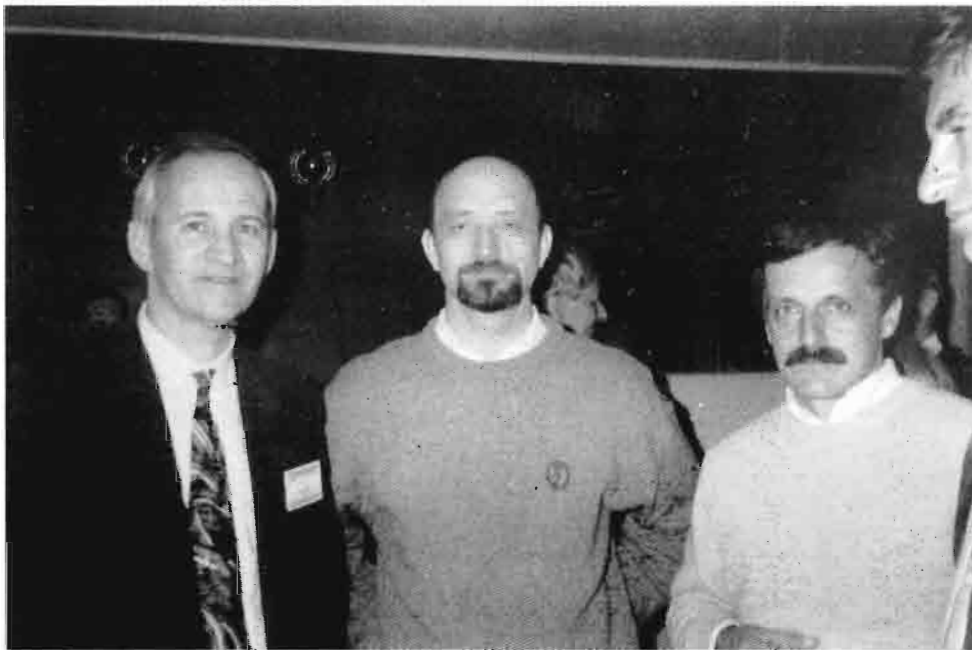


Fig. 30. 7. IV 1997. *On the left Aleksandar Tomić, on the right Milutin Tadić.*





*Fig. 31. 7. IV 1997. Dr Vukota Babović (Observatory "Belerfont", Kragujevac), Dr Radomir Djordjević, Dr Jelena Milogradov-Turin.*



*Fig. 32. 7. IV 1997. Armen Oskanjan (Byurakan, Armenia), M.Sc. Jelisaveta Arsenijević, Dr Aleksandar Kubičela.*



Fig. 33. 7. IV 1997. Dr Gligorije Perović, M.Sc. Zorica Cvetković.



Fig. 34. 7. IV 1997. Paraskeva Nikolić, former secretary of Astronomical Observatory, Milka Ilijev, former head of the account - keeping service of Astronomical Observatory, Miodrag Mitrović former director of Astronomical Observatory, Ljubica Nišević former accountant of Astronomical Observatory, Olga Marinković, former head of the account - keeping service.



**Fig. 35.** *Participants of the conference "Development of Astronomy among Serbs", Belgrade 7 - 10. IV 1997.*



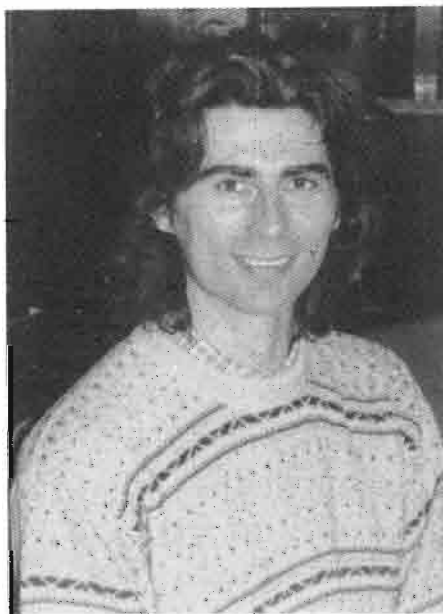
**Fig. 36.** *M.Sc. Miodrag Dačić, the author of photos appearing in this publication.*



