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"SPACE SCIENCES AND TECHNOLOGIES"
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EDITOR: MELINE ASRYAN

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LOCAL NEWS

Areg Mickaelian Re-Elected as Director of BAO

On September 20, Areg Mickaelian was unanimously re-elected to the position of the director of the Byurakan Astrophysical Observatory (BAO).



Areg Mickaelian

At present, A. Mickaelian is the Head of BAO research department “Astronomical Surveys” (since 2017) and a Leading Research Associate (since 2007). He is the founding President of ArAS (Co-President, since 2002). Since 2001 he has been lecturing at the YSU Physics Faculty, Chair of Astrophysics. Since 2002, he is the PI of the Digitized First Byurakan Survey (DFBS) project, since 2005 – founding Project Manager of ArVO, since 2006 – founding Chair of the Byurakan International Summer Schools (BISS), since 2009 – Sci. Secretary of Viktor Ambartsumian International Prize Steering Committee.

In 1997-2012, A. Mickaelian was invited for collaborative research to IAP, OHP and Lyon Observatory (France), Hamburger Sternwarte (Germany), Rome (Italy) and Cornell (USA) Universities. He has given invited seminars in the USA, UK, Germany, France, Italy, Belgium, India, etc.

His research interests relate to the search and study of active galaxies, astronomical large-area surveys, IR and X-ray sources, WDs and CVs, VOs. He has revealed 1103 blue stellar objects,

including many new QSOs, Seyferts, WDs, hot subdwarfs, CVs, etc. He has estimated the surface brightness of bright QSOs. By optical identifications he has revealed some 300 IR stars and some 1200 IR galaxies, including many new active galaxies and ULIRGs. He has identified more than 6000 X-ray sources, including new AGN, interacting galaxies, WDs, CVs, and carbon stars. From the IRAS FSC, by means of comparative analysis with radio and optical catalogs, IR galaxies with the highest IR/opt flux ratio were revealed. Among the SST sources, 21 stars were detected as having debris. He has suggested new methods for calculation of stellar proper motions and variability and using these methods, many high proper motion and variable stars were discovered. In 2002-2005, he accomplished the digitization of the First Byurakan Survey (FBS). In 2005, he created the ArVO, which became a member of the International Virtual Observatory Alliance (IVOA).

A. Mickaelian has published more than 130 sci. papers and electronic catalogues, as well as numerous sci-popular articles. He has edited a number of Proceedings and books. He has compiled “Viktor Ambartsumian” and 13 “Astronomy for students” DVDs, created an online database of Armenian astronomers.

Mickaelian is a member of IAU, EAS, EAAS, AAS, ASP, ArAS, EPS, APS, Euroscience, SEAC, ITHEA, and other scientific societies and organizations, member of editorial boards of AATr and “Open Astronomy Journal”, Editor of ArASNews.

He was awarded the annual prizes of APS, EAAS and eScience, certificates of IAU/UNESCO, ArAS, NAS RA and Ministry of Culture, many research grants of European and American sci. foundations. He is a member of EAAS Council and International Bureau, IVOA Executive Committee, SREAC, and several IAU Working Groups. In 2009, he was the Armenian coordinator of IYA declared by UNESCO.

IAU Former President Visited the Byurakan Astrophysical Observatory

On September 6, the Byurakan Astrophysical Observatory (BAO) welcomed an honorary guest from the International Astronomical Union (IAU).

IAU former president Ewine F. van Dishoeck visited the Byurakan Astrophysical Observatory (BAO) for the first time. During the visit, she met BAO director Areg Mickaelian, and discussed past and future cooperation between the BAO and IAU.



Ewine F. van Dishoeck at 1m Schmidt Telescope. BAO.



Ewine F. van Dishoeck at BAO Seminars. BAO.

The visit was also a tribute to Victor Ambartsumian, who was the IAU president in 1961-1964. For that reason, she also visited Viktor Ambartsumian house-museum, as well as telescopes with a mirror diameter of 1m and 2.6m.

E. Dishoeck also made a report at the Byurakan weekly seminars. It was devoted to James Webb Space Telescope, the largest optical telescope in space (mirror diameter 6.5m) of NASA designed primarily to conduct infrared astronomy.

8th Byurakan International Summer School

On September 12-16, the Byurakan Astrophysical Observatory (BAO) hosted the [8th Byurakan International Summer School](#) (8BISS).

