



# ACTIVITIES OF THE GROUP FOR ASTRONOMICAL SPECTROSCOPY 2005-2008

Milan S. Dimitrijević<sup>1</sup>, Luka Č. Popović<sup>1</sup>, Darko Jevremović<sup>1</sup>, Miodrag Dačić<sup>1</sup>, Predrag Jovanović<sup>1</sup>, Andjelka Kovačević<sup>2</sup>, Saša Simić<sup>3</sup>, Dragana Ilić<sup>2</sup>, Zoran Simić<sup>1</sup>, Edi Bon<sup>1</sup>, Nataša Gavrilović<sup>1</sup>, Jelena Kovačević<sup>1</sup>, Nenad Milovanović<sup>1</sup>, Dragana Tankosić<sup>1</sup> and Marko Stalevski<sup>1</sup>

<sup>1</sup>Astronomical Observatory, Volgina 7, 11060 Belgrade, Serbia

<sup>2</sup>Department of Astronomy, Faculty of Mathematics, Studentski trg 16, 11000 Belgrade, Serbia

<sup>3</sup>Department of Physics, Faculty of Sciences, Radoja Domanovića 12, 34000 Kragujevac, Serbia



Milan S. Dimitrijević<sup>1</sup>



Zoran Simić<sup>1</sup>



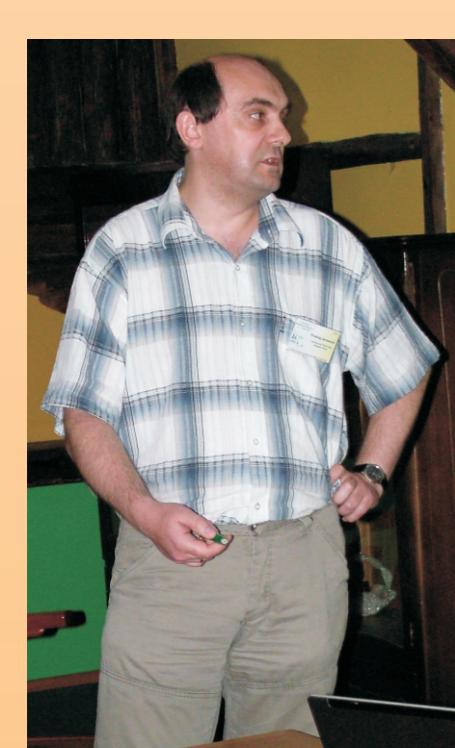
Nataša Gavrilović<sup>1</sup>



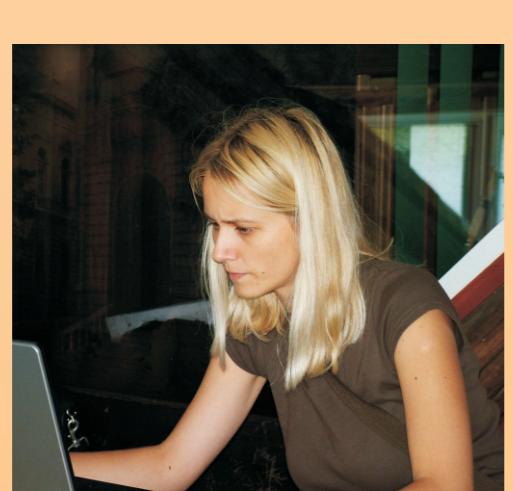
Miodrag Dačić<sup>1</sup>



Nenad Milovanović<sup>1</sup>



Predrag Jovanović<sup>1</sup>



Dragana Ilić<sup>2</sup>



Darko Jevremović<sup>1</sup>



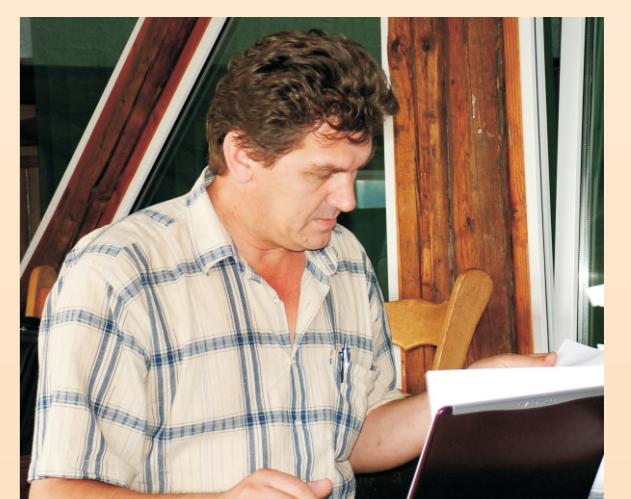
Jelena Kovačević<sup>1</sup>



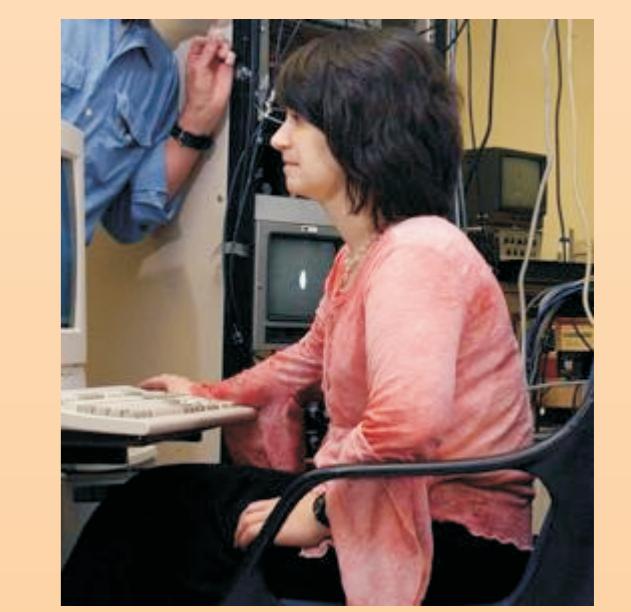
Andjelka Kovačević<sup>2</sup>



Edi Bon<sup>1</sup>



Luka Č. Popović<sup>1</sup>



Marko Stalevski<sup>1</sup>



Dragana Tankosić<sup>1</sup>

## CONFERENCES

5<sup>th</sup> SERBIAN CONFERENCE ON SPECTRAL LINE SHAPES IN ASTROPHYSICS,  
Vršac, June 6-10, 2005.

РАЗВОЈ АСТРОНОМИЈЕ КОД СРБИЈА IV,