**Fig. 37.** *Dr. Gojko Djurašević.*



**Fig. 38.** *Dr. Slobodan Ninković.*



**Fig. 39.** *M.Sc. Goran Damljanović.*



Fig. 40. *Slavica Pavić.*



Fig. 41. *Ružica Pavić.*



Fig. 42. *M.Sc. Vojislava Protić-Benišek.*



Fig. 43. *Vesna Mijatović.*



Fig. 44. *M.Sc. Dragomir Olević.*



Fig. 45. *M.Sc. Darko Jevremović.*

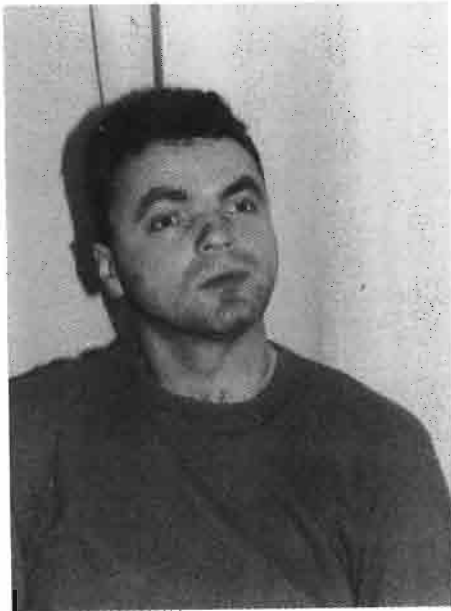


Fig. 46. *Sreten Stepanović.*



Fig. 47. *M.Sc. Miodrag Dačić.*



Fig. 48. *Vladimir Savković.*



Fig. 49. *M.Sc. Silvana Nikolić.*



Fig. 50. *M.Sc. Sanja Erkić.*



Fig. 51. *Nataša Popović.*



**Fig. 52.** 6. IV 1997. *Linda Karadjordjević, Tomislav Karadjordjević, Zorica Cvetković, Vojislava Protić-Benišek, Milan S. Dimitrijević, Jelisaveta Arsenijević.*



**Fig. 53.** 6. IV 1997. *Tomislav Karadjordjević, Luka Popović, Zorica Cvetković.*





**Fig. 54.** *Participants of the II Yugoslav Conference on Spectral Line Shapes, Bela Crkva 29. IX - 2. X 1997.*



Fig. 55. *II Yugoslav Conference on Spectral Line Shapes, Bela Crkva 29. IX - 2. X 1997.*



Fig. 56. *II Yugoslav Conference on Spectral Line Shapes, Bela Crkva 29. IX - 2. X 1997. The front row: Milan S. Dimitrijević, Luka Č. Popović, Ištvan Vince.*



Fig. 57. *Istvan Vince.*



Fig. 58. *Luka Č. Popović.*



Fig. 59. *Valentin M. Astashinskij (Institute of Molecular and Atomic Physics, Minsk, Belarus).*



Fig. 60. *Milan S. Dimitrijević.*



**Fig. 61.** *II Yugoslav Conference on Spectral Line Shapes, Bela Crkva 29. IX - 2. X 1997. Dr Istvan Vince.*



**Fig. 62.** *II Yugoslav Conference on Spectral Line Shapes, Bela Crkva 29. IX - 2. X 1997. Dr Anatolij A. Mihajlov.*



**Fig. 63.** *II Yugoslav Conference on Spectral Line Shapes, Bela Crkva 29. IX - 2. X 1997. Dragana Tankosić, Srdjan Samurović, Oliver Vince.*



**Fig. 64.** *II Yugoslav Conference on Spectral Line Shapes, Bela Crkva 29. IX - 2. X 1997. Dr Milan S. Dimitrijević, Dr Luka Č. Popović, Dr Anatolij A. Mihajlov.*



*Fig. 65. II Yugoslav Conference on Spectral Line Shapes, Bela Crkva 29. IX - 2. X 1997. Tanja Milovanov.*



*Fig. 66. II Yugoslav Conference on Spectral Line Shapes, Bela Crkva 29. IX - 2. X 1997. Dr Milan S. Dimitrijević, Dr Milan V. Popović, Dr Anatolij A. Mihajlov.*



*Fig. 67. II Yugoslav Conference on Spectral Line Shapes, Bela Crkva 29. IX - 2. X 1997. Excursion to Ram. Dr Jagoš Purić, Dr Milan S. Dimitrijević.*



