

**AMATEUR ASTRONOMERS ASSOCIATION
OF SERBIA - ACTIVITIES AND IMPORTANCE OF
ASSOCIATION IN AMATEUR ASTRONOMY IN SERBIA**

J. ALEKSIĆ^{1,2} and D. RADMILOVIĆ³

¹*University of Belgrade, Faculty of Mathematics, Belgrade, Serbia*

²*Astronomical society "Rudjer Boskovic", Belgrade, Serbia
E-mail: jovan.aleksic@gmail.com*

³*Amateur Astronomers Association of Serbia, Belgrade, Serbia
E-mail: office@saasr.org*

Abstract. In this paper, the Amateur Astronomers Association of Serbia is presented and its importance for popularization of astronomy as well. The activities of the Association in founding new societies, promotion, assistance in work and cooperation are listed. Particular review is made on visiting territories in Serbia where organized astronomical activities in the form of amateur societies do not exist, as well as on founding new societies.

1. INTRODUCTION

In 2009. there were about 15 amateur astronomical societies in Serbia, registered or nonregistered, and a number of astronomy sections within schools. Some societies were permanently active while some were intermittent. A lot of activity was based on individual work. Societies did not have well-established mutual cooperation, so they could not organize common activities effectively and the need for improving the situation emerged. The idea for organized common work on popularization of astronomy was born and Amateur Astronomers Association of Serbia (AAAS) was founded on 26 February 2010. The Association was founded by nine societies from Serbia: AS Novi Sad, AS Alfa from Niš, AS Andromeda from Knjaževac, AS Lira from Novi Sad, AS Novi Pazar from Novi Pazar, AS Milutin Milanković from Zrenjanin, AS Milutin Milanković from Pančevo, AS Orion from Ivanjica and AS Univerzum from Bačka Palanka. At the same time (January 2010), societies from Vojvodina founded association of astronomical societies from Vojvodina, so there were two Associations in Serbia. One year later, five societies from Vojvodina and one society from Niš left the AAAS, but four new societies joined. At the moment of writing this paper (2011), the AAAS has seven members: AS Andromeda (Knjaževac), AS Aristarh (Kragujevac), AS Novi Pazar (Novi Pazar), AS Magelanov Oblak (Prokuplje), AS Orion (Ivanjica), AAA Vlasina (Vlasotince) and NS GEA (Vršac).

Only organizations (entities) registered in the Serbian Business Registers Agency can be members of the Association. Individuals, societies that are not registered, and sections within other registered organizations cannot be members of Association, but this does not prevent cooperation with them.

The goals of the Association are:

- Coordinating work of astronomical societies and astronomical sections in Serbia
- Popularization of astronomy among general public

These goals are realized through series of activities.

2. ADMINISTRATIVE ACTIVITIES

Main activities of the Association are focused on assembling astronomical societies, exchanging knowledge and experience, organizing common activities, helping in foundation of new societies and other administrative assistance. From its foundation, the Association assisted in founding three new societies in Serbia. In 2010, the new law was declared, targeting societies. All new societies had to be founded according to the new law, and all the existing societies had to modify their constitutions in accordance with it. During 2011, AAAS provided help to astronomical societies to make their constitutions congruous with the new law. The website of the AAAS is set up. The form of the website is blog and the address is <http://saasr.org/>. The main focus of the blog is to record activities related to amateur astronomical societies. Most of the content are announcements and reports on various astronomical events, so that the visitors can be informed, in one place, on the forthcoming camps, lectures, schools, public observations etc. and can read the reports on the past ones. Due to AAAS engagement, two societies got telescopes. The Association provided telescopes for AS Vlasina, Vlasotince (donation from AS Novi Pazar) and AS Kasiopeja, Leskovac (donation from IME).

3. POPULARIZATION OF ASTRONOMY

The Association constantly realizes activities on popularization of astronomy among general public. The idea is not to replace regular activities of member societies, but to complement them. The aim is that people get interested in astronomy and become motivated to join local AS. Particular effort is made in work with schoolchildren. The Association organizes visits to schools throughout the country in cooperation with local astronomical societies. In the cities where local AS does not exist, the visits are organized with school management. A typical visit consists of a lecture, training of telescope usage, observation and astrophotography exhibition. In the next subsections, these activities will be described in details.

3. 1. LECTURES

Lectures are organized in the host institution (e.g. schools). Various topics are presented - Sun, Moon, stars, planets, astrobiology, cosmology. The lectures are popular and the goal is to present some interesting astronomical phenomenon to the wide audience. Lectures are presented by teachers, public educators or other persons with experience in science communication. The result is that audience have learned some new concept, but also become interested in astronomy.

3. 2. TRAINING OF TELESCOPE USAGE

Instructors start training with mount, and then place the tube and other parts. Each part is described and its role in observation explained. Terms like lenses, mirrors, refractor, reflector, oculars, focal length, and aperture are presented. After completing it, practical usage is demonstrated. Focusing and guiding are first done by instructors, and then by the observers themselves. For majority of visitors, this was the first contact with the telescope. Although some of them already knew something theoretically, it was the first time that they were able to try this practically.