The school is held every two years. This time BISS was entitled “Astronomy as the leader of Natural Sciences”.

During the school the students participated in lectures and practical tutorial sessions on Observational

Astronomy, Data Reduction and Analysis, Astronomical Surveys, Catalogues, Archives and Databases, Theoretical Astrophysics, Virtual Observatories and Astroinformatics, Space Astronomy, Exoplanets and Planetary Science, Interdisciplinary and Multidisciplinary Sciences.

It should be noted that the dates of the school were chosen specially, so that the participants had an opportunity to participate in the international conference scheduled on September 19-23.



The Byurakan International Summer School was established in 2006. In 2018, the International Astronomical Union (IAU) announced the Byurakan International Summer School (BISS) as one of the 3 best astronomical schools in the world.

Space Sciences and Technologies International Conference

On September 19-23 the Byurakan Astrophysical Observatory (BAO) hosted the “Space Sciences and Technologies” international conference.

44 experts and students of the field participated in the conference. A wide range of topics were discussed during the conference, namely: Space Sciences and Space Astronomy, Multiwavelength Astronomical Surveys, Catalogues, Archives and Databases, Exoplanets and Planetary Science, Virtual Observatories and Astroinformatics, Space Technologies, Interdisciplinary and Multidisciplinary Sciences.

The proceedings of the conference will be published in [Communications of BAO](#) (ComBAO) refereed journal, Volume 69, Issue II (Dec 2022).

Visit the page for more: <https://www.bao.am/meetings/meetings/SSTConf/index.html>

The conference was organised by the BAO, as well as Armenian Astronomical Society (ArAS), Armenian Virtual Observatory (ArVO), IAU South West and Central Asian Regional Office of Astronomy for Development (SWCA ROAD) and Peter the Great St.Petersburg Polytechnic University (SPbPU).



Participants of Space Sciences and Technologies” international conference. BAO.

BAO Researchers at Pan-Armenian Symposium 2022

From September 26 to October 1, the “Pan-Armenian Scientific Conference 2022” was held in Vanadzor, aiming at science development in the republic, and creating connections between research institutes and universities. Scientists carrying out leading research projects of the RA Science Committee and authors of a number of other projects were invited to the conference.

Among the participants were also researchers from the Byurakan Astrophysical Observatory, namely Areg Mickaelian, Elena Nikoghosyan, Naira Azatyan, Anahit Samsonyan and Derenik Andreasyan.

Two of the researchers made presentations: BAO director Areg Mickaelian - “Revelation of Early Stages of Gal. Evolution by Means of MW Study of Active Galaxies”, and BAO leading researcher Elena Nikoghosyan - "Star Forming Regions: Origin and Evolution”.



Anahit Samsonyan, Naira Azatyan, Elena Nikoghosyan, Areg Mickaelian, Derenik Andreasyan. 2022. Vanadzor.

STARMUS at BAO

The Byurakan Astrophysical Observatory (BAO) hosted participants of the STARMUS 6 science and art festival.

Among the honorary guests were astrophysicist and Nobel Laureate Kip Thorne, an American physician, engineer, and former NASA astronaut of Armenian descent Jim Bagian, computer scientist Bernhard Schölkopf and others.

Founded by Dr. Garik Israelian, astrophysicist at the Institute of Astrophysics of the Canary Islands (IAC) and Dr. Brian May, astrophysicist and the lead guitarist of the iconic rock band Queen, the STARMUS festival is a combination of science, art and music that has featured presentations from Astronauts, Cosmonauts, Nobel Prize Winners and prominent figures from science, culture, the arts and music. Learn more about the festival in our ArASNews 156 issue.



STARMUS 2022 Participants. ~~2022~~ BAO.

