F I N A L S C I E N T I F I C R E P O R T

Subject: UNESCO-BRESCE- IBSP project, title:

"Enlargement of Collaboration in Ground-Based Astronomical Research in SEE Countries: Variable Stars Research and Studies of Small Bodies of the Solar System"

THIS PROJECT IS SUPPORTED BY UNESCO-BRESCE

This project is a major regional activity, including countries from the SEE and Ukraine. Meanwhile, with the admission of the new EU – members, there are 3 – participant countries, members of the EU: Bulgaria, Greece and Romania. All the project activities have been steered by the regional body of SREAC – Sub- Regional European Astronomical Committee, established to support the astronomical research in the SEE – countries.

The IBSP – project is supported by the following main institutions:

1. **Institute of Astronomy, Bulgarian Academy of Sciences, Bulgaria;**
2. **Faculty of Science, Shumen University, Bulgaria;**
3. **Department of Physics, Section of Astrophysics, Astronomy and Mechanics, Aristotelian University of Thessaloniki, Greece;**
4. **Department of Astrophysics, Astronomy and Mechanics, National and Kapodistrian University of Athens, Greece;**
5. **Institute of Physics, Faculty of Natural Sciences, St. Cyril and Methodius University, FYR Macedonia;**
6. **Astronomical Institute of the Romanian Academy, Romania.**
7. **Astronomical Observatory Belgrade, Serbia;**
8. **Astrophysics Research Center (CAAM) and COMU Remote Sensing Center (CUM), Canakkale University, Turkey;**
9. **Science Faculty, Astronomy and Space Sciences Department, Ege University, Turkey;**
10. **TUBITAK National Observatory, Scientific and Technical Research Council of Turkey (TUBITAK), Akdeniz Universitesi Yerleskesi, Turkey;**

Associated members to this project are:

1. **Research Institute, Nikolaev Astronomical Observatory, Ukraine;**
2. **Institute of Astronomy, Karazin Kharkiv National University, Ukraine;**
3. **Kazan State University, Russia;**
4. **Sternberg Astronomical Institute, Moskow State University, Russia;**
5. **Institute of Theoretical Physics and Astrophysics, University of Kiel, Germany;**
6. **Baja Astronomical Observatory of the Bocs-Kiskun County, University of Szegedi, Hungary.**

This project was accepted for implementation in late 2005 and received financial support by UNESCO-BRESCE (UNESCO Office in Venice), as follows:

2006: USD 25 000 (twenty five thousand US dollars)
2007: USD 20 000 (twenty thousand US dollars)

The purpose of this regional project is to foster scientific collaboration in countries of SEE and Ukraine in the field of Astronomy. It is also aimed at helping participating countries to solve problems in astronomical research and astronomical education, which are common for countries in transition to market economy.
The only large astronomical observatory at the start of this project in the SEE region is the Rozhen National Astronomical Observatory, equipped with 4 telescopes:
2 m RCC telescope, 60 cm photometric telescope, 50/70 cm Schmidt-telescope, and a solar coronograph.. In 2007, the new Greek telescope Aristarhos (2.3 m) became operational, which opens new possibilities for future collaboration. It is therefore only natural that the Rozhen NAO in Bulgaria became a regional center for the implementation of this project. In 2004, the astronomical community from the SEE gathered at Rozhen NAO for the Balkan Astronomical Meeting, with more than 90 participants. This meeting could be regarded as a precursor of the present IBSP – project.
During the implementation of this project, following activities were carried out, according to the principal objectives of the project:

1. **Research programs.**

Observing campaigns were carried out, using all observing facilities of the Rozhen Nat. Astronomical Observatory, (Bulgaria)., the Astronomical Observatory of Belogradchik, TUBITAK National Observatory (Turkey), Nikolaev Astronomical Observatory (Ukraine), Krimean Astrophysical Observatory (Ukraine), Athens University Observatory (Greece), etc. The research programs include: CCD measurements of binary stars and multiple stars, studies of asteroids and comets, studies of active giants with chromospheric activity, studies of dwarf novae stars, cataclysmic variable stars, recurrent novae stars, Algol-type binaries, RS CVn –type stars, etc. It is not possible to review all the results obtained in this Report. Some of these results are:

1. Position and angle separation for 70 multiple stars (129 pairs) have been obtained (Pavlovic, R. et al 2005, "CCD Measurements of Double and Multiple Stars at NAO Rozhen", Serb. Astron. J. vol 171, p.49; Cvetkovic, Z. et al, 2006, "CCD Measurements of Double and Multiple Stars at NAO Rozhen. II.", Serb. Astron. J. vol 172, p.53; Cvetkovic, Z. et al, 2007, "CCD Measurements of Double and Multiple Stars at NAO Rozhen. III.", Serb. Astron. J. vol 174, p.83.), using CCD observations from the 2 m telescope of Rozhen Nat. Astronomical Observatory.
2. Structures in the coma of comet C/NEAT (2001 Q4) are found. (Borisov, G. and Bonev, T., 2006, "Structures in the Coma of Comet C/NEAT (2001 Q4): Analysis and Monte Carlo Modeling", 5th Bulgarian-Serbian Astronomy Conference, Astronomy and Spave Science, Sofia.).
3. Photometry of trans-Neptunian object 20 000 VARUNA is obtained, which reveals an opposition surge with amplitude of 0.2 mag . This is markedly different from other dark asteroid effects in opposition. (Belskaya, I.N. et al, 2006, "Low Phase

Angles Effects in Photometry of Trans-Neptunian Objects: 20000 Varuna and 19308 (1996 TO), 5th Bulgarian-Serbian Astronomy Conference, Sofia).

4. Photometry of the split comet 73P/ Schwassmann-Wachmann 3 is obtained , using the 2 m telescope of Rozhen NAO. Possible correlations between the activity (with decreasing heliocentric distance) and the morphological changes of the subnuclei environment of the comet (Bonev, T. et al, 2006, "Photometry of the split Comet Schwassmann-Wachmann 3 from November 2005 to March 2006", 5th Bulgarian-Serbian Astronomy Conference, Sofia).
5. First results of selected asteroid Observations with RTT 150 have been presented by an international team (Turkey, Ukraine, Russia) with special attention to the NEAs-the near Earth asteroids (Aslan, Z. et al, 2006, "Observational Programs and First Results of Selected Asteroid Observations at RTT 150 within International Cooperation", Roman. Astron. J. vol 16 Supplement, p. 11.
6. A long-term photometric study of the active giant stars FK Com and HD 199178 has been carried out. Photometry from Rozhen NAO and from published sources has been used. The conclusion is reached that the flip-flop model for FK Com is inconsistent. The observations for FK Com but also for HD 199178 are consistent with a migrating dark spot at high latitude for each star. (Panov, K and Dimitrov, D. 2007, "Long-term Photometric Study of FK Comae Berenices and HD 199178", Astronomy and Astrophysics vol 467, p. 229.). See also the report: K. Panov, D. Dimitrov, 2007, "The controversial case of FK Comae Berenices", 5th SREAC meeting, Athens (to be published in Roman. Astron. J., proceedings).
7. Optical observations of the newly discovered by the Hipparcos satellite eclipsing binary star HIP 12039 = V 376 And have been carried out by an international team. (Bulgaria, Greece and Romania) Dumitrescu et al, 2006, "Analysis of the First Ground Based Observations of the Eclipsing Binary HIP 12039 (V376 And)", Roman. Astron. J. vol 16, p75)
8. Observations and Interpretation of light and velocity curves of some interesting variable stars by an international team "The Binary stars group" was presented. (Bulgaria, Serbia, Greece and Hungary), Hegedus et al, 2006, "First Results of the Central-East-South- European Binary Star Group", Astrophysics and Space Science, vol 304, p 51.
9. Interpretation of light curves of binary stars with possible accretion disk was presented by an international group (Serbia, Greece, and Hungary), Djurasevic, G., et al, 2005, "Possible accretion disk in DL Cygni system?", New Astronomy, vol 10, p517.
10. Collaboration between Romania and Greece in observations and light curve analysis of some binary stars, either already known or newly discovered by the Hipparcos satellite. In the same collaboration, subjects regarding the history of Astronomy have been studied. Rovithis, P. et al, 2006, "Observations at Athens and Bucarest Observatories: The Eclipsing Binary AW UMa", Roman. Astron. J. vol 15, p.113; Dumitrescu, A. et al, 2006, "Hipparcos Data Analysis of the Contact Binary II UMa", AIP vol 895, p.259; Rovithis-Livaniou, H. et al, 2007, "Four Contact Binaries as seen by Hipparcos", Roman. Astron. J. (in press); Rovithis,P. et al, 2007, "Did the ancients know America?", 5th SREAC meeting, Athens (to be published in Romanian Astron. J., proceedings).