Београд, April 22-26, 2006.

VI SERBIAN-BELARUSSIAN SYMPOSIUM ON PHYSICS AND DIAGNOSTICS OF LABORATORY AND ASTROPHYSICAL PLASMAS (PDP-V'2004),

Beograd, August 22-25, 2006.

6<sup>th</sup> SERBIAN CONFERENCE ON SPECTRAL LINE SHAPES IN ASTROPHYSICS,

Sremski Karlovci, June 11-15, 2007.

THE FIRST SUMMER SCHOOL IN ASTRONOMY AND GEOPHYSICS,

Beograd, August 6-10, 2007.

РАЗВОЈ АСТРОНОМИЈЕ КОД СРБИЈА V,

Београд, April 18-22, 2008.

6<sup>th</sup> SERBIAN-BULGARIAN ASTRONOMICAL CONFERENCE,

Beograd, May 7-11, 2008.

24<sup>th</sup> SUMMER SCHOOL AND INTERNATIONAL SYMPOSIUM ON THE PHYSICS OF IONIZED GASES,

Novi Sad, August 25-29, 2008.

Project 146001-Papers in the leaded international journals (2006-2007)

R51a 1. M. M. Abbot, D. Tankosić, P. D. Craven, J. F. Spain, A. Leclair, E. A. West, J. C. Weingartner, A. G. G. M. Tielens, J. A. Nuth, R. P. Ciarniello, and Gerakinos: PHOTOELECTRIC EMISSION MEASUREMENTS ON THE ANALOGS OF INDIVIDUAL COSMIC DUST GRAINS, *Astrophysical Journal*, **645** (2006), 324-336.

2. M. S. Dimitrijević, L. Č. Popović, J. Kovačević, M. Dačić, D. Ilić: 2007, THE FLUX RATIO OF THE [OIII] LAMBDA 4959/5077 LINES IN AGN: COMPARISON WITH THEORETICAL CALCULATIONS, *Monthly Notices of the Royal Astronomical Society*, **374**, 1181-1184.

3. C. Yuferov, M. S. Dimitrijević, M. C. Garcia, M. D. Calzada: 2007, USING THE VAN DER WAALS

BROADENING OF THE SPECTRAL ATOMIC LINES TO MEASURE THE GAS TEMPERATURE OF AN ARGON MICROWAVE PLASMA AT ATMOSPHERIC PRESSURE, *Spectrochimica Acta B*, **62**, 169-176.