ANNIVERSARIES

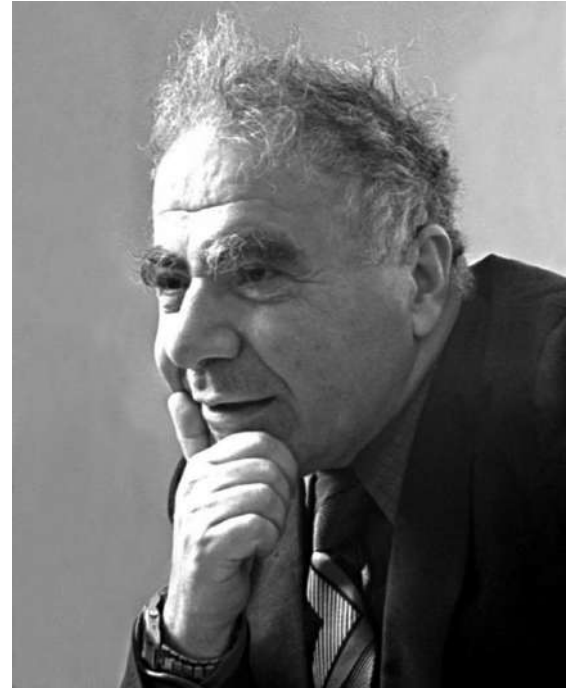
Viktor Ambartsumian's 114th Anniversary

On September 18, the Byurakan Astrophysical Observatory (BAO) celebrated the great Armenian scientist V. Ambartsumian's 114th anniversary. According to the tradition, BAO staff members visited BAO Cemetery to pay homage to the great scientist.

Since 2009, V. Ambartsumian's birthday has been celebrated in Armenia as Astronomy Day, according to the decision of the RA Government.

V. Ambartsumian (1908-1996) was born on September 18, 1908. He was one of the greatest scientists of the XX century, the greatest Soviet astrophysicist and the founder of the theoretical astrophysics school in the USSR that has fundamentally contributed to various fields of astronomy and astrophysics, cosmogony, theoretical physics, mathematics, and philosophy. His revolutionary works on stellar evolution and activity of galactic nuclei turned over the development of astrophysics.

Ambartsumian was also a great organizer of science, an important political and public figure. He authored more than 700 articles and more than 20 books.



Viktor Ambartsumian

OBITUARIES

Astronomer Milcho Tsvetkov Passed Away



Milcho Tsvetkov

It is with great sorrow that we announce the passing of Milcho Tsvetkov, a member of the Armenian Astronomical Society.

Milcho Tsvetkov was born on October 15, 1945 in Sofa, Bulgaria. His major fields of interest were Flare Star Search in Stellar Aggregates, Large Astronomical Databases, Data Mining, Image Processing, Archiving of Photographic Observations, Synthesis between Astronomical Imaging and Information and Communication Technologies, Virtual Observatories.

His flare star search in stellar aggregates done during the completion of his doctorate in Physics and Mathematics at Yerevan State University in the Byurakan Astrophysical Observatory, Armenia, with supervisor Prof. L. V. Mirzoyan, resulted in the discovery and investigation of many flare stars. This work was continued with the installation and the first observations of the Schmidt telescope of the Rozhen Observatory at the Bulgarian Academy of Sciences done by Milcho Tsvetkov.

He published more than 30 scientific papers and was a member of the European Astronomical Society.

During the last 30 years his main scientific project was the establishment and development of the Wide-Field Plate Database (WFPDB). It was a project of the Institute of Astronomy of the Bulgarian Academy of Sciences, launched in 1991 by the Working Group “Wide-Field Sky Surveys” of the International Astronomical Union. Having in mind that the astronomical photographic observations are a unique source for follow-up investigations of the behavior of the celestial objects for a period of more than 100 years, the main task of the WFPDB was collection and analysis of all worldwide wide-field astronomical photographic observations (more than 2 500 000 plates) done in more than 200 observatories with more than 400 instruments. The total information recorded on astronomical plates is estimated about 1 PB (=10⁶GB=10⁹MB=10¹⁵Bytes) provided in computer-readable format. It suggests that after the plate inventory and the proposed plate catalogue the plates themselves are digitized and online access to the plate image is provided. This task was impossible up to the middle of the 90s of the last century. With the new development of the information and communication technologies, and especially with the internet development including the digitization technologies, this problem was completely solved. The WFPDB is accessible via an online system, which provides powerful means for searching plates in the database. Searching is possible by all of the original plate attributes, e.g., date of observation, plate No, filter, plate emulsion, etc. It is also possible to search for plates within a specified

region on the sky, by supplying a pre-defined radius of the region, or using the field of the instrument, to which the plates belong. The results of the query page contain data for the plates found, as well as links to the description of the archive. Two types of image data are supported in the WFPDB currently. The full-colour previews tiff and jpg are either low-resolution colour scans, or simply digital camera photos. They are useful for the user to get an idea of the plate quality, note and remarks made on the plate, without downloading a huge amount of scanned data. They are currently available through the WFPDB search engine. The plate row scans are done with high-resolution mainly with flatbed commercial scanners in fits/tiff format. The priority was to integrate the WFPDB system into the Virtual Observatory structure and thus utilize the experience and efforts in astronomical archives processing, data reduction, etc. It was done for the German wide-field plates with information integrated in the German Astrophysical Virtual Observatory.

