

# ArAS News

NEWSLETTER

ARMENIAN ASTRONOMICAL SOCIETY (A r A S)



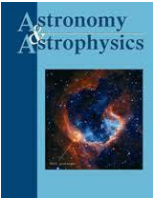
No. 112 (December 31, 2017)



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ArAS Newsletter online at: <http://www.aras.am/ArasNews/arasnews.html>

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## BAO ANNUAL REPORT 2017

2017 annual report of the Byurakan Astrophysical Observatory (BAO) took place on December 11. Dr. Areg Mickaelian, Director of BAO, presented the projects accomplished over the year. The most significant scientific achievements were the discovery of a rare changeable star, dwarf carbon star at a very long distance, a large number of variable radio sources. New divisions have been established in the observatory: astrochemistry and astrobiology, high energy astrophysics, historical and cultural astronomy. Besides, these divisions an infrastructure of astroinformatics has been established, which includes the digitization program and Armenian virtual observatory.



A major step towards the development of the historical and cultural astronomy was “Astronomical Heritage of the Middle East” international conference which has been approved by UNESCO Director General within UNESCO Participation Program for 2016-2017 cycles is devoted to the role of astronomy in culture. During the year the premium program for effective young employees has been implemented. In 2017 Turkey joined to the South West and Central Asian Regional Office of Astronomy for Development which is located in Armenia, Byurakan. An agreement was signed between the Ministry of Nature Protection of the Republic of Armenia and Byurakan Astrophysical Observatory to create botanical garden in the territory of the observatory. During the year there were more than 60 scientific publications, 18 conferences and other events, 27 seminars, 85 scientific reports and 53 trips. These are only a small part of the work done.

Astronomical year was summed up by the presentation of the calendar of astronomical events of 2018 and the award of ArAS Annual Prize (Yervand Terzian Prize) for young astronomers and Galileo Teacher Training Program (GTTP) international certificate.

## GAVO-ArVO Collaboration Workshop

*Areg Mickaelian, Joachim Wambsganss, Markus Demleitner, Hendrik Heintl*

In frame of the joint funding by Armenian Ministry of Education and Science (MES) and German Bundesministerium für Bildung und Forschung (BMBF) a project on *Building high-performance research environment through German and Armenian Astrophysical Virtual Observatories* (GAVO and ArVO) is running led by Joachim Wambsganss (German PI) and Areg Mickaelian (Armenian PI).



The project started with a visit of 8 Armenian scientists and students in November 23-30, 2017 to Astronomisches Rechen-Institut – Universität Heidelberg (ARI, Heidelberg, Germany); *Dr. Areg Mickaelian* (ArVO Project Manager), *Dr. Daniel Baghdasaryan*, *Hayk Abrahamyan*, and *Gor Mikayelyan* (Byurakan Astrophysical Observatory, BAO, NAS RA), *Dr. Hrach Astsatryan*, *Dr. Aram Knyazyan*, and *Naira Kocharyan* (Institute for Informatics and Automation Problems, IIAP, NAS RA) and *Elen Altunyan* (B.Sc. student involved in ArVO project). From the German side, *Dr. Joachim Wambsganss* (GAVO Project Manager), *Dr. Markus Demleitner* and *Hendrik Heintl* took part in the project activities. The project started with a Workshop to introduce VO standards and tools, introduction into TAP and ADQL and the activities of GAVO to the Armenian team members. The second part of the Workshop was devoted to the implementation of VO tools on the Digitized First Byurakan Survey (DFBS), the main product of ArVO. The main task is the publication of the DFBS images and spectra through VO, i.e. making SIAP and SSAP services for the DFBS. Some scientific use cases were explored and discussed. Areg Mickaelian and Aram Knyazyan delivered talks for ARI staff on the *Scientific Activities of the Byurakan Astrophysical Observatory* and *ArVO Tools and Services*, respectively.



The project will be continued in 2018 as well, when visits of German scientists and students to Armenia and more visits of Armenian scientists and students to Germany are planned. In addition, a Workshop will be organized in Armenia. The 6<sup>th</sup> Byurakan International Summer School (6BISS) to be held in September 2018 will be combined with the VO-days training.

## ArAS 2017 Prize for Young Astronomers

ArAS Annual Prize for Young Astronomers (Yervant Terzian Prize) 2017 was awarded to Miss Naira Azatyan (BAO, Armenia).