11. Collaboration on binary stars studies between Serbia and Greece. Djurasevic , G. et al, 2005, "Gravity Darkening in semi-detached Close Binaries TW And, TW Cas, AI Dra, and UX Her ", ARBI vol 20, p.273; Djurasevic, G., et al, 2005, "UV Leo: The binary with the two suns", Astrophysics and Space Science vol 296, p. 311; Rovithis-Livaniou, H. et al, 2005, "Period Study of the Contact Binary AW UMa", ASP Conference Ser. Vol 335, p.251; Djurasevic, G. et al, 2006, "Gravity-Darkening exponents in semi-detached Binary Systems from their photometric Observations. Part II.", Astronomy and Astrophysics vol 445, p.291; Tsantalis, S. et al, 2006, "Radiation Presure and Surface Gravity of Close Binaries: First Results from observational Data Analysis", Astrophysics and Space Science vol 304, p.117.

12. Dwarf-novae studies in the collaboration between Greece and Russia (Sternberg State Astronomical Institute, Moskaw), Voloshina, I. et al, 2007, ("Short-term variability of the Dwarf Nava SS Cygni during outbursts", 5th SREAC meeting, Athens (to be published in Romanian Astron. J., proceedings).

13. The secular evolution of the stellar rotation through angular momentum loss was studied, with special emphasis on the Solar rotation. A large co-rotating distance of the magnetically driven wind around single stars was introduced to explain the large angular momentum loss from close binary systems (Demircan, O. et al, 2007, "Solar and Stellar Rotation", ASP Conference Ser. vol 370, p.169).

14. The phase-space structure in the Lennard-Jones-type problems was studied by Mioc V. et al, 2007 ("Phase-space structure in the Lennard – Jones-type problems", 5th SREAC meeting , Athens (to be published in Roman. Astron. J., proceedings).

15. Orbit determination with topocentric correction was studied by Knezevic, Z., 2007 ("Preliminary Orbit Determination with Topocentric Correction", 5th SREAC meeting, Athens (to be published in Roman. Astron. J., proceedings).

16. Observations of AD Leo in 2006-2007 have been obtained in Rozhen Nat. Astron. Observatory and in AO – Belogradchik as a part of observing campaigns for simultaneous observations of flare stars from several observatories. High speed photometric monitoring has been carried out. Enhanced flare activity of AD Leo was observed in January-March 2006, and optical oscillations were detected during a large flare in March, 2007. (Report by Konstantinova-Antova, R. et al, 2007, "Flare activity of AD Leo in the period 2006-2007", 5th SREAC meeting, Athens (to be published in Roman. Astron. J. proceedings).

17. A joint Serbian-Bulgarian-Turkish team of researchers studied photometric observations of the contact binaries: XY Leo, EE Cet, and AQ Psc. Djurasevic, G. et al, 2006, "A Photometric Study of the Contact Binaries: XY Leo, EE Cet and AQ Psc", PASA vol 23, pp 154-164. For XY Leo, a W-type contact binary in a marginal overcontact configuration was found. The study of EE Cet revealed a model of high-overcontact W-type system. AQ Psc was found in an overcontact configuration, too.