4. R. Hamdi, N. Ben Nessib, M. S. Dimitrijević, S. Sahal Bréchet: 2007, STARKE BROADENING OF THE SPECTRAL LINES OF Ne V, *Astrophysical Journal Supplement Series*, **170**, 243-250.

5. A. Mihajlov, Lj. M. Ignatović, M. S. Dimitrijević: 2007, THE INFLUENCE OF H<sup>+</sup>-PHOTO

DISCRASTION AND H<sup>+</sup> RADATIVE COLLISIONS ON THE SOLAR ATMOSPHERE OPACITY IN UV AND

VUV REGIONS, *Astrophysics and Astrophysics*, **469**, 740-754.

6. M. S. Dimitrijević, T. Ryabchikova, Z. Šimić, L. Č. Popović, M. Dačić: 2007, THE INFLUENCE OF STARK

BROADENING ON CR II SPECTRAL LINE SHAPES IN STELLAR ATMOSPHERES, *Astrophysics and Astrophysics*, **469**, 681-688.

7. A. Mihajlov, D. Jevremović, P. Hauschildt, M. S. Dimitrijević, Lj. M. Ignatović, F. Alard: 2007, INFLUENCE

OF CHEMI-IONIZATION AND CHEMI-RECOMBINATION PROCESSES ON HYDROGEN LINE SHAPES IN M

DWARFS, *Astronomy and Astrophysics*, **471**, 671-673.

8. A. Dotter, B. Chaboyer, J. W. Ferguson, H. Lee, G. Worthey, D. Jevremović, E. Baron: 2007, STELLAR

SURVEY OF GALACTIC GLOBULAR CLUSTERS. II. STELLAR EVOLUTION TRACKS, ISOCHEMES, LUMINOSITY FUNCTIONS, AND SYNTHETIC HORIZONTAL-BRANCH MODELS, *Astronomical Journal*, **134**, 376-390.

9. A. Dotter, B. Chaboyer, J. W. Ferguson, H. Lee, G. Worthey, D. Jevremović, E. Baron: 2007, STELLAR

POPULATION MODELS AND INDIVIDUAL ELEMENT ABUNDANCES. I. SENSITIVITY OF STELLAR

EVOLUTION MODELS, *Astrophysical Journal*, **666**, 103-412.

10. A. Kováčević: 2007, GRAVITATIONAL EFFECTS OF MINOR PLANETS AND THEIR MASS

DETERMINATION, *Publications of the Astronomical Society of Pacific*, **119**, 134.

R51b 1. H. Elabidi, N. Ben Nessib, M. S. Dimitrijević: ELECTRON IMPACT BROADENING OF MULTICHARGED ION

LINES OF ASTROPHYSICAL INTEREST: NE VII, NE VIII, AND Si XI, *New Astronomy*, **12** (2006), 64-70.

2. Z. Šimić, M. S. Dimitrijević, L. Č. Popović, M. Dačić: STARK BROADENING PARAMETERS FOR Cu III,

Zn III AND Se III LINES IN LABORATORY AND STELLAR PLASMA, *New Astronomy*, **12** (2006), 187-197.

3. L. Č. Popović, S. D. Č. Popović, S. Christova, S. Sahal Bréchet: 2007, STARK BROADENING OF VISIBILE AR I SPECTRAL

LINES, *Planetary and Space Science*, **75**, 809-819.

4. E. Lyratzi, E. Danezis, L. Č. Popović, M. S. Dimitrijević, D. Nikolaidis, A. Antoniou: 2007, THE COMPLEX

STRUCTURE OF THE Mg II Iumbda 2795.523, 2802.698 Å REGIONS OF 64 BE STARS, *Publications of the Astronomical Society of Japan*, **59**, 357-373.

5. E. Danezis, D. Nikolaidis, E. Lyratzi, L. Č. Popović, M. S. Dimitrijević, A. Antoniou, E. Theodouliou: A NEW

MODEL FOR THE STRUCTURE OF THE DACS AND SAC'S REGIONS IN THE Oe AND Be STELLAR

ATMOSPHERES, *Publications of the Astronomical Society of Japan*, **59**, 953-964.

6. A. N. Klyucharev, N. B. Bezborodov, A. G. Matveev, A. M. Mihajlov, Lj. M. Ignatović, M. S. Dimitrijević: RATE

COEFFICIENTS FOR THE CHEMI-IONIZATION PROCESSES IN SODIUM- AND OTHER ALKALI-METAL

GEOCOSMAL PLASMAS, *New Astronomy Review*, **51** (2007), 547-562.