Naira AZATYAN was born on 11.06.1991 in Martuni, Armenia. She has graduated from the Yerevan State University in 2012 with B.Sc. and in 2014 with M.Sc. She joined BAO in 2013 working with Dr. Elena



NIKOGHOSYAN and presently she is a Junior Research Associate. Her research interests include Young Stellar Objects, their study in near and mid-infrared wavelengths, mainly using UKIRT DSS and Spitzer IRS archival data. In 2017, Naira showed high activity; she published a paper in A&A and three conference papers. Naira was a member of LOC of Stellar Associations: 70 Years of Research conference and Joint International Conference on Astrophysics for Young Scientists. She also had a contributed talk in conference of Stellar Associations: 70 Years of Research. She has been awarded as one of “Highly Effective Young Researchers of BAO”.

ArAS Prize is equivalent to USD 500.

The annual award for young astronomers has been established since 2004 by ArAS and is granted to astronomers aged up to 35, who have reached the greatest scientific achievements during the year.

All ArAS Prize Winners:

- 2017 Naira AZATYAN (BAO)
- 2016 Anahit SAMSONYAN (BAO)
- 2015 Artur HAKOBYAN (BAO)
- 2014 Gurgen PARONYAN (BAO)
- 2013 Hayk ABRAHAMYAN (BAO) and Avet HARUTYUNYAN (IAC, Spain)
- 2012 Vardan ADIBEKYAN (CAUP, Portugal)
- 2011 Marine AVTANDILYAN (ASPU)
- 2010 Parandzem SINAMYAN (BAO)
- 2009 Lusine SARGSYAN (BAO)
- 2008 Vardan ADIBEKYAN (YSU) and Artur HAKOBYAN (BAO)
- 2007 Igor CHILINGARIAN (OBSPM, FRANCE)
- 2006 Lilit HOVHANNISYAN (BAO) and Parandzem SINAMYAN (BAO)
- 2005 Artak HARUTYUNYAN (BAO) and Elena HOVHANNESIAN (BAO)
- 2004 Lusine SARGSYAN (BAO)





## GTTP 2017 Certificate to Armenian Teacher

Galileo Teacher Training Program (GTTP) started in 2009 and was one of the International Year of Astronomy 2009 (IYA-2009) cornerstone projects aiming at creation of a worldwide network of certified “Galileo Ambassadors” and "Galileo Teachers". GTTP successfully continues after IYA-2009 in frame of the project Beyond IYA-2009 and is now an official educational program of the International Astronomical Union (IAU) and part of the "IAU Decadal Strategic Plan” in 2010-2020. Galileo Ambassadors are equipped to train other teachers in these methodologies, leveraging the work begun during IYA2009 in classrooms everywhere. The GTTP Armenian Ambassador is Dr. Areg Mickaelian. In addition, Dr. Marietta Gyulzadyan is the GTTP Armenian Coordinator.

**Galileo Teachers** receive training in the effective use and transfer of astronomy education tools and resources into classroom science curricula and disseminate this knowledge among their peers. Through workshops, online training tools and basic education kits, the products and techniques developed by this program can be adapted to reach locations with few resources of their own, as well as computer-connected areas that can take advantage of access to robotic optical and radio telescopes, webcams, astronomy exercises, cross- disciplinary resources, image processing and digital universes (web and desktop planetariums). It is supposed that Galileo teacher uses new methods in astronomy education and train other teachers sharing their knowledge.

In 2017, GTTP international certificate was awarded to Miss Armine Patatanyan.



Armine has graduated from the Faculty of International Affairs in YSU, she continued her studies in Italy and today she works in the United Nation’s Development program. Astronomy became her object of interest two years ago, so she is doing everything both to transmit and acquire more knowledge. Armine has her own telescope. Without any help, she observed and created a program and developed teaching methods for introducing the Universe to children. She teaches in “Nagashyan Children’s Home” which is a children’s support center and Yerevan secondary school N 87. Armine is also member of “Goodricke John” NGO of

amateur astronomers. She is also very active in organizing public astronomical observations for amateur astronomers throughout Armenia. The purpose of these observations is not only to popularize astronomy as a cultural phenomenon, but also to form respect towards science in youth circles.