2. Conferences and meetings.

Many more results and papers can be found in the proceedings books of several regional meetings with respect to this project:

- **"SCIENTIFIC PROGRAMS AND ASTRONOMY EDUCATION IN SEE AND UKRAINE",** 2005, Sept. 16-18, Bucharest. Conference proceedings are published in Romanian Astronomical Journal, vol 16, Supplement, 2006.
- "**SOLAR AND STELLAR PHYSICS THROUGH ECLIPSES",** 2006, March 27-29, Side, Antalia, Turkey. Conference was combined with the 4th meeting of SREAC. Conference proceedings are published in: eds Demircan, O., Selam, S.O., and Albayrak, ASP Conf. Series, vol 370, 2007.
- **"ASTRONOMY AND SPACE SCIENCE",** the 5th Bulgarian-Serbian Conference , 2006, May 9-12, Sofia. (see application: program of the conference).
- **CMDA 2006 – INTERNATIONAL WORKSHOP ON ACTUAL PROBLEMS IN CELESTIAL MECHANICS AND DYNAMICAL ASTRONOMY",** 2006, May 25-27, University of Cluj-Napoca, Romania (see application: program of the conference)
- "**ENLARGEMENT OF COLLABORATION IN GROUND BASED ASTRONOMICAL RESEARCH IN SEE COUNTRIES: STUDIES OF THE NEAR-EARTH AND SMALL BODIES OF THE SOLAR SYSTEM",** 2006, Sept. 25-28, Nikolaev, Ukraine. This conference was dedicated to the 185 th anniversary of the Nikolaev astronomical observatory. Conference proceedings published in "Studies of the Near-Earth and Small bodies of the Solar System", Nikolaev, Atoll, 2007.
- "**OPTICON ENHANCEMENT MEETING",** 2007, June 21-22, Bucharest, Romania. (see application: Program of the meeting).
- **"LATEST PROGRESS IN ASTROPHYSICS"** (combined with the 5th meeting of SREAC), 2007, Oct 5-6, Athens, Greece.
- "**STUDYING NATURE THROUGH CENTURIES",** 2007, Oct. 16-20, Belgrade, Serbia. (see application: Program of the conference, see also: **www.aob.bg.ac.yu/centuries/index.php**
- **"PRACTICAL SCHOOL ON SPECTROSCOPY,** 2007, Oct. 22-28, Rozhen Nat. Astronomical Observatory, Bulgaria. (Report on this SCHOOL has been presented to UNESCO-BRESCE separately). See also: **www.astro.bas.bg/SREAC**

Programs of conferences in 2006 have already been sent to UNESCO-BRESCE with the PROGRESS REPORT (2006).
Regular meetings of scientists in the SEE were rare in the past years, prior to this project. The UNESCO-BRESCE support made it possible to organize meetings and schools for young astronomers and to achieve mobility of scientists for solving problems of common interest. This a very promising development that could change the strategy of Astronomy in SEE for the years to come.
Some of the conferences were combined with meetings of SREAC:

- 18 Sept., 2005, Bucharest, Romania, 3rd meeting of SREAC.
- 29 March, 2006, Side, Antalia, Turkey, 4th meeting of SREAC
- 6 Oct, 2007, Athens, Greece, 5th meeting of SREAC.

In 2006, the President of SREAC was Prof Dr Zeki Aslan, Turkey.
For 2007, the President of SREAC is Prof Dr H. Livaniou-Rovithis, Greece.
More information about activities of SREAC on:

www.astro.bas.bg/SREAC

3. The UNESCO-BRESCE GRANTS AND RESULTS

In 2006, the UNESCO-BRESCE granted to this project the total of **25 000 USD.** (first year of implementation). This grant was distributed in 6 separate contracts with UNESCO-Office in Venice, respectively with: Bulgaria, Greece, Romania, Serbia, Turkey and Ukraine. These individual contracts are, as follows:

Bulgaria: Building of an auto-guiding system for the 2 m telescope of Rozhen Nat. Astron. Observatory - 7500 USD

For details, see:

http://www.astro.bas.bg/AIJ/issues/n8/index.html

and http://www.astro.bas.bg/~tbonev/Autoguider/Autoguider.html

Greece: 2 – portable computers and one desk computer for data processing- 4500 USD

Romania: Remote control for the 60 cm telescope in AO Belogradchik and travel expenses for Romanian teams for observing campaigns in Bulgaria and Turkey – 5000 USD

Serbia: Portable computer for data processing - 2000 USD

Turkey: Support for organizing the conference "Solar and Stellar Physics through Eclipses", 2006 (see above) - 5000 USD

Ukraine: Support for organizing the conference "Enlargement of Collaboration in Ground Based Astronomical Research in SEE countries: Studies of the Near Earth and Small Bodies of the Solar System", 2006 (see above) - 1000 USD

All these contracts have been carried out and all reports have been submitted to UNESCO- Office in Venice. Two of the 6 contracts are connected with support of astronomical conferences, two other contracts deal with purchase of computers , one deals with the building of a new auto-guiding system for the 2 m telescope , which is now operational at the Rozhen Nat. Astron. Observatory. The last contract supports the building by Romanian colleagues of a guiding system for the Bulgarian 60 cm telescope in Belogradchik, as well as for travel expenses. The last contract should really be an example for collaboration: a Bulgarian telescope was being up-graded by a Romanian team, with the financial support of UNESCO-BRESCE.

In 2007, the UNESCO-BRESCE granted to this project the total of **20 000 USD.** (second year of implementation). This grant was distributed in 4 separate contracts with UNESCO-BRESCE (UNESCO Office in Venice) , respectively with: Bulgaria, Greece, Romania, and Serbia. These individual contracts are, as follows:

Bulgaria: Support for organizing a "Practical School on Spectroscopy", 22-28 Oct. 2007, Rozhen Nat. Astron. Observatory - 9000 USD

Greece: Support for organizing the conference "Latest Progress in Astrophysics ,combined with the 5th meeting of SREAC, 5-6 Oct. 2007, Athens - 9500 USD

Romania: Support for organizing the "OPTICON Enhancement meeting", 21-22 June, 2007, Bucharest - 500 USD
Serbia: Support for organizing the conference "Studying Nature through Centuries" Belgrade, dedicated to the 120th anniversary of the Astronomical Observatory of Belgrade, Serbia - 1000 USD

All these conferences and meetings have been successfully carried out, reports are now prepared and some are already sent to UNESCO-BRESCE.
An important point about the funding of this IBSP Project is the point of local resources of each participating country. Despite of the considerable financial difficulties, which are typical for all countries in transition to market economy, (except Greece) local resources have been used as salaries for the participants, as well as for maintenance and running costs for observatories used. The Institute of Astronomy, BAS, maintains the Rozhen Nat. Astron. Observatory. Turkish institutes and universities maintain the TUBITAK Nat. Astron. Observatory and the Canakkale Astronomical Observatory. The Astronomical Institute of the Romanian Academy maintains the Bucharest Observatory and Serbian colleagues maintain the Belgrade Observatory. The Research institute Nikolaev maintains the Nikolaev Astronomical Observatory. By the submission of this project, we elaborated on the local expenses of each participating country. Clearly, the input of local resources for implementation of this project is quite considerable.