7. M. M. Abbot, D. Tankosić, P. D. Craven, J. F. Spain, A. Leclair, E. A. West: 2007, LUNAR DUST CHARGING BY

PHOTOELECTRIC EMISSION, *Planetary and Space Science*, **55**, 953-965.

8. L. Č. Popović, M. S. Dimitrijević, Z. Šimić, M. Dačić, A. Kováčević, S. Sahal Bréchet: 2008, STARK

BROADENING AND HFS OF Mn II, *New Astronomy*, **13**, 85-92.

Project 146002-Papers in the leaded international journals (2006-2007)

1. Popović, L. Č., Jovanović, P., Mediavilla, E., Zakharov, A. F., Abajas, C., Munoz, J. A., Chartas, G.: 2006, "A study of the correlation between the amplification of the FeK alpha line and the x-ray continuum of quasars due to microlensing", *Astrophysical Journal*, **637** (2), 620-630.

2. Popović, L. Č., Jovanović, P., Petrović, T., Shalyapin, V. N.: 2006, "Amplification and variability of the AGN X-ray emission due to microlensing", *ASTRONOMISCHE NACHRICHTEN*, **327** (10), 981-984.

3. Šimić, Z., Popović, L. Č., Andersen, M. I., Christensen, L.: 2007, "Mechanism of light curve variability in the gamma ray bursts", *ASTRO-PHYSICS AND SPACE SCIENCE*, **309** (1-4), 173-177.

4. Šimić, Z., Dimitrijević, M. S., Popović, L. Č., Dačić, M.: 2006, "Stark broadening parameters for Cu III, Zn III and Se III lines in laboratory and stellar plasma", *NEW ASTROPHY*, **12** (3), 187-191.

5. Smirnova, A. A., Gavrilović, N., Moiseev, A. V., Popović, L. Č., Afanasev, V. L., Jovanović, P., Dačić, M.: 2007, "The gas kinematics in the Mrk 533 nucleus and circumnuclear region: a gaseous outflow", *Monthly Notices of The Royal Astronomical Society*, **377** (2), 480-490.

6. Bon, E., Popović, L. Č., Ilić, D., Mediavilla, E.: 2006, "Stratification in the broad line region of AGN: The two-component model", *New Astronomy Reviews*, **50** (9-10), 716-719.

7. Danezis, E., Nikolidis, D., Lyratzi, E., Popović, L. Č., Dimitrijević, M. S., Antoniou, A., Theodosiou, E.: 2007, "A new model for the structure of the DACS and SACs regions in the Oe and Be stellar atmospheres", *Publications of The Astronomical Society of Japan*, **59** (4), 827-834.

8. Dimitrijević, M. S., Popović, L. Č., Kovačević, J., Dačić, M., Ilić, D.: 2007, "The flux ratio of the [O III]λλ 4959, 5077 Å lines in AGN: Comparison with theoretical calculations", *Monthly notices of The Royal Astronomical Society*, **374** (1), 1181-1184.

9. Dimitrijević, M. S., Ryabchikova, T., Šimić, Z., Popović, L. Č., Dačić, M.: 2007, "The influence of Stark broadening on CrII spectral line shapes in stellar atmospheres", *Astronomy & Astrophysics*, **469** (2), 681-686.

10. Ilić, D., Popović, L. Č., Bon, E., Mediavilla, E., Chavushyan, V. H.: 2006, "Complex emission line region of Mrk 817", *Monthly notices of The Royal Astronomical Society*, **371** (4), 1610-1616.

11. Jovanović, P.: 2006, "Influence of Gravitational Microlensing on X-Ray Radiation from Accretion Disks of Active Galaxies", *The Publications of the Astronomical Society of the Pacific*, **118** (842), 656-657.

12. La Mura, G., Popović, L. Č., Ciroi, S., Rafanelli, P., Ilić, D.: 2007, "Detailed Analysis of Balmer Lines in a Selected Sample of 90 Broad Line AGN", *Astrophysical Journal*, **671**, 104-117.

13. Lyratzi, E., Danezis, E., Popović, L. Č., Dimitrijević, M. S., Nikolidis, D., Antoniou, A.: 2007, "The complex structure of the Mrk 533, 2795.523, 2802.698 Å regions of 64 Be stars", *Publications of The Astronom*