### Galileo Teachers in Armenia:

2017 Armine PATATANYAN

2016 Sona FARMANYAN (BAO, NAS RA) and Levon ARAMYAN (BAO)

2015 Hayk ABRAHAMYAN (BAO)

2014 Sergey NERSISYAN (Armenian State Pedagogical University)

2014 Ashot HAKOBYAN (BAO)

2013 Robert SARGSYAN (Basic College of Armenian State Agrarian University)

2012 Avetik GRIGORYAN (Armenian Youth Aero-Space Club, AYAS)

2011 Tigran NAZARYAN (BAO)

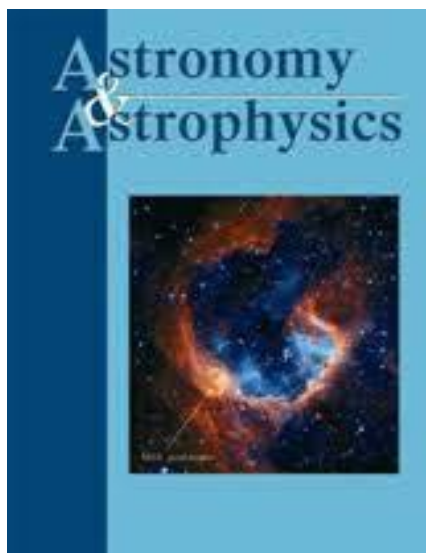
2011 Marietta GYULZADYAN (BAO and Yerevan Physics-Mathematics School)

## ASTRONOMY & ASTROPHYSICS JOURNAL IS OPEN FOR ARMENIAN AUTHORS

*Armenian authors can be published in A&A free of charge.*

To trigger the growth of Armenian astronomers' scientific effectiveness, an agreement was signed between Dr. Areg Mickaelian, Director of Byurakan Astrophysical Observatory (BAO), and Prof. Xavier Barkons, Director of the European Southern Observatory, on Armenia's membership to the authoritative European journal "Astronomy & Astrophysics".

Astronomy & Astrophysics is an international Journal that publishes papers on all aspects of astronomy and astrophysics (theoretical, observational, and instrumental) independently of the techniques used to obtain the results.

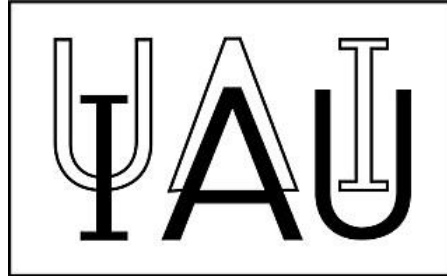


The journal is published by EDP Sciences. Institutions and private individuals can subscribe to A&A. Access to the journal is defined by IP number. Access is free to subscribers of the journal. An archive of the published articles is maintained by the Centre des Données Stellaires (CDS) in Strasbourg. Astronomy & Astrophysics is a journal established through the amalgamation of various national journals. New Member-Countries can be admitted upon fulfilling certain criteria. The journal is governed by the Board of Directors, whose members are designated by the Member Countries. The Board decides on the policies for A&A which include the general guidelines for publishing, the selection of the Editors, the various financial aspects, as well as the membership of countries.

Recently, BAO also signed an agreement with the Astronomical Society of the Pacific to publish a collection of materials of "Astronomical Heritage of the Middle East" international conference, which has been approved by UNESCO Director General within UNESCO Participation Program for 2016-2017 cycles. The co-editors of the collection are Sona Farmanyan, MacKim Malvil (US), Mohammad Bagheri (Iran), Areg Mickaelian.

It is especially important that Armenian scientists' works will be presented to the international community in English.

## RELEASE OF IAU ASTRONOMY OUTREACH NEWSLETTER 2017, December



0) From the Editors

1) IAU highlights Pro-Am Collaborations

2) IAU Symposium 335: Education and Outreach Session

3) National Outreach Contact (NOC) Corner: News from Ethiopia

4) Join Globe at Night (GaN) for 2018 campaigns!

5) European Southern Observatory (ESO) launches new Virtual Reality Tours to experience its sites

6) Latin American Olympiad of Astronomy and Astronautics 2017

7) Science Communication at the European Geosciences Union (EGU) 2018

8) Communicating Physics and Astronomy to a Visually Impaired Audience

9) Meetings & Global Events

Recently added

Important Dates

Upcoming

10) IAU Astronomy Outreach Newsletter in other languages

11) Contributions to IAU Outreach Newsletter





## Gabriel Kojoian – 90



*Prof.* Gabriel Kojoian is one of the outstanding Diaspora Armenian astronomers and well-known American radio-astronomers of the 20th century. He has a serious contribution in astrophysics, as well as in astronomical instrument-making. Gabriel Kojoian was born on December 11, 1927 in Providence (Rhode Island, USA). He was Harry and Nazley (Petikian) Kojoians' son. He graduated from Brown University (1952) getting bachelor's degree in the field of electrical engineering. Later in 1957 he graduated from Rhode-Island University getting master's degree in the field of nuclear physics. He lived in the state of Wisconsin for 22 years, later he moved to California. He got a doctorate of sciences in physics (1966, University of California, Berkeley). Kojoian worked in Tracerlab (1966-1967), at NASA Ames (1967-1968), at the University of Massachusetts (1969-1971), at the Technical Institute of Massachusetts (MIT, 1972-1973) and at Pahlavi University of Shiraz in Iran (1975- 1976). In 1976 and 1978 as a visiting professor he also worked at the Byurakan Astrophysical Observatory under V.A. Ambartsumian's supervision, investigating Markarian galaxies. Since 1978 he has worked at Eau Claire University of Wisconsin; he was a professor of physics and astronomy. He was one of the favorite lecturers; he was especially known for his enthusiasm and often for non-traditional approach to the subject.