4. Problems common for SEE countries.
I would like to point out again some of the most important problems:
- It is becoming increasingly difficult to subscribe for the astronomical journals, even for the main ones.
- Submitting of a paper to the main European journal, ASTRONOMY AND ASTROPHYSICS, requires page charges. Some general solution is necessary, e.g. each SEE country could join the editorial board with a respective yearly contribution, which will wave the page charges. It is essential for astronomers from the SEE to publish papers without financial restrictions. This is important for the EU as whole, I think so.
- Traveling and meeting people is essential for science, but is becoming increasingly more difficult, because of financial restrictions.
- Fast INTERNET connections are necessary, but not always available.
- Up-grading of observing facilities (telescopes and receivers). In SEE, there is a tradition for optical observations. During the last decades, many new windows were opened from space observatories at different wavelengths. However, the need for optical identification of the new and exotic x-ray and gamma-ray sources gives the optical astronomy new opportunities. Thus the need for optical observations and up-grade of optical facilities is obvious.
- Astronomical facilities in the SEE countries may not be the largest existing facilities, however, even medium-sized telescopes are very useful for research and educational purposes. Young people need a practice on a medium-sized telescope, before they go for the largest facilities.

5. Conclusions.

I am convinced that with these results achieved, the IBSP Project has been successfully accomplished. It created a new atmosphere of collaboration in Astronomy between countries from SEE and I hope very much that collaboration will continue.
The Universe is a giant laboratory, where "Nature performs experiments" under extreme physical conditions, which are not achievable in our physical labs. I am also convinced that Astronomy and Astrophysics (research and education) is going to be a top priority of the 21st century, providing physical sciences with new facts and new ideas.

On behalf of SREAC and all participants, I would like to express our gratitude to UNESCO-BRESCE for the financial support !

6. List of publications

Most of the project contributions are published in the respective proceedings books. Here is a list of publications that appeared in other journals:

G. Djurashevic, D. Dimitrov, B. Arbutina, B. Albayrak, and S.O. Selam, 2005, "A Study of Close Binary System EE Cet", Mem Soc. Astron. Ital., vol 7, pp 168-169.

G. Djurasevic, H. Rovithis-Livaniou, P. Rovithis, T. Borkovits, and I.B.Biro, 2005, "Possible accretion disk in DL Cygni system?", New Astronomy vol 10, p.517.

G. Djurasevic, D. Dimitrov, B. Arbutina, B. Albayrak, S.O. Selam, and O. Atanackovic-Vukmanovic, 2006, "A Photometric Study of the Contact Binaries: XY Leo, EE Cet and AQ Psc" , Publications of the Astronomical Society of Australia vol 23, pp154-164.

G. Djurasevic, H. Rovithis-Livaniou, P. Rovithis, N. Georgiades, and S. Erkapic, 2005, "Gravity Darkening in semi-detached Close Binaries TW And, TW Cas, AI Dra, and UX Her", ARBI vol 20, p.273.

G. Djurasevic, P. Rovithis, H. Rovithis-Livaniou, and E. Fragoulopoulou, 2005, "UV Leo: The binary with the two suns", Astrophysics and Space Science vol 296, p.311.

G. Djurasevic, H. Rovithis-Livaniou, P. Rovithis, N. Georgiades, S. Erkapic,, and R. Pavlovic, 2006, "Gravity-Darkening exponents in semi-detached Binary Systems from their photometric Observations. Part II.", Astronomy and Astrophysics vol 445, p.291.

A. Dumitrescu, M.D., Suran, S., Tsantilias, and H. Rovithis-Livaniou, 2006, "Hipparcos Data Analysis of the Contact Binary II UmA", AIP vol 895, P.259.

R. Pavlovic, Z. Cvetkovic, D. Olevic, A. Strigachev, G.M. Popovic, B. Novakovic, 2005, "CCD Measurements of Double and Multiple Stars at NAO Rozhen", Serbian Astron. Jour. vol 171, pp 49-53.

Z. Cvetkovic, B. Novakovic, A. Strigachev, G.M. Popovic, 2006, "CCD Measurements of Double and Multiple Stars at NAO Rozhen II.", Serbian Astron. Jour. vol 172, pp 53-58.

Z. Cvetkovic, R. Pavlovic, A. Strigachev, B. Novakovic and G.M. Popovic, 2007, Serbian Astron. Jour. vol 174, pp 83-88.

K. Panov and D. Dimitrov, 2007, "Long-Term Photometric Study of FK Comae Berenices and HD 199178", Astronomy and Astrophysics, vol 467, pp 229-235.