*Fig. 68. II Yugoslav Conference on Spectral Line Shapes, Bela Crkva 29. IX - 2. X 1997. Dr Nikola Konjević.*



*Fig. 69. II Yugoslav Conference on Spectral Line Shapes, Bela Crkva 29. IX - 2. X 1997. Dr Anatolij A. Mihajlov.*



*Fig. 70. II Yugoslav Conference on Spectral Line Shapes, Bela Crkva 29. IX - 2. X 1997. Tanja Milovanov.*



*Fig. 71. II Yugoslav Conference on Spectral Line Shapes, Bela Crkva 29. IX - 2. X 1997. Excursion to Ram. Dr Ištvan Vince.*

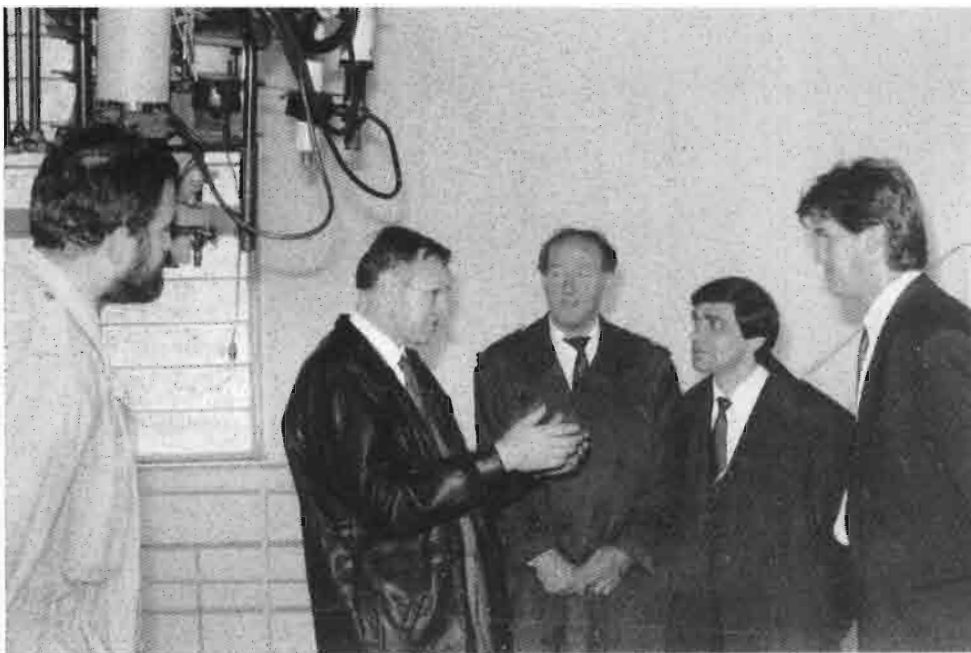


*Fig. 72. II Yugoslav Conference on Spectral Line Shapes, Bela Crkva 29. IX - 2. X 1997. Excursion to Ram. Dr Luka Ć. Popović, Dr Milivoje Ćuk, Dr Valentin M. Astashinskij, Dr Jagoš Purić, Dr Anatolij A. Mihajlov, Dr Aleksandar N. Chumakov.*





Fig. 73. 3. X 1997. Dr Aleksandar N. Chumakov, Milorad M. Kuraica, Dr Valentin M. Astashinskij, Dr Luka Č. Popović, Dr Jagoš Purić.



**Fig. 74.** 3. X 1997. *Milorad M. Kuraica, Dr Aleksandar N. Chumakov, Dr Jagoš Purić, Dr Valentin M. Astashinskij, Dr Luka Č. Popović.*



**Fig. 75.** 3. X 1997. *Dr Aleksandar Kubičela, Dr Aleksandar N. Chumakov, Dr Jagoš Purić, Milorad M. Kuraica.*



**Fig. 76.** 23. X 1997. *Promotion of Publications of Astronomical Observatory at Belgrade Book Fair. Milan S. Dimitrijević, Jelena Milogradov-Turin, Luka Ć. Popović.*



**Fig. 77.** *Commemoration of Prof. Dr Božidar Popović 4. XI 1997, Mike Kuzmanoski and Leposava Djurović.*



Fig. 78. *Vladimir Savković.*



Fig. 79. *Vojislava Protić-Benišek, Sreten Stepanović, Jelena Pešić.*