3. 3. OBSERVATIONS

Firstly, some basic knowledge of the sky is explained and elements of astrognomy, constellations, some planets (if visible), are shown to citizens with the naked eyes. Then, telescope observations start, usually of Moon or Jupiter, and then of some other objects (galaxies, nebulae or other Messier objects) if it is possible. During the session, instructors talk about the object being observed - planet Jupiter, its bands and its moons, Moon craters, selenography, terminator. Some technical details are also explained during observations - current ocular/magnification, tracking and moving the object in the field of view, why the image is reverted upside down, etc. In this way, the observers are provided with additional information related to the actual event.



Figure 1: Observations.

3. 4. ASTROPHOTOGRAPHY EXHIBITIONS

Lots of amateur astronomers like to make images of observed objects. The Association collected best images in order to show them to the public. About 90 photos have been collected from astronomers and divided in two collections with 40-50 photos each. All images were printed in A4 format, and put into the frames. Each image is accompanied with a note describing the author, the name of object, date, location, camera model, camera parameters (focus, magnification, exposure,...), filter, and other information if available. The purpose of these exhibitions is twofold. Aesthetic, because visitors can enjoy beautiful images of the sky, and educational, because they can learn how some objects look like, owing to descriptions provided. Furthermore, the details about cameras used clearly show that the pictures were not taken by the sophisticated space telescopes or expensive professional equipment, but

rather by ordinary cameras that most people already have. In this way, we wanted to show to the visitors that everyone can make such images and to motivate them to try to do the same by themselves.

4. COLLABORATION

Finally, AAAS tries to make new and keep existing contacts with other subjects related to astronomy. This includes cooperation with universities and professional astronomical societies, cooperation with international amateur societies, contacts with media and contacts with other organizations related to astronomy. This collaboration is mutual and benefits to both sides. At the time of writing this paper (2011), it is manifested in cooperation with professional subjects, international societies and media. Collaboration within project BELISSIMA and with Astronomical Observatory Belgrade will be presented here, while the activities with international societies are presented in the separate paper of this proceedings (Radmilović & Aleksić, 2012a).

4. 1. ASTRONOMICAL STATION VIDOJEVICA - PROJECT BELISSIMA

Within cooperation on the BELISSIMA project, the Association published news and announcements of lectures and other events on the website www.saastr.org. Also, the Association is promoting the project and presenting its significance during various visits throughout Serbia. On the other hand, lectures held within BELISSIMA project were attended by amateur astronomers, too. During "Researchers night" manifestation (23.9.2011), dr Oliver Vince, professional astronomer from AOB, presented the project in Zrenjanin. An amateur astronomer IME was engaged by contract at the professional observatory. The president of the Association, Dragan Radmilović worked three months in the new observatory on mountain Vidojevica near Prokuplje. His engagement included the mount of 600 mm Cassegrain telescope, parabolic + hyperbolic, on ASA mount; all-sky camera SBIG 340 for monitoring the weather on the site using the internet; the meteorological station DAVIS VANTAGE pro2 and the seeing camera, SBIG All Weather seeing monitor with st-402 camera. Mr. Radmilović was present from the first days of mount to the first observations with this telescope.



Figure 2: Mounting telescope at Vidojevica.

4. 2. ASTRONOMICAL OBSERVATORY BELGRADE

The cooperation with Astronomical observatory Belgrade is realized through attending lectures and other events organized by AOB and publishing news, announcements and reports about events organized by AOB on the website www.saasr.org. A series of lectures, called Journal Club, is held at AOB from time to time. Amateur astronomers visit seminars and workshops organized by AOB and the topic of "Journal club", held on January 14th 2011 was "Astronomy from the chair", presented by Dragan Radmilović (AAAS), Zoran Tomić (AS Eureka) and Rade Marjanović (ADNOS). They presented systems for remote controlling robotized telescopes using the internet. They also attended the seminar of spectrometry, held by dr Istvan Vince, professional astronomer from AOB. Finally, the Association participated at XVI National Conference of Astronomers of Serbia with two talks and one poster. The authors were Jovan Aleksić from AS Rudjer Bošković, Belgrade and Dragan Radmilović, president of the AAAS.

5. CONCLUSION

Amateur Astronomers Association of Serbia plays an important role in improving amateur astronomy in Serbia. It helped foundation of new amateur astronomical societies, gathering and coordinating astronomical societies and performed a lot of necessary administrative work. The Association made about 20 ample astronomical events throughout Serbia. In this way, the interest for astronomy is raised which will result in more active work in the future. We hope that more people will join amateur societies and that the societies will continue to organize such activities by themselves. All this will contribute to improvement of amateur astronomy in Serbia. Finally, AAAS also has fruitful cooperation with professional institutions. All these activities strengthen the relationships between amateur and professional astronomers which will be of mutual benefit.

References

- Radmilović, D., Aleksić, J.: 2012a, *Publ. Astron. Obs. Belgrade*, "AAAS - International cooperation of astronomical societies.", this volume.
Amateur Astronomers Association of Serbia, <http://saasr.org>.