R. Popescu, P. Popescu, P. Paraschiv and A. Nedelcu, 2005, "Astrometry Test of MSCRED IRAF Software Package", Serbian Astron. Jour. vol 170, pp123-125.

T. Hegedus, T. Nusple, N. Markova, H. Markov, H. Rovithis-Livaniou, I. Vince and J. Vinko, 2005, "First Results of the Cental-East-South- European Binary Group", Syros conference (Greece), Sept. 16-18, published in: Astrophysics and Space Science, vol 304, pp51 – 53, 2006.

A Dumitrescu, M.D. Suran H. Rovithis-Livaniou and L. Iliev, 2006, "Analysis of the first ground based observations of the eclipsing binary Hip 12039 (V376 And)", Roman. Astron. J. vol. 16, pp75-81.

I. N. Belskaya, J.L. Ortiz, P. Rousselot, V. Ivanova, G. Borisov, V.G. Shevchenko, N. Peixinho, 2006, "Low Phase Angles Effects in Photometry of Trans-Neptunian Objects: 20000 Varuna and 19308 (1996 TO66)", Ikarus, vol 184, 277B.

P. Rovithis, A. Dumitrescu, H. Rovithis-Livaniou, G. Oprescu, and M.D. Suran, 2006, "Observations at Athens and Bucarest Observatories: The Eclipsing Binary AW Uma", Roman. Astron. J.. vol 15, p113.

H. Rovithis-Livaniou, S. Tsantilas, M.D. Suran, A. Dumitrescu, and P. Rovithis, 2007, "Four Contact Binaries as seen by Hipparcos", Roman. Astron. J. (in press).

P. Rovithis, H. Rovithis-Livaniou, and M. Stavinschi, 2007, "Did the ancients know America?", 5th SREAC meeting, Athens, (to be published in the Roman. Astron. J..)

H. Rovithis-Livaniou, S. Tsatilas, A. Kalimeris, P. Rovithis, G. Djurasevic, and I. Voloshina, 2005, "Period Study of the Contact Binary AW UMa", ASP Conference Ser. Vol 335, p.251.

S. Tsantilas, H. Rovithis-Livaniou, and G. Djurasevic, 2006, "Radiation Pressure and Surface Gravity of Close Binaries: First Results from Observational Data Analysis", Astrophysics and Space Science vol 304, p.117.

I. Voloshina, V. Meltov, H. Rovithis-Livaniou, 2007, "Short time Variability of Dwarf nova SS Cyg during outbursts", 5th SREAC meeting, Athens, to be published in Roman. Astron. J.

A. POP, V. TURCU
Double-Mode Pulsations of RZ Cephei?

In *Fifty Years of Romanian Astrophysics*, eds. C. Dumitrache, N.A. Popescu, M.D. Suran, V. Mioc, American Institute of Physics Conference Proceedings **895**, Subseries Astronomy and Astrophysics, 2007, ISBN 978-0-7354-0400-7, p. 241-246

A. POP, R. ROMAN
Light Curve Shape Variability of RZ Cephei. Preliminary Considerations
In *Fifty Years of Romanian Astrophysics*, eds. C. Dumitrache, N.A. Popescu, M.D. Suran, V. Mioc, American Institute of Physics Conference Proceedings **895**, Subseries Astronomy and Astrophysics, 2007, ISBN 978-0-7354-0400-7, p. 253-258

A. DUMITRESCU, M.D. SURAN, S. Tsantilas, H. Rovithis-Livaniou
Hipparcos Data Analysis of the Eclipsing Binary II UMa
In *Fifty Years of Romanian Astrophysics*, eds. C. Dumitrache, N.A. Popescu, M.D. Suran, V. Mioc, American Institute of Physics Conference Proceedings **895**, Subseries Astronomy and Astrophysics, 2007, ISBN 978-0-7354-0400-7, p. 259-262