Milcho Tsvetkov was a principal investigator of numerous astronomical projects dedicated to searching, preservation, digitization, development and web access of the astronomical plate archives in Bulgaria, as well as at the European astronomical observatories in Hungary (Konkoly), Serbia (Belgrade), Romania (Bucharest), Russia (Moscow), Ukraine (Kyiv, Odessa, Lvov), Germany (Muenster, Potsdam, Hamburg, Bamberg, Jena and Heidelberg).

The interest of Milcho Tsvetkov to the history of science resulted in some papers dedicated to the mathematician and astronomer Simon Marius (1573 – 1624), who discovered in 1610 the four largest satellites of Jupiter with a Belgian made telescope at about the same time as Galileo Galilei, but published his discoveries 4 years later, as well as the investigations of the work of the Bulgarian physicist Professor Georgi Manev.

Milcho Tsvetkov has established Bulgarian–Serbian Cooperation in Astronomy since 1999 whose results were reported during the regular conferences – the last one will be held in October 2022.

One of the last initiatives of Milcho Tsvetkov as a Humboldt Foundation Alumni was “Humboldt Astroinformatics Networking” which aims to unify scientists who conduct research in the astroinformatics field from his home country and the neighbouring Balkan countries, as well as from Armenia, Germany and Ukraine. The network acted as a platform for initiating collaborative research - developing research tools and sharing information about innovations in the IT field.

OTHER

Armenian Astronomy Through Stamps

Public interest in astronomy has been constantly growing. This can also be observed in various stamps and postcards related to astronomy of Armenia that were issued in the last few years.

“Haypost” issued [a new postage](#) stamp related to the field of astronomy. Dedicated to the theme “Prominent Armenians. 100th Anniversary of Grigor Gurzadyan” the stamp has been put into circulation.

Grigor Gurzadyan is one of the pioneers of space astronomy. Save the date as on the occasion of his 100th anniversary, a jubilee seminar will be held at the Byurakan Astrophysical Observatory on October 17.

In 2021, a [double-sided postcard](#) with 1 stamp dedicated to the theme “Byurakan Astrophysical Observatory” was put into circulation. The stamp of that postcard depicts the largest telescope of the BAO, and famous Armenian astronomers Viktor Ambartsumian and Beniamin Markarian with German astronomer Nikolaus Richter and other scientists in the lower left corner.



In 2017, a stamp dedicated to the theme “Armenia as a Regional Astronomical Center” was put into circulation. The postage stamp depicts “The Helix Nebula”, also known as “The Helix” and the upper part of the postage stamp portrays the logo of the International Astronomical Union (IAU).

At present, Armenia is considered as the IAU’s South West and Central Asian Regional Office of Astronomy for Development.

In 2013, a stamp dedicated to the 100th anniversary of Beniamin Markarian's birthday was put into circulation.

ArAS News is the electronic newsletter of the Armenian Astronomical Society. It was distributed to all ArAS members from the beginning of 2002, 4 times a year, typically at the end of each trimester. In 2009-2014, 8 issues annually and since 2015, 12 issues annually have been released.

ArASNews publishes information materials on ArAS, Byurakan Astrophysical Observatory and the Armenian astronomy in general, reports on ArAS Annual Meetings and participation of the Armenian astronomers in important international meetings, articles on occasion of anniversaries of famous Armenian astronomers and ArAS members, acceptance of new ArAS members, achievements of the Armenian astronomers, astronomical education in Armenia, Armenian archaeoastronomy, as well as science articles (reviews) on important studies.

So, if you want to share your studies with the scientific community, send us your articles to melin.asryan@gmail.com. They will be reviewed for the publication in ArAS Newsletters next issues.

[ArAS Newsletter issues](#) are available online.