Kojoian's scientific interests refer to the extragalactic and galactic radio astronomy, which was the primary field of his researches. Other fields of his researches were the physics of elementary particles, solar physics and non-linear optics. During the last years of his life he also worked on the problem of quantum points at the centre of Optical Sciences of the University of Arizona. He initiated, projected and constructed a coordinate measuring device of great exactness in common with his group at Eau Claire. In particular, that device measured the exact positions of hundreds of galaxies, which were later observed in Green Bank and Arecibo. These works were published in the American high-ranked *Astronomical Journal*. Kojoian managed the realization of projects of a number of other devices. One of his significant works was the coordinate measuring of Markarian galaxies, which was realized in common with Byurakan astronomers. And before his death he took the initiative of the project in measuring the coordinates of objects of the Second Byurakan Survey as well. Kojoian's scientific works always brought forth spacious projects where his pupils could also be included and have a success. He often helped his students with his own resources.

At present Kojoian's pupils are well-known professors and scientists of numerous American universities and research institutes. Kojoian has traveled to many places of the world due to his works; from Canada to Peru and from Europe to Middle East, published many scientific works. Kojoian was a member of American Astronomical Society. He was a member of the Union for Armenian Relief and Armenian Youth Union in Providence and Boston as well. Gabriel Kojoian passed away on May 17, 1998 at the age of 70, being a victim of heart attack. Kojoian was also known as a very honest, human, friendly person with a sense of humor.

## Emil Mirzabekyan – 95



On December 12 we celebrated the 95<sup>th</sup> anniversary of the outstanding Armenian radiophysicist acad. Emil Hayk Mirzabekyan. He was born in 1922 in Yerevan. He participated in the 2<sup>nd</sup> World War. In 1950, he graduated from the Yerevan University and in 1951 started working at the Arm. SSR Academy of Sciences Institute of Physics, then entered Moscow P.N. Lebedev Physics Institute PhD courses and defended his PhD thesis under the supervision of the famous radioastronomer *Prof. S.E. Khaykin*. In 1955-60, he worked at the Byurakan Astrophysical Observatory (BAO). Since 1960 he was the Director of the Arm. SSR Academy of Sciences newly founded Institute of Radiophysics and Electronics organized by him on the basis of BAO Department of Radioastronomy. In 1971 he was elected corresponding-member of the Arm. SSR Academy of Sciences, in 1974 – academician, in 1974-76 he was the academician-secretary of the Arm. SSR Academy of Sciences Physical-Technical Sciences and Mechanics Division, and since 1976 – the Vice-President of the Arm. SSR Academy of Sciences.
































Mirzabekyan has lectured at the YSU, where the Department of Radiophysics was opened on his initiative. His research works were devoted to studies of supersensitive radio detecting systems at the ultra-high frequencies (UHF) range. He was the founder of UHF radiophysics in Armenia. He has created a new type of electromagnetic radiation exploration devices and he was the first to study the polarization of the solar radio emission. His studies found broad practical applications in various spheres of economy. The supersensitive detecting systems created by Mirzabekyan and his fellows are being applied in space explorations.

In 1961 Mirzabekyan became a member of the International Astronomical Union (IAU). He was a Deserved Figure of the Arm. SSR science and engineering (1974), Deputy of the Arm. SSR Supreme Council X convocation. He was awarded with orders of Red Star, Patriotic War 2<sup>nd</sup> degree and October revolution.

Emil Mirzabekyan deceased after heavy illness at the age of 58 years, on September 16, 1980 in Moscow.

# CALENDAR OF LUNAR PHASES

## JANUARY 2018

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1 	2  Full Moon	3 	4 	5 	6 	7 
8  Lunar crescent (last quarter)	9 	10 	11 	12 	13 	14 
15 	16 	17  New Moon	18 	19 	20 	21 
22 	23 	24  Lunar crescent (first quarter)	25 	26 	27 	28 
29 	30 	31  Full Moon				