A. POP, V. TURCU, D. MOLDOVAN
The Variability of the Pulsation Period of DL Cassiopeiae
In *Fifty Years of Romanian Astrophysics*, eds. C. Dumitrache, N.A. Popescu, M.D. Suran, V. Mioc, American Institute of Physics Conference Proceedings **895**, Subseries Astronomy and Astrophysics, 2007, ISBN 978-0-7354-0400-7, p. 263-266

A. NEDELCU, P. PARASCHIV, P. POPESCU, R. POPESCU, O. BĂDESCU
Contributions to the Improvement of NEOs Positions
In *Actual Problems in Celestial Mechanics and Dynamical Astronomy*, eds. B. Érdi, F. Szenkovits, Publications of the Astronomical Department of the Eötvös University (PADEU) **19**, 2007, ISBN 963-463-557, p. 279-282

P. Vernazza, A. Rossi, M. BIRLAN, M. Fulchignoni, A. NEDELCU, E. Dotto
832 Karin: Absence of Rotational Spectral Variations
Icarus **191** (2007), 330-336

M. BIRLAN, P. Vernazza, A. NEDELCU
Spectral Properties of Nine M-Type Asteroids
Astronomy and Astrophysics **475** (2007), 747-754

D.A. NEDELCU, M. BIRLAN, P. Vernazza, R.P. Binzel, M. Fulchignoni, M.A. Barucci
E-Type Asteroid (2867) Steins: Flyby Target for Rosetta
Astronomy and Astrophysics **473** (2007), L33-L36

D.A. NEDELCU, M. BIRLAN, P. Vernazza, P. Descamps, R.P. Binzel, F. Colas, A. Kryszczynska, S.J. Bus
Near Infra-Red Spectroscopy of the Asteroid 21 Lutetia. II. Rotationally Resolved Spectroscopy of the Surface
Astronomy and Astrophysics **470** (2007), 1157-1164

O. VADUVESCU, A. NEDELCU, M. BIRLAN, A. Sonka

Minor Planet Observations [511 Haute Provence]
Minor Planet Circular No. 59865 (2007), 3

R.P. Binzel, G. Masi, S. Foglia, P. Vernazza, T.H. Burbine, C.A. Thomas, F.E. Demeo, D. Nesvorny, M. BIRLAN, M. Fulchignoni
Searching for V-type and Q-type Main-Belt Asteroids Based on SDSS Colors
38th Lunar and Planetary Science Conference, (Lunar and Planetary Science XXXVIII), held March 12-16, 2007 in League City, Texas, LPI Contribution No. 1338, p.1851

A. POP
On the Detection and Diagnosis of Low-Level Stellar Variability
Romanian Astronomical Journal **17** (2007), 35-46

A. POP
On the Light-Curve Shape of DL Cas
Romanian Astronomical Journal **17** (2007), 47-65

Please, see also the conferences proceedings books:

- **Scientific Programs and Astronomy Education in SEE and Ukraine, Bucharest, Romania, 16-17 Sept. 2005, eds. Magda Stavinschi and Vasile Mioc,** Published in : **Roman. Astron. J. vol 16 Supplement, 2006.**
- **Solar and Stellar Physics Through Eclipses, Antalya, Side, 27-29 March, 2006, eds. Osman Demircan, Selim O. Selam, and Berahitdin Albayrak,** Published in: **ASP Conference Ser. Vol 370, 2007.**
- **Studies of the Near-Earth and Small Bodies of the Solar System, Nikolaev, 25-28 Sept. 2006, proceedings, 2007.**
- **Latest Progress in Astrophysics, Athens, 5-6 Oct. 2007,** proceedings to be published in **Roman. Astron. J. , 2008.**

ACKNOWLEDGEMENTS

The participants in this project are grateful to UNESCO-BRESCE for their financial support. Thanks are due also to Prof N. Yakimoff, Prof S. Anguelov, Prof A. Boksenberg, Prof P. Lasserre, Dr H. Moore, and Dr. P. Pypaert, for their help to start and to organize this regional collaboration, which led to the present IBSP project.

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